sky130_fd_sc_hs_ss_1.28v_-40C.ccs Library

Cell Groups
SKY130_FD_SC_HS__A2111OIx
SKY130_FD_SC_HS__A2111Ox
SKY130_FD_SC_HS__A211OIx
SKY130_FD_SC_HS__A211Ox
SKY130_FD_SC_HS__A21BOIx
SKY130_FD_SC_HS__A21BOx
SKY130_FD_SC_HS__A21OIx
SKY130_FD_SC_HS__A21Ox
SKY130_FD_SC_HS__A221OIx
SKY130_FD_SC_HS__A221Ox
SKY130_FD_SC_HS__A222OIx
SKY130_FD_SC_HS__A222Ox
SKY130_FD_SC_HS__A22OIx
SKY130_FD_SC_HS__A22Ox
SKY130_FD_SC_HS__A2BB2OIx
SKY130_FD_SC_HS__A2BB2Ox
SKY130_FD_SC_HS__A311OIx
SKY130_FD_SC_HS__A311Ox
SKY130_FD_SC_HS__A31OIx
SKY130_FD_SC_HS__A31Ox
SKY130_FD_SC_HS__A32OIx
SKY130_FD_SC_HS__A32Ox
SKY130_FD_SC_HS__A41OIx

SKY130_FD_SC_HS__A41Ox
SKY130_FD_SC_HS__AND2Bx
SKY130_FD_SC_HS__AND2x
SKY130_FD_SC_HS__AND3Bx
SKY130_FD_SC_HS__AND3x
SKY130_FD_SC_HS__AND4BBx
SKY130_FD_SC_HS__AND4Bx
SKY130_FD_SC_HS__AND4x
SKY130_FD_SC_HS__BUFx
SKY130_FD_SC_HS__CLKBUFx
SKY130_FD_SC_HS__CLKDLYINVx
SKY130_FD_SC_HS__CLKINVx
SKY130_FD_SC_HS__CONB
SKY130_FD_SC_HS__DELAYx
SKY130_FD_SC_HS__DFBBNx
SKY130_FD_SC_HS__DFBBP
SKY130_FD_SC_HS__DFRBPx
SKY130_FD_SC_HS__DFRTN
SKY130_FD_SC_HS__DFRTPx
SKY130_FD_SC_HS__DFSBPx
SKY130_FD_SC_HS__DFSTPx
SKY130_FD_SC_HS__DFXBPx
SKY130_FD_SC_HS__DFXTPx
SKY130_FD_SC_HS__DIODE_2
SKY130_FD_SC_HS__DLCLKPx
SKY130_FD_SC_HS__DLRBNx

SKY130_FD_SC_HS__DLRBPx
SKY130_FD_SC_HS__DLRTNx
SKY130_FD_SC_HS__DLRTPx
SKY130_FD_SC_HS__DLXBNx
SKY130_FD_SC_HS__DLXBP
SKY130_FD_SC_HS__DLXTNx
SKY130_FD_SC_HS__DLXTP
SKY130_FD_SC_HS__DLYGATE4SDx
SKY130_FD_SC_HS__EBUFNx
SKY130_FD_SC_HS__EDFXBP
SKY130_FD_SC_HS__EDFXTP
SKY130_FD_SC_HS__EINVNx
SKY130_FD_SC_HS__EINVPx
SKY130_FD_SC_HS__FAHCIN
SKY130_FD_SC_HS__FAHCON
SKY130_FD_SC_HS__FAHx
SKY130_FD_SC_HS__FAx
SKY130_FD_SC_HS__HAx
SKY130_FD_SC_HS__INVx
SKY130_FD_SC_HS__MAJ3x
SKY130_FD_SC_HS__MUX2Ix
SKY130_FD_SC_HS__MUX2x
SKY130_FD_SC_HS__MUX4x
SKY130_FD_SC_HS__NAND2Bx
SKY130_FD_SC_HS__NAND2x
SKY130_FD_SC_HS__NAND3Bx

SKY130_FD_SC_HS__NAND3x
SKY130_FD_SC_HS__NAND4BBx
SKY130_FD_SC_HS__NAND4Bx
SKY130_FD_SC_HS__NAND4x
SKY130_FD_SC_HS__NOR2Bx
SKY130_FD_SC_HS__NOR2x
SKY130_FD_SC_HS__NOR3Bx
SKY130_FD_SC_HS__NOR3x
SKY130_FD_SC_HS__NOR4BBx
SKY130_FD_SC_HS__NOR4Bx
SKY130_FD_SC_HS__NOR4x
SKY130_FD_SC_HS__O2111AIx
SKY130_FD_SC_HS__O2111Ax
SKY130_FD_SC_HS__O211AIx
SKY130_FD_SC_HS__O211Ax
SKY130_FD_SC_HS__O21AIx
SKY130_FD_SC_HS__O21Ax
SKY130_FD_SC_HS__O21BAIx
SKY130_FD_SC_HS__O21BAx
SKY130_FD_SC_HS__O221AIx
SKY130_FD_SC_HS__O221Ax
SKY130_FD_SC_HS__O22AIx
SKY130_FD_SC_HS__O22Ax
SKY130_FD_SC_HS__O2BB2AIx
SKY130_FD_SC_HS__O2BB2Ax
SKY130_FD_SC_HS__O311AIx

SKY130_FD_SC_HS__O311Ax
SKY130_FD_SC_HS__O31AIx
SKY130_FD_SC_HS__O31Ax
SKY130_FD_SC_HS__O32AIx
SKY130_FD_SC_HS__O32Ax
SKY130_FD_SC_HS__O41AIx
SKY130_FD_SC_HS__O41Ax
SKY130_FD_SC_HS__OR2Bx
SKY130_FD_SC_HS__OR2x
SKY130_FD_SC_HS__OR3Bx
SKY130_FD_SC_HS__OR3x
SKY130_FD_SC_HS__OR4BBx
SKY130_FD_SC_HS__OR4Bx
SKY130_FD_SC_HS__OR4x
SKY130_FD_SC_HS__SDFBBNx
SKY130_FD_SC_HS__SDFBBP
SKY130_FD_SC_HS__SDFRBPx
SKY130_FD_SC_HS__SDFRTN
SKY130_FD_SC_HS__SDFRTPx
SKY130_FD_SC_HS__SDFSBPx
SKY130_FD_SC_HS__SDFSTPx
SKY130_FD_SC_HS__SDFXBPx
SKY130_FD_SC_HS__SDFXTPx
SKY130_FD_SC_HS__SDLCLKPx
SKY130_FD_SC_HS__SEDFXBPx
SKY130_FD_SC_HS__SEDFXTPx

SKY130_FD_SC_HS__XNOR2x
SKY130_FD_SC_HS__XNOR3x
SKY130_FD_SC_HS__XOR2x
SKY130_FD_SC_HS__XOR3x

SKY130_FD_SC_HS__A2111OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	C1	D1	Y
0	x	0	0	0	1
0	x	0	x	1	0
0	x	x	1	x	0
x	x	1	x	x	0
1	0	0	0	0	1
1	0	0	x	1	0
1	0	x	1	x	0
1	1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111oi_1	11.18880
sky130_fd_sc_hs__a2111oi_2	19.18080
sky130_fd_sc_hs__a2111oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__a2111oi_1	0.00247	0.00236	0.00251	0.00264	0.00267	0.03073
sky130_fd_sc_hs__a2111oi_2	0.00466	0.00447	0.00378	0.00381	0.00391	0.06096
sky130_fd_sc_hs__a2111oi_4	0.00928	0.00895	0.00742	0.00727	0.00764	0.11915

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.00005	0.00016
sky130_fd_sc_hs__a2111oi_2	0.00000	0.00010	0.00021
sky130_fd_sc_hs__a2111oi_4	0.00000	0.00020	0.00042

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (FR)	1.60397	4.04573	14.49110
	A2->Y (FR)	1.89909	4.37475	14.87360
	B1->Y (FR)	1.82031	4.23744	14.70980
	C1->Y (FR)	1.66507	4.05072	14.61390
	D1->Y (FR)	1.39578	3.64014	13.66590
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	1.34823	3.52190	14.54400
	A2->Y (FR)	1.70152	3.89451	14.95350
	B1->Y (FR)	1.56586	3.72021	14.76990
	C1->Y (FR)	1.40055	3.51629	14.65830
	D1->Y (FR)	1.02484	3.04702	13.62130
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	1.24065	3.14068	14.46780
	A2->Y (FR)	1.59873	3.52003	14.91980
	B1->Y (FR)	1.46598	3.34974	14.75600
	C1->Y (FR)	1.28628	3.13704	14.62360
	D1->Y (FR)	0.93631	2.69207	13.61760

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.08187	0.71446	3.76187
	A2->Y (RF)	0.08816	0.71468	3.84152
	B1->Y (RF)	0.06780	0.64332	3.49362
	C1->Y (RF)	0.06870	0.63696	3.47414
	D1->Y (RF)	0.06680	0.62484	3.44801
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.07219	0.67796	3.80707
	A2->Y (RF)	0.08192	0.68562	3.87588
	B1->Y (RF)	0.07779	0.73086	4.17393
	C1->Y (RF)	0.07831	0.71867	4.14357
	D1->Y (RF)	0.07375	0.69771	4.10382
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.07119	0.65443	3.85016
	A2->Y (RF)	0.07965	0.65406	3.85572
	B1->Y (RF)	0.07214	0.68658	4.12440
	C1->Y (RF)	0.07324	0.67407	4.09575
	D1->Y (RF)	0.06929	0.65455	4.07770

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00037	0.00030	0.00029
	A1	0.00386	0.00378	0.00377
	A2	0.00059	0.00053	0.00052
	A2	0.00451	0.00445	0.00442
	B1	0.00065	0.00058	0.00057
	B1	0.00417	0.00410	0.00407
	C1	0.00064	0.00057	0.00055
	C1	0.00391	0.00383	0.00381
	D1	0.00061	0.00052	0.00050
	D1	0.00364	0.00354	0.00352
sky130_fd_sc_hs__a2111oi_2	A1	0.00028	0.00016	0.00015
	A1	0.00672	0.00659	0.00657
	A2	0.00101	0.00089	0.00086
	A2	0.00824	0.00811	0.00807
	B1	0.00148	0.00140	0.00138
	B1	0.00741	0.00732	0.00727
	C1	0.00154	0.00145	0.00143
	C1	0.00686	0.00675	0.00673
	D1	0.00150	0.00138	0.00135
	D1	0.00619	0.00607	0.00604

sky130_fd_sc_hs__a2111oi_4	**A1**	0.00006	-0.00016	-0.00017
	A1	0.01298	0.01273	0.01270
	A2	0.00141	0.00117	0.00114
	A2	0.01595	0.01569	0.01562
	B1	0.00244	0.00228	0.00225
	B1	0.01430	0.01413	0.01406
	C1	0.00248	0.00233	0.00230
	C1	0.01308	0.01289	0.01284
	D1	0.00238	0.00216	0.00212
	D1	0.01174	0.01151	0.01147

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.00432	0.00426	0.00408
	A1	0.00101	0.00094	0.00081
	A2	0.00478	0.00472	0.00453
	A2	0.00101	0.00094	0.00081
	B1	0.00409	0.00405	0.00392
	B1	0.00060	0.00056	0.00046
	C1	0.00359	0.00357	0.00348
	C1	0.00033	0.00029	0.00022
	D1	0.00305	0.00304	0.00299
	D1	-0.00000	-0.00003	-0.00007

sky130_fd_sc_hs__a2111oi_2	**A1**	0.00766	0.00751	0.00714
	A1	0.00161	0.00147	0.00118
	A2	0.00851	0.00838	0.00799
	A2	0.00159	0.00145	0.00116
	B1	0.00663	0.00655	0.00630
	B1	0.00081	0.00071	0.00052
	C1	0.00548	0.00542	0.00526
	C1	0.00017	0.00010	-0.00005
	D1	0.00414	0.00411	0.00407
	D1	-0.00063	-0.00068	-0.00072
sky130_fd_sc_hs__a2111oi_4	**A1**	0.01505	0.01476	0.01405
	A1	0.00291	0.00261	0.00209
	A2	0.01680	0.01655	0.01579
	A2	0.00289	0.00260	0.00207
	B1	0.01299	0.01280	0.01233
	B1	0.00132	0.00112	0.00076
	C1	0.01074	0.01060	0.01031
	C1	0.00018	0.00002	-0.00022
	D1	0.00821	0.00813	0.00809
	D1	-0.00130	-0.00143	-0.00146

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A2 * B1 * D1 * !Y)**	0.00076	0.00076	0.00075
	(A2 * B1 * D1 * !Y)	-0.00088	-0.00089	-0.00089
	(A2 * B1 * C1 * !D1 * !Y)	0.00076	0.00076	0.00075
	(A2 * B1 * C1 * !D1 * !Y)	-0.00088	-0.00089	-0.00089
	(A2 * B1 * !C1 * !D1 * !Y)	0.00076	0.00076	0.00075
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00088	-0.00089	-0.00089
	(A2 * !B1 * C1 * D1 * !Y)	0.00076	0.00075	0.00075
	(A2 * !B1 * C1 * D1 * !Y)	-0.00084	-0.00086	-0.00085
	(A2 * !B1 * C1 * !D1 * !Y)	0.00075	0.00075	0.00075
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00084	-0.00086	-0.00085
	(A2 * !B1 * !C1 * D1 * !Y)	0.00075	0.00076	0.00075
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00083	-0.00084	-0.00084
	(!A2 * B1 * D1 * !Y)	0.00070	0.00071	0.00071
	(!A2 * B1 * D1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A2 * B1 * C1 * !D1 * !Y)	0.00070	0.00071	0.00071
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00070	0.00071	0.00071
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A2 * !B1 * C1 * D1 * !Y)	0.00071	0.00071	0.00071
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00093	-0.00093	-0.00092
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00071	0.00071	0.00070
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00093	-0.00093	-0.00092
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00070	0.00071	0.00070
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00107	-0.00108	-0.00109

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00151	0.00151	0.00150
	(A2 * B1 * D1 * !Y)	-0.00176	-0.00179	-0.00177
	(A2 * B1 * C1 * !D1 * !Y)	0.00151	0.00151	0.00150
	(A2 * B1 * C1 * !D1 * !Y)	-0.00176	-0.00179	-0.00177
	(A2 * B1 * !C1 * !D1 * !Y)	0.00151	0.00151	0.00150
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00176	-0.00179	-0.00177
	(A2 * !B1 * C1 * D1 * !Y)	0.00151	0.00151	0.00150
	(A2 * !B1 * C1 * D1 * !Y)	-0.00167	-0.00170	-0.00169
	(A2 * !B1 * C1 * !D1 * !Y)	0.00151	0.00151	0.00150
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00167	-0.00170	-0.00169
	(A2 * !B1 * !C1 * D1 * !Y)	0.00150	0.00151	0.00150
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00164	-0.00168	-0.00167
	(!A2 * B1 * D1 * !Y)	0.00140	0.00142	0.00141
	(!A2 * B1 * D1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * B1 * C1 * !D1 * !Y)	0.00140	0.00142	0.00141
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00140	0.00141	0.00141
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * C1 * D1 * !Y)	0.00141	0.00142	0.00141
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00141	0.00141	0.00141
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00185	-0.00185	-0.00184
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00140	0.00142	0.00141
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00063	0.00064	0.00060
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00212	-0.00214	-0.00218

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00304	0.00304	0.00302
	(A2 * B1 * D1 * !Y)	-0.00352	-0.00357	-0.00354
	(A2 * B1 * C1 * !D1 * !Y)	0.00304	0.00304	0.00302
	(A2 * B1 * C1 * !D1 * !Y)	-0.00352	-0.00357	-0.00354
	(A2 * B1 * !C1 * !D1 * !Y)	0.00304	0.00304	0.00302
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00352	-0.00359	-0.00354
	(A2 * !B1 * C1 * D1 * !Y)	0.00303	0.00303	0.00302
	(A2 * !B1 * C1 * D1 * !Y)	-0.00335	-0.00341	-0.00339
	(A2 * !B1 * C1 * !D1 * !Y)	0.00303	0.00303	0.00302
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00335	-0.00344	-0.00339
	(A2 * !B1 * !C1 * D1 * !Y)	0.00303	0.00302	0.00302
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00330	-0.00337	-0.00334
	(!A2 * B1 * D1 * !Y)	0.00282	0.00285	0.00282
	(!A2 * B1 * D1 * !Y)	-0.00369	-0.00372	-0.00370
	(!A2 * B1 * C1 * !D1 * !Y)	0.00281	0.00284	0.00282
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00369	-0.00372	-0.00370
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00281	0.00283	0.00282
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00370	-0.00372	-0.00370
	(!A2 * !B1 * C1 * D1 * !Y)	0.00281	0.00283	0.00282
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00369	-0.00371	-0.00370
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00280	0.00283	0.00282
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00369	-0.00371	-0.00370
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00281	0.00283	0.00282
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00370	-0.00371	-0.00370
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00122	0.00123	0.00117
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00430	-0.00434	-0.00441

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A2 * B1 * D1 * !Y)**	-0.00076	-0.00076	-0.00075
	(A2 * B1 * D1 * !Y)	0.00089	0.00089	0.00089
	(A2 * B1 * C1 * !D1 * !Y)	-0.00076	-0.00076	-0.00075
	(A2 * B1 * C1 * !D1 * !Y)	0.00089	0.00089	0.00089
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00076	-0.00076	-0.00075
	(A2 * B1 * !C1 * !D1 * !Y)	0.00089	0.00089	0.00089
	(A2 * !B1 * C1 * D1 * !Y)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * C1 * D1 * !Y)	0.00085	0.00086	0.00085
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * C1 * !D1 * !Y)	0.00086	0.00086	0.00085
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * !C1 * D1 * !Y)	0.00084	0.00084	0.00084
	(!A2 * B1 * D1 * !Y)	-0.00069	-0.00071	-0.00071
	(!A2 * B1 * D1 * !Y)	0.00093	0.00094	0.00093
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00070	-0.00071	-0.00071
	(!A2 * B1 * C1 * !D1 * !Y)	0.00093	0.00094	0.00093
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00070	-0.00071	-0.00071
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00093	0.00094	0.00093
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00070	-0.00071	-0.00071
	(!A2 * !B1 * C1 * D1 * !Y)	0.00093	0.00094	0.00093
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00069	-0.00071	-0.00070
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00093	0.00094	0.00093
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00070	-0.00071	-0.00070
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00093	0.00094	0.00093
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00030	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00110	0.00110	0.00109

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00151	-0.00151	-0.00150
	(A2 * B1 * D1 * !Y)	0.00179	0.00179	0.00177
	(A2 * B1 * C1 * !D1 * !Y)	-0.00151	-0.00151	-0.00150
	(A2 * B1 * C1 * !D1 * !Y)	0.00179	0.00179	0.00177
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00150	-0.00151	-0.00150
	(A2 * B1 * !C1 * !D1 * !Y)	0.00177	0.00180	0.00177
	(A2 * !B1 * C1 * D1 * !Y)	-0.00150	-0.00151	-0.00150
	(A2 * !B1 * C1 * D1 * !Y)	0.00170	0.00170	0.00169
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00150	-0.00151	-0.00150
	(A2 * !B1 * C1 * !D1 * !Y)	0.00168	0.00170	0.00169
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00150	-0.00151	-0.00150
	(A2 * !B1 * !C1 * D1 * !Y)	0.00167	0.00168	0.00167
	(!A2 * B1 * D1 * !Y)	-0.00138	-0.00142	-0.00141
	(!A2 * B1 * D1 * !Y)	0.00184	0.00186	0.00185
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00138	-0.00142	-0.00141
	(!A2 * B1 * C1 * !D1 * !Y)	0.00184	0.00187	0.00185
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00138	-0.00141	-0.00141
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00186	0.00186	0.00185
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00138	-0.00142	-0.00141
	(!A2 * !B1 * C1 * D1 * !Y)	0.00184	0.00187	0.00185
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00138	-0.00141	-0.00141
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00186	0.00186	0.00185
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00138	-0.00142	-0.00141
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00186	0.00186	0.00185
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00059	-0.00059	-0.00059
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00217	0.00219	0.00218

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00300	-0.00303	-0.00301
	(A2 * B1 * D1 * !Y)	0.00352	0.00357	0.00354
	(A2 * B1 * C1 * !D1 * !Y)	-0.00300	-0.00303	-0.00301
	(A2 * B1 * C1 * !D1 * !Y)	0.00353	0.00357	0.00354
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00302	-0.00303	-0.00301
	(A2 * B1 * !C1 * !D1 * !Y)	0.00357	0.00359	0.00354
	(A2 * !B1 * C1 * D1 * !Y)	-0.00299	-0.00302	-0.00301
	(A2 * !B1 * C1 * D1 * !Y)	0.00335	0.00341	0.00339
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00301	-0.00303	-0.00301
	(A2 * !B1 * C1 * !D1 * !Y)	0.00339	0.00344	0.00339
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00303	-0.00302	-0.00302
	(A2 * !B1 * !C1 * D1 * !Y)	0.00337	0.00337	0.00334
	(!A2 * B1 * D1 * !Y)	-0.00277	-0.00285	-0.00282
	(!A2 * B1 * D1 * !Y)	0.00371	0.00374	0.00371
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00276	-0.00284	-0.00282
	(!A2 * B1 * C1 * !D1 * !Y)	0.00370	0.00375	0.00371
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00275	-0.00283	-0.00282
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00370	0.00372	0.00371
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00277	-0.00283	-0.00282
	(!A2 * !B1 * C1 * D1 * !Y)	0.00373	0.00371	0.00371
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00275	-0.00283	-0.00282
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00370	0.00372	0.00371
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00274	-0.00283	-0.00282
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00370	0.00372	0.00371
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00114	-0.00114	-0.00114
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00440	0.00443	0.00441

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * B1 * D1 * !Y)**	0.00081	0.00081	0.00080
	(A1 * B1 * D1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * B1 * C1 * !D1 * !Y)	0.00081	0.00081	0.00080
	(A1 * B1 * C1 * !D1 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * B1 * !C1 * !D1 * !Y)	0.00081	0.00081	0.00080
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * !B1 * C1 * D1 * !Y)	0.00080	0.00080	0.00080
	(A1 * !B1 * C1 * D1 * !Y)	-0.00084	-0.00086	-0.00085
	(A1 * !B1 * C1 * !D1 * !Y)	0.00080	0.00080	0.00080
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00084	-0.00086	-0.00085
	(A1 * !B1 * !C1 * D1 * !Y)	0.00080	0.00081	0.00080
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00083	-0.00085	-0.00084
	(!A1 * B1 * !Y)	0.00075	0.00076	0.00075
	(!A1 * B1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !B1 * C1 * !Y)	0.00075	0.00075	0.00075
	(!A1 * !B1 * C1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00075	0.00076	0.00075
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00075	0.00076	0.00075
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00093	-0.00094	-0.00093

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00152	0.00152	0.00151
	(A1 * B1 * D1 * !Y)	-0.00176	-0.00178	-0.00177
	(A1 * B1 * C1 * !D1 * !Y)	0.00152	0.00152	0.00151
	(A1 * B1 * C1 * !D1 * !Y)	-0.00176	-0.00178	-0.00177
	(A1 * B1 * !C1 * !D1 * !Y)	0.00152	0.00152	0.00151
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00176	-0.00178	-0.00177
	(A1 * !B1 * C1 * D1 * !Y)	0.00152	0.00152	0.00151
	(A1 * !B1 * C1 * D1 * !Y)	-0.00167	-0.00170	-0.00169
	(A1 * !B1 * C1 * !D1 * !Y)	0.00152	0.00152	0.00151
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00167	-0.00170	-0.00169
	(A1 * !B1 * !C1 * D1 * !Y)	0.00152	0.00151	0.00151
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00165	-0.00168	-0.00167
	(!A1 * B1 * !Y)	0.00141	0.00143	0.00142
	(!A1 * B1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A1 * !B1 * C1 * !Y)	0.00142	0.00143	0.00142
	(!A1 * !B1 * C1 * !Y)	-0.00184	-0.00184	-0.00183
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00142	0.00143	0.00142
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00184	-0.00184	-0.00183
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00142	0.00142	0.00141
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00306	0.00306	0.00304
	(A1 * B1 * D1 * !Y)	-0.00351	-0.00356	-0.00354
	(A1 * B1 * C1 * !D1 * !Y)	0.00306	0.00306	0.00304
	(A1 * B1 * C1 * !D1 * !Y)	-0.00351	-0.00356	-0.00354
	(A1 * B1 * !C1 * !D1 * !Y)	0.00308	0.00306	0.00304
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00353	-0.00356	-0.00354
	(A1 * !B1 * C1 * D1 * !Y)	0.00305	0.00305	0.00304
	(A1 * !B1 * C1 * D1 * !Y)	-0.00335	-0.00340	-0.00338
	(A1 * !B1 * C1 * !D1 * !Y)	0.00307	0.00305	0.00304
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00336	-0.00340	-0.00338
	(A1 * !B1 * !C1 * D1 * !Y)	0.00305	0.00304	0.00304
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00330	-0.00336	-0.00334
	(!A1 * B1 * !Y)	0.00284	0.00285	0.00283
	(!A1 * B1 * !Y)	-0.00370	-0.00371	-0.00369
	(!A1 * !B1 * C1 * !Y)	0.00283	0.00284	0.00283
	(!A1 * !B1 * C1 * !Y)	-0.00368	-0.00370	-0.00369
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00284	0.00285	0.00283
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00367	-0.00371	-0.00369
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00284	0.00283	0.00282
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00368	-0.00371	-0.00370

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * B1 * D1 * !Y)**	-0.00080	-0.00080	-0.00080
	(A1 * B1 * D1 * !Y)	0.00089	0.00090	0.00089
	(A1 * B1 * C1 * !D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * C1 * !D1 * !Y)	0.00089	0.00090	0.00089
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * !C1 * !D1 * !Y)	0.00089	0.00090	0.00089
	(A1 * !B1 * C1 * D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !B1 * C1 * D1 * !Y)	0.00085	0.00086	0.00085
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !B1 * C1 * !D1 * !Y)	0.00086	0.00086	0.00085
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !B1 * !C1 * D1 * !Y)	0.00085	0.00085	0.00084
	(!A1 * B1 * !Y)	-0.00074	-0.00076	-0.00075
	(!A1 * B1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * !B1 * C1 * !Y)	-0.00074	-0.00075	-0.00075
	(!A1 * !B1 * C1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00074	-0.00076	-0.00075
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00074	-0.00076	-0.00075
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00093	0.00094	0.00094

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00151	-0.00152	-0.00151
	(A1 * B1 * D1 * !Y)	0.00178	0.00178	0.00177
	(A1 * B1 * C1 * !D1 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * B1 * C1 * !D1 * !Y)	0.00178	0.00178	0.00177
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * B1 * !C1 * !D1 * !Y)	0.00178	0.00178	0.00177
	(A1 * !B1 * C1 * D1 * !Y)	-0.00151	-0.00151	-0.00151
	(A1 * !B1 * C1 * D1 * !Y)	0.00169	0.00170	0.00169
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00151	-0.00151	-0.00151
	(A1 * !B1 * C1 * !D1 * !Y)	0.00170	0.00170	0.00169
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00152	-0.00151	-0.00151
	(A1 * !B1 * !C1 * D1 * !Y)	0.00168	0.00168	0.00167
	(!A1 * B1 * !Y)	-0.00140	-0.00143	-0.00142
	(!A1 * B1 * !Y)	0.00185	0.00185	0.00184
	(!A1 * !B1 * C1 * !Y)	-0.00140	-0.00143	-0.00142
	(!A1 * !B1 * C1 * !Y)	0.00185	0.00185	0.00184
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00140	-0.00143	-0.00142
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00185	0.00185	0.00184
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00139	-0.00142	-0.00141
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00185	0.00186	0.00184

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00304	-0.00304	-0.00303
	(A1 * B1 * D1 * !Y)	0.00356	0.00356	0.00354
	(A1 * B1 * C1 * !D1 * !Y)	-0.00304	-0.00304	-0.00303
	(A1 * B1 * C1 * !D1 * !Y)	0.00356	0.00356	0.00354
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00304	-0.00304	-0.00303
	(A1 * B1 * !C1 * !D1 * !Y)	0.00357	0.00356	0.00354
	(A1 * !B1 * C1 * D1 * !Y)	-0.00304	-0.00304	-0.00303
	(A1 * !B1 * C1 * D1 * !Y)	0.00340	0.00340	0.00338
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00303	-0.00304	-0.00303
	(A1 * !B1 * C1 * !D1 * !Y)	0.00338	0.00340	0.00338
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00305	-0.00304	-0.00304
	(A1 * !B1 * !C1 * D1 * !Y)	0.00337	0.00336	0.00334
	(!A1 * B1 * !Y)	-0.00279	-0.00285	-0.00283
	(!A1 * B1 * !Y)	0.00372	0.00373	0.00370
	(!A1 * !B1 * C1 * !Y)	-0.00279	-0.00284	-0.00283
	(!A1 * !B1 * C1 * !Y)	0.00372	0.00373	0.00370
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00276	-0.00285	-0.00283
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00367	0.00373	0.00370
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00276	-0.00283	-0.00282
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00368	0.00374	0.00371

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * A2 * C1 * D1 * !Y)**	0.00078	0.00079	0.00079
	(A1 * A2 * C1 * D1 * !Y)	-0.00072	-0.00073	-0.00073
	(A1 * A2 * C1 * !D1 * !Y)	0.00078	0.00079	0.00079
	(A1 * A2 * C1 * !D1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * !C1 * D1 * !Y)	0.00079	0.00078	0.00078
	(A1 * A2 * !C1 * D1 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !C1 * !D1 * !Y)	0.00078	0.00079	0.00078
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * C1 * D1 * !Y)	0.00078	0.00079	0.00078
	(A1 * !A2 * C1 * D1 * !Y)	-0.00087	-0.00088	-0.00088
	(A1 * !A2 * C1 * !D1 * !Y)	0.00078	0.00079	0.00078
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00087	-0.00088	-0.00088
	(A1 * !A2 * !C1 * D1 * !Y)	0.00078	0.00078	0.00078
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00081	-0.00083	-0.00082
	(!A1 * C1 * D1 * !Y)	0.00078	0.00079	0.00078
	(!A1 * C1 * D1 * !Y)	-0.00087	-0.00088	-0.00088
	(!A1 * C1 * !D1 * !Y)	0.00078	0.00079	0.00078
	(!A1 * C1 * !D1 * !Y)	-0.00087	-0.00088	-0.00088
	(!A1 * !C1 * D1 * !Y)	0.00078	0.00078	0.00078
	(!A1 * !C1 * D1 * !Y)	-0.00081	-0.00083	-0.00082

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00090	0.00091	0.00090
	(A1 * A2 * C1 * D1 * !Y)	-0.00143	-0.00145	-0.00144
	(A1 * A2 * C1 * !D1 * !Y)	0.00089	0.00091	0.00089
	(A1 * A2 * C1 * !D1 * !Y)	-0.00143	-0.00143	-0.00142
	(A1 * A2 * !C1 * D1 * !Y)	0.00090	0.00090	0.00090
	(A1 * A2 * !C1 * D1 * !Y)	-0.00139	-0.00139	-0.00138
	(A1 * A2 * !C1 * !D1 * !Y)	0.00089	0.00090	0.00089
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00132	-0.00133	-0.00132
	(A1 * !A2 * C1 * D1 * !Y)	0.00090	0.00091	0.00089
	(A1 * !A2 * C1 * D1 * !Y)	-0.00174	-0.00176	-0.00174
	(A1 * !A2 * C1 * !D1 * !Y)	0.00090	0.00091	0.00089
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00174	-0.00176	-0.00174
	(A1 * !A2 * !C1 * D1 * !Y)	0.00090	0.00090	0.00090
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00163	-0.00167	-0.00165
	(!A1 * C1 * D1 * !Y)	0.00090	0.00091	0.00089
	(!A1 * C1 * D1 * !Y)	-0.00174	-0.00176	-0.00175
	(!A1 * C1 * !D1 * !Y)	0.00090	0.00091	0.00089
	(!A1 * C1 * !D1 * !Y)	-0.00174	-0.00176	-0.00174
	(!A1 * !C1 * D1 * !Y)	0.00090	0.00090	0.00090
	(!A1 * !C1 * D1 * !Y)	-0.00163	-0.00166	-0.00165

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00174	0.00172	0.00172
	(A1 * A2 * C1 * D1 * !Y)	-0.00297	-0.00297	-0.00296
	(A1 * A2 * C1 * !D1 * !Y)	0.00171	0.00172	0.00171
	(A1 * A2 * C1 * !D1 * !Y)	-0.00293	-0.00293	-0.00291
	(A1 * A2 * !C1 * D1 * !Y)	0.00173	0.00173	0.00173
	(A1 * A2 * !C1 * D1 * !Y)	-0.00283	-0.00283	-0.00282
	(A1 * A2 * !C1 * !D1 * !Y)	0.00174	0.00172	0.00171
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00276	-0.00274	-0.00272
	(A1 * !A2 * C1 * D1 * !Y)	0.00172	0.00174	0.00171
	(A1 * !A2 * C1 * D1 * !Y)	-0.00358	-0.00363	-0.00361
	(A1 * !A2 * C1 * !D1 * !Y)	0.00172	0.00174	0.00171
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00358	-0.00363	-0.00361
	(A1 * !A2 * !C1 * D1 * !Y)	0.00175	0.00173	0.00172
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00340	-0.00341	-0.00339
	(!A1 * C1 * D1 * !Y)	0.00172	0.00174	0.00171
	(!A1 * C1 * D1 * !Y)	-0.00358	-0.00364	-0.00362
	(!A1 * C1 * !D1 * !Y)	0.00172	0.00174	0.00171
	(!A1 * C1 * !D1 * !Y)	-0.00358	-0.00363	-0.00361
	(!A1 * !C1 * D1 * !Y)	0.00175	0.00173	0.00172
	(!A1 * !C1 * D1 * !Y)	-0.00340	-0.00341	-0.00340

Passive power(pJ) for B1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * A2 * C1 * D1 * !Y)**	-0.00078	-0.00078	-0.00078
	(A1 * A2 * C1 * D1 * !Y)	0.00072	0.00073	0.00073
	(A1 * A2 * C1 * !D1 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * C1 * !D1 * !Y)	0.00072	0.00072	0.00072
	(A1 * A2 * !C1 * D1 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * !C1 * D1 * !Y)	0.00069	0.00069	0.00069
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * !C1 * !D1 * !Y)	0.00067	0.00067	0.00067
	(A1 * !A2 * C1 * D1 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * C1 * D1 * !Y)	0.00088	0.00088	0.00088
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * C1 * !D1 * !Y)	0.00088	0.00088	0.00088
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * !C1 * D1 * !Y)	0.00083	0.00083	0.00082
	(!A1 * C1 * D1 * !Y)	-0.00078	-0.00078	-0.00078
	(!A1 * C1 * D1 * !Y)	0.00088	0.00088	0.00088
	(!A1 * C1 * !D1 * !Y)	-0.00078	-0.00078	-0.00078
	(!A1 * C1 * !D1 * !Y)	0.00088	0.00088	0.00088
	(!A1 * !C1 * D1 * !Y)	-0.00078	-0.00078	-0.00078
	(!A1 * !C1 * D1 * !Y)	0.00083	0.00083	0.00082

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00089	-0.00090	-0.00089
	(A1 * A2 * C1 * D1 * !Y)	0.00143	0.00145	0.00144
	(A1 * A2 * C1 * !D1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * C1 * !D1 * !Y)	0.00143	0.00143	0.00142
	(A1 * A2 * !C1 * D1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * !C1 * D1 * !Y)	0.00139	0.00139	0.00138
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00089	-0.00089	-0.00089
	(A1 * A2 * !C1 * !D1 * !Y)	0.00135	0.00135	0.00134
	(A1 * !A2 * C1 * D1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * C1 * D1 * !Y)	0.00175	0.00176	0.00174
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00090	-0.00090	-0.00089
	(A1 * !A2 * C1 * !D1 * !Y)	0.00175	0.00176	0.00174
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !C1 * D1 * !Y)	0.00166	0.00167	0.00165
	(!A1 * C1 * D1 * !Y)	-0.00090	-0.00090	-0.00089
	(!A1 * C1 * D1 * !Y)	0.00175	0.00176	0.00175
	(!A1 * C1 * !D1 * !Y)	-0.00089	-0.00090	-0.00089
	(!A1 * C1 * !D1 * !Y)	0.00174	0.00176	0.00174
	(!A1 * !C1 * D1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !C1 * D1 * !Y)	0.00166	0.00166	0.00165

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00171	-0.00172	-0.00171
	(A1 * A2 * C1 * D1 * !Y)	0.00297	0.00297	0.00296
	(A1 * A2 * C1 * !D1 * !Y)	-0.00171	-0.00172	-0.00171
	(A1 * A2 * C1 * !D1 * !Y)	0.00293	0.00293	0.00291
	(A1 * A2 * !C1 * D1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * A2 * !C1 * D1 * !Y)	0.00283	0.00283	0.00282
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00171	-0.00171	-0.00171
	(A1 * A2 * !C1 * !D1 * !Y)	0.00276	0.00277	0.00277
	(A1 * !A2 * C1 * D1 * !Y)	-0.00171	-0.00172	-0.00171
	(A1 * !A2 * C1 * D1 * !Y)	0.00362	0.00363	0.00361
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00171	-0.00172	-0.00171
	(A1 * !A2 * C1 * !D1 * !Y)	0.00362	0.00363	0.00361
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * !C1 * D1 * !Y)	0.00340	0.00341	0.00339
	(!A1 * C1 * D1 * !Y)	-0.00171	-0.00172	-0.00171
	(!A1 * C1 * D1 * !Y)	0.00362	0.00364	0.00362
	(!A1 * C1 * !D1 * !Y)	-0.00171	-0.00172	-0.00171
	(!A1 * C1 * !D1 * !Y)	0.00363	0.00363	0.00361
	(!A1 * !C1 * D1 * !Y)	-0.00173	-0.00173	-0.00172
	(!A1 * !C1 * D1 * !Y)	0.00341	0.00341	0.00340

Passive power(pJ) for C1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * B1 * D1 * !Y)**	0.00082	0.00083	0.00082
	(A1 * B1 * D1 * !Y)	-0.00066	-0.00066	-0.00065
	(A1 * B1 * !D1 * !Y)	0.00084	0.00083	0.00082
	(A1 * B1 * !D1 * !Y)	-0.00064	-0.00064	-0.00063
	(A1 * A2 * !B1 * D1 * !Y)	0.00083	0.00083	0.00082
	(A1 * A2 * !B1 * D1 * !Y)	-0.00069	-0.00069	-0.00068
	(A1 * A2 * !B1 * !D1 * !Y)	0.00083	0.00083	0.00082
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * !B1 * D1 * !Y)	0.00082	0.00083	0.00082
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00084	-0.00085	-0.00084
	(!A1 * B1 * D1 * !Y)	0.00082	0.00083	0.00082
	(!A1 * B1 * D1 * !Y)	-0.00066	-0.00066	-0.00065
	(!A1 * B1 * !D1 * !Y)	0.00083	0.00083	0.00082
	(!A1 * B1 * !D1 * !Y)	-0.00063	-0.00064	-0.00063
	(!A1 * !B1 * D1 * !Y)	0.00082	0.00083	0.00082
	(!A1 * !B1 * D1 * !Y)	-0.00084	-0.00085	-0.00084

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00086	0.00086	0.00086
	(A1 * B1 * D1 * !Y)	-0.00140	-0.00139	-0.00139
	(A1 * B1 * !D1 * !Y)	0.00086	0.00086	0.00085
	(A1 * B1 * !D1 * !Y)	-0.00137	-0.00136	-0.00136
	(A1 * A2 * !B1 * D1 * !Y)	0.00086	0.00086	0.00085
	(A1 * A2 * !B1 * D1 * !Y)	-0.00145	-0.00145	-0.00144
	(A1 * A2 * !B1 * !D1 * !Y)	0.00085	0.00086	0.00085
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00135	-0.00135	-0.00135
	(A1 * !A2 * !B1 * D1 * !Y)	0.00086	0.00086	0.00085
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A1 * B1 * D1 * !Y)	0.00086	0.00086	0.00086
	(!A1 * B1 * D1 * !Y)	-0.00138	-0.00140	-0.00139
	(!A1 * B1 * !D1 * !Y)	0.00085	0.00086	0.00085
	(!A1 * B1 * !D1 * !Y)	-0.00136	-0.00136	-0.00136
	(!A1 * !B1 * D1 * !Y)	0.00086	0.00086	0.00085
	(!A1 * !B1 * D1 * !Y)	-0.00180	-0.00181	-0.00181

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00165	0.00166	0.00166
	(A1 * B1 * D1 * !Y)	-0.00276	-0.00275	-0.00274
	(A1 * B1 * !D1 * !Y)	0.00167	0.00167	0.00164
	(A1 * B1 * !D1 * !Y)	-0.00268	-0.00267	-0.00267
	(A1 * A2 * !B1 * D1 * !Y)	0.00167	0.00166	0.00165
	(A1 * A2 * !B1 * D1 * !Y)	-0.00284	-0.00284	-0.00282
	(A1 * A2 * !B1 * !D1 * !Y)	0.00169	0.00167	0.00165
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00269	-0.00266	-0.00266
	(A1 * !A2 * !B1 * D1 * !Y)	0.00167	0.00167	0.00164
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00348	-0.00353	-0.00351
	(!A1 * B1 * D1 * !Y)	0.00165	0.00166	0.00166
	(!A1 * B1 * D1 * !Y)	-0.00274	-0.00276	-0.00274
	(!A1 * B1 * !D1 * !Y)	0.00166	0.00167	0.00164
	(!A1 * B1 * !D1 * !Y)	-0.00266	-0.00267	-0.00267
	(!A1 * !B1 * D1 * !Y)	0.00167	0.00167	0.00164
	(!A1 * !B1 * D1 * !Y)	-0.00348	-0.00353	-0.00351

Passive power(pJ) for C1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * B1 * D1 * !Y)**	-0.00082	-0.00082	-0.00082
	(A1 * B1 * D1 * !Y)	0.00066	0.00066	0.00065
	(A1 * B1 * !D1 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * B1 * !D1 * !Y)	0.00064	0.00065	0.00064
	(A1 * A2 * !B1 * D1 * !Y)	-0.00082	-0.00083	-0.00082
	(A1 * A2 * !B1 * D1 * !Y)	0.00069	0.00069	0.00068
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00075	-0.00077	-0.00081
	(A1 * A2 * !B1 * !D1 * !Y)	0.00069	0.00068	0.00065
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * !B1 * D1 * !Y)	0.00085	0.00085	0.00084
	(!A1 * B1 * D1 * !Y)	-0.00082	-0.00082	-0.00082
	(!A1 * B1 * D1 * !Y)	0.00066	0.00066	0.00065
	(!A1 * B1 * !D1 * !Y)	-0.00082	-0.00082	-0.00082
	(!A1 * B1 * !D1 * !Y)	0.00064	0.00065	0.00065
	(!A1 * !B1 * D1 * !Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !B1 * D1 * !Y)	0.00085	0.00085	0.00084

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00086	-0.00085	-0.00085
	(A1 * B1 * D1 * !Y)	0.00140	0.00139	0.00139
	(A1 * B1 * !D1 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * B1 * !D1 * !Y)	0.00138	0.00137	0.00137
	(A1 * A2 * !B1 * D1 * !Y)	-0.00086	-0.00086	-0.00085
	(A1 * A2 * !B1 * D1 * !Y)	0.00145	0.00145	0.00144
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00074	-0.00075	-0.00080
	(A1 * A2 * !B1 * !D1 * !Y)	0.00142	0.00142	0.00140
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00086	-0.00086	-0.00085
	(A1 * !A2 * !B1 * D1 * !Y)	0.00181	0.00181	0.00181
	(!A1 * B1 * D1 * !Y)	-0.00084	-0.00085	-0.00085
	(!A1 * B1 * D1 * !Y)	0.00138	0.00140	0.00139
	(!A1 * B1 * !D1 * !Y)	-0.00085	-0.00085	-0.00085
	(!A1 * B1 * !D1 * !Y)	0.00137	0.00138	0.00138
	(!A1 * !B1 * D1 * !Y)	-0.00086	-0.00086	-0.00085
	(!A1 * !B1 * D1 * !Y)	0.00182	0.00181	0.00181

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00165	-0.00165	-0.00164
	(A1 * B1 * D1 * !Y)	0.00276	0.00275	0.00274
	(A1 * B1 * !D1 * !Y)	-0.00163	-0.00164	-0.00164
	(A1 * B1 * !D1 * !Y)	0.00271	0.00272	0.00271
	(A1 * A2 * !B1 * D1 * !Y)	-0.00166	-0.00166	-0.00165
	(A1 * A2 * !B1 * D1 * !Y)	0.00284	0.00284	0.00282
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00148	-0.00150	-0.00156
	(A1 * A2 * !B1 * !D1 * !Y)	0.00276	0.00276	0.00272
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00166	-0.00166	-0.00164
	(A1 * !A2 * !B1 * D1 * !Y)	0.00352	0.00353	0.00351
	(!A1 * B1 * D1 * !Y)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * D1 * !Y)	0.00274	0.00276	0.00274
	(!A1 * B1 * !D1 * !Y)	-0.00163	-0.00164	-0.00164
	(!A1 * B1 * !D1 * !Y)	0.00272	0.00272	0.00271
	(!A1 * !B1 * D1 * !Y)	-0.00166	-0.00166	-0.00164
	(!A1 * !B1 * D1 * !Y)	0.00353	0.00353	0.00351

Passive power(pJ) for D1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00094	0.00093	0.00093
	(A1 * C1 * !Y)	-0.00059	-0.00058	-0.00058
	(A1 * B1 * !C1 * !Y)	0.00095	0.00093	0.00093
	(A1 * B1 * !C1 * !Y)	-0.00059	-0.00058	-0.00058
	(A1 * A2 * !B1 * !C1 * !Y)	0.00093	0.00093	0.00093
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00058	-0.00058	-0.00058
	(!A1 * C1 * !Y)	0.00094	0.00093	0.00093
	(!A1 * C1 * !Y)	-0.00059	-0.00058	-0.00058
	(!A1 * B1 * !C1 * !Y)	0.00093	0.00093	0.00093
	(!A1 * B1 * !C1 * !Y)	-0.00058	-0.00058	-0.00058

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00108	0.00107	0.00107
	(A1 * C1 * !Y)	-0.00119	-0.00118	-0.00118
	(A1 * B1 * !C1 * !Y)	0.00107	0.00107	0.00107
	(A1 * B1 * !C1 * !Y)	-0.00117	-0.00118	-0.00118
	(A1 * A2 * !B1 * !C1 * !Y)	0.00107	0.00107	0.00107
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00118	-0.00118	-0.00118
	(!A1 * C1 * !Y)	0.00107	0.00107	0.00107
	(!A1 * C1 * !Y)	-0.00118	-0.00118	-0.00118
	(!A1 * B1 * !C1 * !Y)	0.00107	0.00107	0.00107
	(!A1 * B1 * !C1 * !Y)	-0.00118	-0.00118	-0.00118
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00214	0.00213	0.00212
	(A1 * C1 * !Y)	-0.00235	-0.00233	-0.00232
	(A1 * B1 * !C1 * !Y)	0.00211	0.00213	0.00212
	(A1 * B1 * !C1 * !Y)	-0.00232	-0.00233	-0.00232
	(A1 * A2 * !B1 * !C1 * !Y)	0.00212	0.00213	0.00212
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00233	-0.00233	-0.00232
	(!A1 * C1 * !Y)	0.00216	0.00213	0.00212
	(!A1 * C1 * !Y)	-0.00237	-0.00233	-0.00232
	(!A1 * B1 * !C1 * !Y)	0.00213	0.00213	0.00212
	(!A1 * B1 * !C1 * !Y)	-0.00233	-0.00233	-0.00232

Passive power(pJ) for D1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00093	-0.00092	-0.00093
	(A1 * C1 * !Y)	0.00060	0.00059	0.00058
	(A1 * B1 * !C1 * !Y)	-0.00084	-0.00085	-0.00092
	(A1 * B1 * !C1 * !Y)	0.00064	0.00064	0.00059
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00072	-0.00073	-0.00088
	(A1 * A2 * !B1 * !C1 * !Y)	0.00073	0.00072	0.00062
	(!A1 * C1 * !Y)	-0.00092	-0.00092	-0.00093
	(!A1 * C1 * !Y)	0.00059	0.00059	0.00058
	(!A1 * B1 * !C1 * !Y)	-0.00084	-0.00085	-0.00092
	(!A1 * B1 * !C1 * !Y)	0.00064	0.00064	0.00059
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00103	-0.00104	-0.00107
	(A1 * C1 * !Y)	0.00123	0.00122	0.00119
	(A1 * B1 * !C1 * !Y)	-0.00085	-0.00087	-0.00104
	(A1 * B1 * !C1 * !Y)	0.00132	0.00133	0.00120
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00061	-0.00063	-0.00097
	(A1 * A2 * !B1 * !C1 * !Y)	0.00150	0.00149	0.00126
	(!A1 * C1 * !Y)	-0.00103	-0.00104	-0.00107
	(!A1 * C1 * !Y)	0.00122	0.00122	0.00119
	(!A1 * B1 * !C1 * !Y)	-0.00086	-0.00087	-0.00104
	(!A1 * B1 * !C1 * !Y)	0.00134	0.00133	0.00120
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00207	-0.00208	-0.00212
	(A1 * C1 * !Y)	0.00240	0.00238	0.00233
	(A1 * B1 * !C1 * !Y)	-0.00171	-0.00174	-0.00206
	(A1 * B1 * !C1 * !Y)	0.00262	0.00261	0.00237
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00125	-0.00129	-0.00192
	(A1 * A2 * !B1 * !C1 * !Y)	0.00292	0.00290	0.00247
	(!A1 * C1 * !Y)	-0.00206	-0.00208	-0.00212
	(!A1 * C1 * !Y)	0.00239	0.00239	0.00234
	(!A1 * B1 * !C1 * !Y)	-0.00171	-0.00174	-0.00206
	(!A1 * B1 * !C1 * !Y)	0.00263	0.00262	0.00238

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	C1	D1	X
0	x	0	0	0	0
0	x	0	x	1	1
0	x	x	1	x	1
x	x	1	x	x	1
1	0	0	0	0	0
1	0	0	x	1	1
1	0	x	1	x	1
1	1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111o_1	14.38560
sky130_fd_sc_hs__a2111o_2	15.98400
sky130_fd_sc_hs__a2111o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__a2111o_1	0.00228	0.00238	0.00230	0.00235	0.00235	0.18823
sky130_fd_sc_hs__a2111o_2	0.00253	0.00262	0.00250	0.00259	0.00275	0.37361
sky130_fd_sc_hs__a2111o_4	0.00423	0.00413	0.00437	0.00442	0.00443	0.73023

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	0.00009	0.00020
sky130_fd_sc_hs__a2111o_2	0.00000	0.00012	0.00024
sky130_fd_sc_hs__a2111o_4	0.00000	0.00025	0.00048

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (RR)	0.29613	1.71119	9.84353
	A2->X (RR)	0.30408	1.71995	10.03370
	B1->X (RR)	0.24761	1.64335	9.76874
	C1->X (RR)	0.24449	1.63300	9.72401
	D1->X (RR)	0.23788	1.61750	9.67199
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.28173	1.53797	9.99907
	A2->X (RR)	0.28924	1.53446	10.13280
	B1->X (RR)	0.22291	1.45713	9.88521
	C1->X (RR)	0.21906	1.44602	9.84461
	D1->X (RR)	0.21519	1.43540	9.80611
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.29803	1.42226	10.08470
	A2->X (RR)	0.30843	1.42379	10.26100
	B1->X (RR)	0.22253	1.32188	9.96483
	C1->X (RR)	0.21930	1.31068	9.94003
	D1->X (RR)	0.21304	1.29630	9.87421

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	2.28750	3.50199	9.70042
	A2->X (FF)	2.53279	3.76074	9.97921
	B1->X (FF)	2.41028	3.58820	9.80232
	C1->X (FF)	2.26614	3.41094	9.70670
	D1->X (FF)	2.02946	3.06142	8.88164
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	2.99221	4.28798	10.79460
	A2->X (FF)	3.25048	4.56986	11.08250
	B1->X (FF)	3.13612	4.39751	10.88290
	C1->X (FF)	2.96787	4.19086	10.76350
	D1->X (FF)	2.72850	3.84686	9.94864
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	2.82617	4.04224	10.50580
	A2->X (FF)	3.16409	4.40555	10.87070
	B1->X (FF)	3.08390	4.26757	10.73790
	C1->X (FF)	2.92708	4.06890	10.62530
	D1->X (FF)	2.55461	3.58693	9.62162

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.00584	0.00583	0.00576
	A1	0.00270	0.00269	0.00264
	A2	0.00615	0.00615	0.00608
	A2	0.00270	0.00270	0.00265
	B1	0.00546	0.00544	0.00537
	B1	0.00231	0.00229	0.00222
	C1	0.00496	0.00494	0.00486
	C1	0.00203	0.00202	0.00194
	D1	0.00440	0.00436	0.00427
	D1	0.00170	0.00165	0.00157
sky130_fd_sc_hs__a2111o_2	A1	0.00753	0.00758	0.00756
	A1	0.00406	0.00412	0.00411
	A2	0.00797	0.00804	0.00803
	A2	0.00409	0.00416	0.00416
	B1	0.00715	0.00720	0.00716
	B1	0.00363	0.00367	0.00364
	C1	0.00656	0.00662	0.00655
	C1	0.00325	0.00331	0.00325
	D1	0.00608	0.00611	0.00604
	D1	0.00296	0.00299	0.00292

sky130_fd_sc_hs__a2111o_4	**A1**	0.01403	0.01414	0.01416
	A1	0.00806	0.00817	0.00820
	A2	0.01485	0.01500	0.01509
	A2	0.00805	0.00820	0.00832
	B1	0.01365	0.01374	0.01371
	B1	0.00729	0.00745	0.00737
	C1	0.01253	0.01262	0.01258
	C1	0.00666	0.00677	0.00721
	D1	0.01114	0.01122	0.01112
	D1	0.00583	0.00592	0.00583

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00217	0.00219	0.00221
	A1	0.00542	0.00543	0.00545
	A2	0.00247	0.00250	0.00226
	A2	0.00599	0.00602	0.00603
	B1	0.00241	0.00244	0.00215
	B1	0.00556	0.00560	0.00561
	C1	0.00240	0.00243	0.00213
	C1	0.00532	0.00535	0.00535
	D1	0.00246	0.00246	0.00246
	D1	0.00512	0.00513	0.00511

sky130_fd_sc_hs__a2111o_2	**A1**	0.00359	0.00368	0.00378
	A1	0.00719	0.00728	0.00739
	A2	0.00380	0.00392	0.00403
	A2	0.00779	0.00790	0.00800
	B1	0.00383	0.00394	0.00404
	B1	0.00737	0.00747	0.00757
	C1	0.00383	0.00394	0.00403
	C1	0.00712	0.00722	0.00731
	D1	0.00379	0.00386	0.00393
	D1	0.00686	0.00694	0.00699
sky130_fd_sc_hs__a2111o_4	**A1**	0.00674	0.00696	0.00689
	A1	0.01300	0.01321	0.01350
	A2	0.00727	0.00753	0.00782
	A2	0.01427	0.01451	0.01478
	B1	0.00725	0.00749	0.00776
	B1	0.01364	0.01388	0.01413
	C1	0.00729	0.00753	0.00775
	C1	0.01314	0.01335	0.01359
	D1	0.00728	0.00750	0.00558
	D1	0.01250	0.01271	0.01286

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A2 * B1 * D1 * X)**	0.00079	0.00078	0.00078
	(A2 * B1 * D1 * X)	-0.00080	-0.00081	-0.00080
	(A2 * B1 * C1 * !D1 * X)	0.00079	0.00078	0.00078
	(A2 * B1 * C1 * !D1 * X)	-0.00080	-0.00081	-0.00080
	(A2 * B1 * !C1 * !D1 * X)	0.00079	0.00078	0.00078
	(A2 * B1 * !C1 * !D1 * X)	-0.00079	-0.00081	-0.00080
	(A2 * !B1 * C1 * D1 * X)	0.00078	0.00078	0.00078
	(A2 * !B1 * C1 * D1 * X)	-0.00076	-0.00077	-0.00077
	(A2 * !B1 * C1 * !D1 * X)	0.00078	0.00078	0.00078
	(A2 * !B1 * C1 * !D1 * X)	-0.00076	-0.00077	-0.00077
	(A2 * !B1 * !C1 * D1 * X)	0.00078	0.00078	0.00078
	(A2 * !B1 * !C1 * D1 * X)	-0.00075	-0.00076	-0.00076
	(!A2 * B1 * D1 * X)	0.00073	0.00074	0.00073
	(!A2 * B1 * D1 * X)	-0.00083	-0.00084	-0.00083
	(!A2 * B1 * C1 * !D1 * X)	0.00073	0.00074	0.00073
	(!A2 * B1 * C1 * !D1 * X)	-0.00083	-0.00084	-0.00083
	(!A2 * B1 * !C1 * !D1 * X)	0.00073	0.00074	0.00073
	(!A2 * B1 * !C1 * !D1 * X)	-0.00083	-0.00084	-0.00083
	(!A2 * !B1 * C1 * D1 * X)	0.00073	0.00074	0.00073
	(!A2 * !B1 * C1 * D1 * X)	-0.00083	-0.00084	-0.00083
	(!A2 * !B1 * C1 * !D1 * X)	0.00073	0.00074	0.00073
	(!A2 * !B1 * C1 * !D1 * X)	-0.00083	-0.00084	-0.00083
	(!A2 * !B1 * !C1 * D1 * X)	0.00074	0.00074	0.00073
	(!A2 * !B1 * !C1 * D1 * X)	-0.00083	-0.00084	-0.00083
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00038	0.00037	0.00037
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00098	-0.00098	-0.00099

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00080	0.00080	0.00080
	(A2 * B1 * D1 * X)	-0.00090	-0.00091	-0.00090
	(A2 * B1 * C1 * !D1 * X)	0.00080	0.00080	0.00080
	(A2 * B1 * C1 * !D1 * X)	-0.00090	-0.00091	-0.00090
	(A2 * B1 * !C1 * !D1 * X)	0.00080	0.00080	0.00080
	(A2 * B1 * !C1 * !D1 * X)	-0.00090	-0.00091	-0.00090
	(A2 * !B1 * C1 * D1 * X)	0.00080	0.00080	0.00080
	(A2 * !B1 * C1 * D1 * X)	-0.00086	-0.00087	-0.00087
	(A2 * !B1 * C1 * !D1 * X)	0.00080	0.00080	0.00080
	(A2 * !B1 * C1 * !D1 * X)	-0.00086	-0.00087	-0.00087
	(A2 * !B1 * !C1 * D1 * X)	0.00079	0.00080	0.00080
	(A2 * !B1 * !C1 * D1 * X)	-0.00084	-0.00086	-0.00085
	(!A2 * B1 * D1 * X)	0.00074	0.00075	0.00074
	(!A2 * B1 * D1 * X)	-0.00094	-0.00094	-0.00094
	(!A2 * B1 * C1 * !D1 * X)	0.00074	0.00075	0.00074
	(!A2 * B1 * C1 * !D1 * X)	-0.00094	-0.00094	-0.00094
	(!A2 * B1 * !C1 * !D1 * X)	0.00074	0.00075	0.00074
	(!A2 * B1 * !C1 * !D1 * X)	-0.00094	-0.00095	-0.00094
	(!A2 * !B1 * C1 * D1 * X)	0.00074	0.00075	0.00074
	(!A2 * !B1 * C1 * D1 * X)	-0.00094	-0.00094	-0.00094
	(!A2 * !B1 * C1 * !D1 * X)	0.00074	0.00075	0.00074
	(!A2 * !B1 * C1 * !D1 * X)	-0.00094	-0.00094	-0.00094
	(!A2 * !B1 * !C1 * D1 * X)	0.00074	0.00075	0.00074
	(!A2 * !B1 * !C1 * D1 * X)	-0.00094	-0.00094	-0.00094
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00032	0.00033	0.00032
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00111	-0.00112	-0.00112

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00132	0.00132	0.00131
	(A2 * B1 * D1 * X)	-0.00162	-0.00165	-0.00163
	(A2 * B1 * C1 * !D1 * X)	0.00132	0.00132	0.00131
	(A2 * B1 * C1 * !D1 * X)	-0.00162	-0.00165	-0.00163
	(A2 * B1 * !C1 * !D1 * X)	0.00132	0.00132	0.00131
	(A2 * B1 * !C1 * !D1 * X)	-0.00162	-0.00165	-0.00163
	(A2 * !B1 * C1 * D1 * X)	0.00131	0.00131	0.00131
	(A2 * !B1 * C1 * D1 * X)	-0.00154	-0.00157	-0.00156
	(A2 * !B1 * C1 * !D1 * X)	0.00131	0.00131	0.00131
	(A2 * !B1 * C1 * !D1 * X)	-0.00154	-0.00157	-0.00156
	(A2 * !B1 * !C1 * D1 * X)	0.00131	0.00131	0.00131
	(A2 * !B1 * !C1 * D1 * X)	-0.00152	-0.00155	-0.00154
	(!A2 * B1 * D1 * X)	0.00124	0.00124	0.00123
	(!A2 * B1 * D1 * X)	-0.00171	-0.00171	-0.00170
	(!A2 * B1 * C1 * !D1 * X)	0.00123	0.00124	0.00123
	(!A2 * B1 * C1 * !D1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * B1 * !C1 * !D1 * X)	0.00123	0.00124	0.00123
	(!A2 * B1 * !C1 * !D1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * !B1 * C1 * D1 * X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * C1 * D1 * X)	-0.00170	-0.00170	-0.00170
	(!A2 * !B1 * C1 * !D1 * X)	0.00123	0.00123	0.00123
	(!A2 * !B1 * C1 * !D1 * X)	-0.00170	-0.00170	-0.00170
	(!A2 * !B1 * !C1 * D1 * X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * !C1 * D1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00056	0.00057	0.00054
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00195	-0.00197	-0.00200

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A2 * B1 * D1 * X)**	-0.00078	-0.00078	-0.00078
	(A2 * B1 * D1 * X)	0.00081	0.00081	0.00080
	(A2 * B1 * C1 * !D1 * X)	-0.00078	-0.00078	-0.00078
	(A2 * B1 * C1 * !D1 * X)	0.00081	0.00081	0.00080
	(A2 * B1 * !C1 * !D1 * X)	-0.00077	-0.00078	-0.00078
	(A2 * B1 * !C1 * !D1 * X)	0.00079	0.00081	0.00080
	(A2 * !B1 * C1 * D1 * X)	-0.00078	-0.00078	-0.00078
	(A2 * !B1 * C1 * D1 * X)	0.00077	0.00077	0.00077
	(A2 * !B1 * C1 * !D1 * X)	-0.00078	-0.00078	-0.00078
	(A2 * !B1 * C1 * !D1 * X)	0.00078	0.00077	0.00077
	(A2 * !B1 * !C1 * D1 * X)	-0.00078	-0.00078	-0.00078
	(A2 * !B1 * !C1 * D1 * X)	0.00077	0.00076	0.00076
	(!A2 * B1 * D1 * X)	-0.00072	-0.00074	-0.00073
	(!A2 * B1 * D1 * X)	0.00083	0.00084	0.00083
	(!A2 * B1 * C1 * !D1 * X)	-0.00072	-0.00074	-0.00073
	(!A2 * B1 * C1 * !D1 * X)	0.00083	0.00084	0.00083
	(!A2 * B1 * !C1 * !D1 * X)	-0.00073	-0.00074	-0.00073
	(!A2 * B1 * !C1 * !D1 * X)	0.00084	0.00084	0.00083
	(!A2 * !B1 * C1 * D1 * X)	-0.00072	-0.00074	-0.00073
	(!A2 * !B1 * C1 * D1 * X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * C1 * !D1 * X)	-0.00073	-0.00074	-0.00073
	(!A2 * !B1 * C1 * !D1 * X)	0.00084	0.00084	0.00083
	(!A2 * !B1 * !C1 * D1 * X)	-0.00073	-0.00074	-0.00073
	(!A2 * !B1 * !C1 * D1 * X)	0.00084	0.00084	0.00083
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00099	0.00101	0.00099

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00080	-0.00080	-0.00079
	(A2 * B1 * D1 * X)	0.00091	0.00091	0.00090
	(A2 * B1 * C1 * !D1 * X)	-0.00080	-0.00080	-0.00079
	(A2 * B1 * C1 * !D1 * X)	0.00091	0.00091	0.00090
	(A2 * B1 * !C1 * !D1 * X)	-0.00080	-0.00080	-0.00079
	(A2 * B1 * !C1 * !D1 * X)	0.00091	0.00091	0.00090
	(A2 * !B1 * C1 * D1 * X)	-0.00080	-0.00080	-0.00079
	(A2 * !B1 * C1 * D1 * X)	0.00087	0.00087	0.00087
	(A2 * !B1 * C1 * !D1 * X)	-0.00080	-0.00080	-0.00079
	(A2 * !B1 * C1 * !D1 * X)	0.00087	0.00087	0.00087
	(A2 * !B1 * !C1 * D1 * X)	-0.00079	-0.00080	-0.00079
	(A2 * !B1 * !C1 * D1 * X)	0.00086	0.00086	0.00085
	(!A2 * B1 * D1 * X)	-0.00073	-0.00075	-0.00074
	(!A2 * B1 * D1 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * C1 * !D1 * X)	-0.00073	-0.00075	-0.00074
	(!A2 * B1 * C1 * !D1 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * !C1 * !D1 * X)	-0.00073	-0.00075	-0.00074
	(!A2 * B1 * !C1 * !D1 * X)	0.00095	0.00095	0.00094
	(!A2 * !B1 * C1 * D1 * X)	-0.00073	-0.00075	-0.00074
	(!A2 * !B1 * C1 * D1 * X)	0.00095	0.00095	0.00094
	(!A2 * !B1 * C1 * !D1 * X)	-0.00073	-0.00075	-0.00074
	(!A2 * !B1 * C1 * !D1 * X)	0.00095	0.00095	0.00094
	(!A2 * !B1 * !C1 * D1 * X)	-0.00073	-0.00075	-0.00074
	(!A2 * !B1 * !C1 * D1 * X)	0.00095	0.00095	0.00094
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00113	0.00113	0.00112

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00131	-0.00131	-0.00131
	(A2 * B1 * D1 * X)	0.00164	0.00165	0.00163
	(A2 * B1 * C1 * !D1 * X)	-0.00131	-0.00131	-0.00131
	(A2 * B1 * C1 * !D1 * X)	0.00165	0.00165	0.00163
	(A2 * B1 * !C1 * !D1 * X)	-0.00131	-0.00131	-0.00131
	(A2 * B1 * !C1 * !D1 * X)	0.00165	0.00165	0.00163
	(A2 * !B1 * C1 * D1 * X)	-0.00131	-0.00131	-0.00131
	(A2 * !B1 * C1 * D1 * X)	0.00157	0.00157	0.00156
	(A2 * !B1 * C1 * !D1 * X)	-0.00131	-0.00131	-0.00131
	(A2 * !B1 * C1 * !D1 * X)	0.00157	0.00157	0.00156
	(A2 * !B1 * !C1 * D1 * X)	-0.00131	-0.00131	-0.00131
	(A2 * !B1 * !C1 * D1 * X)	0.00156	0.00155	0.00154
	(!A2 * B1 * D1 * X)	-0.00122	-0.00124	-0.00123
	(!A2 * B1 * D1 * X)	0.00171	0.00172	0.00170
	(!A2 * B1 * C1 * !D1 * X)	-0.00122	-0.00124	-0.00123
	(!A2 * B1 * C1 * !D1 * X)	0.00171	0.00172	0.00170
	(!A2 * B1 * !C1 * !D1 * X)	-0.00121	-0.00124	-0.00123
	(!A2 * B1 * !C1 * !D1 * X)	0.00170	0.00172	0.00170
	(!A2 * !B1 * C1 * D1 * X)	-0.00122	-0.00124	-0.00123
	(!A2 * !B1 * C1 * D1 * X)	0.00171	0.00172	0.00170
	(!A2 * !B1 * C1 * !D1 * X)	-0.00121	-0.00123	-0.00123
	(!A2 * !B1 * C1 * !D1 * X)	0.00170	0.00172	0.00170
	(!A2 * !B1 * !C1 * D1 * X)	-0.00121	-0.00124	-0.00123
	(!A2 * !B1 * !C1 * D1 * X)	0.00170	0.00172	0.00170
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00052	-0.00052	-0.00052
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00200	0.00201	0.00200

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * B1 * D1 * X)**	0.00071	0.00071	0.00071
	(A1 * B1 * D1 * X)	-0.00083	-0.00084	-0.00084
	(A1 * B1 * C1 * !D1 * X)	0.00071	0.00071	0.00071
	(A1 * B1 * C1 * !D1 * X)	-0.00083	-0.00084	-0.00084
	(A1 * B1 * !C1 * !D1 * X)	0.00071	0.00071	0.00071
	(A1 * B1 * !C1 * !D1 * X)	-0.00083	-0.00084	-0.00084
	(A1 * !B1 * C1 * D1 * X)	0.00071	0.00071	0.00071
	(A1 * !B1 * C1 * D1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * !B1 * C1 * !D1 * X)	0.00071	0.00071	0.00071
	(A1 * !B1 * C1 * !D1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * !B1 * !C1 * D1 * X)	0.00071	0.00071	0.00070
	(A1 * !B1 * !C1 * D1 * X)	-0.00078	-0.00079	-0.00079
	(!A1 * B1 * X)	0.00066	0.00067	0.00066
	(!A1 * B1 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * !B1 * C1 * X)	0.00066	0.00067	0.00066
	(!A1 * !B1 * C1 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * !B1 * !C1 * D1 * X)	0.00066	0.00067	0.00066
	(!A1 * !B1 * !C1 * D1 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00057	0.00057	0.00057
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00096	-0.00097	-0.00096

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00080	0.00081	0.00080
	(A1 * B1 * D1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * B1 * C1 * !D1 * X)	0.00080	0.00081	0.00080
	(A1 * B1 * C1 * !D1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * B1 * !C1 * !D1 * X)	0.00080	0.00080	0.00080
	(A1 * B1 * !C1 * !D1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * !B1 * C1 * D1 * X)	0.00080	0.00080	0.00080
	(A1 * !B1 * C1 * D1 * X)	-0.00085	-0.00087	-0.00086
	(A1 * !B1 * C1 * !D1 * X)	0.00080	0.00080	0.00080
	(A1 * !B1 * C1 * !D1 * X)	-0.00085	-0.00087	-0.00086
	(A1 * !B1 * !C1 * D1 * X)	0.00080	0.00081	0.00080
	(A1 * !B1 * !C1 * D1 * X)	-0.00084	-0.00086	-0.00085
	(!A1 * B1 * X)	0.00075	0.00076	0.00075
	(!A1 * B1 * X)	-0.00094	-0.00095	-0.00094
	(!A1 * !B1 * C1 * X)	0.00075	0.00075	0.00075
	(!A1 * !B1 * C1 * X)	-0.00094	-0.00094	-0.00094
	(!A1 * !B1 * !C1 * D1 * X)	0.00075	0.00076	0.00075
	(!A1 * !B1 * !C1 * D1 * X)	-0.00094	-0.00095	-0.00094
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00069	0.00069	0.00069
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00101	-0.00101	-0.00101

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00136	0.00136	0.00135
	(A1 * B1 * D1 * X)	-0.00163	-0.00166	-0.00165
	(A1 * B1 * C1 * !D1 * X)	0.00136	0.00136	0.00135
	(A1 * B1 * C1 * !D1 * X)	-0.00163	-0.00166	-0.00164
	(A1 * B1 * !C1 * !D1 * X)	0.00136	0.00136	0.00135
	(A1 * B1 * !C1 * !D1 * X)	-0.00163	-0.00166	-0.00164
	(A1 * !B1 * C1 * D1 * X)	0.00135	0.00135	0.00135
	(A1 * !B1 * C1 * D1 * X)	-0.00155	-0.00158	-0.00157
	(A1 * !B1 * C1 * !D1 * X)	0.00135	0.00135	0.00135
	(A1 * !B1 * C1 * !D1 * X)	-0.00155	-0.00158	-0.00157
	(A1 * !B1 * !C1 * D1 * X)	0.00135	0.00135	0.00135
	(A1 * !B1 * !C1 * D1 * X)	-0.00153	-0.00156	-0.00155
	(!A1 * B1 * X)	0.00127	0.00127	0.00126
	(!A1 * B1 * X)	-0.00171	-0.00172	-0.00171
	(!A1 * !B1 * C1 * X)	0.00127	0.00127	0.00126
	(!A1 * !B1 * C1 * X)	-0.00171	-0.00172	-0.00171
	(!A1 * !B1 * !C1 * D1 * X)	0.00127	0.00127	0.00126
	(!A1 * !B1 * !C1 * D1 * X)	-0.00171	-0.00172	-0.00171
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00126	0.00127	0.00126
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00172	-0.00172	-0.00172

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * B1 * D1 * X)**	-0.00071	-0.00071	-0.00070
	(A1 * B1 * D1 * X)	0.00084	0.00084	0.00084
	(A1 * B1 * C1 * !D1 * X)	-0.00071	-0.00071	-0.00070
	(A1 * B1 * C1 * !D1 * X)	0.00084	0.00084	0.00084
	(A1 * B1 * !C1 * !D1 * X)	-0.00071	-0.00071	-0.00070
	(A1 * B1 * !C1 * !D1 * X)	0.00084	0.00084	0.00084
	(A1 * !B1 * C1 * D1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * !B1 * C1 * D1 * X)	0.00080	0.00080	0.00080
	(A1 * !B1 * C1 * !D1 * X)	-0.00071	-0.00071	-0.00070
	(A1 * !B1 * C1 * !D1 * X)	0.00080	0.00080	0.00080
	(A1 * !B1 * !C1 * D1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * !B1 * !C1 * D1 * X)	0.00079	0.00079	0.00079
	(!A1 * B1 * X)	-0.00065	-0.00067	-0.00066
	(!A1 * B1 * X)	0.00087	0.00088	0.00087
	(!A1 * !B1 * C1 * X)	-0.00065	-0.00067	-0.00066
	(!A1 * !B1 * C1 * X)	0.00087	0.00088	0.00087
	(!A1 * !B1 * !C1 * D1 * X)	-0.00065	-0.00067	-0.00066
	(!A1 * !B1 * !C1 * D1 * X)	0.00087	0.00088	0.00087
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00056	-0.00057	-0.00057
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00096	0.00098	0.00096

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00080	-0.00080	-0.00080
	(A1 * B1 * D1 * X)	0.00091	0.00091	0.00090
	(A1 * B1 * C1 * !D1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * C1 * !D1 * X)	0.00091	0.00091	0.00090
	(A1 * B1 * !C1 * !D1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * !C1 * !D1 * X)	0.00091	0.00091	0.00090
	(A1 * !B1 * C1 * D1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * !B1 * C1 * D1 * X)	0.00087	0.00087	0.00086
	(A1 * !B1 * C1 * !D1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * !B1 * C1 * !D1 * X)	0.00087	0.00087	0.00086
	(A1 * !B1 * !C1 * D1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * !B1 * !C1 * D1 * X)	0.00085	0.00086	0.00085
	(!A1 * B1 * X)	-0.00074	-0.00076	-0.00075
	(!A1 * B1 * X)	0.00095	0.00095	0.00095
	(!A1 * !B1 * C1 * X)	-0.00074	-0.00075	-0.00075
	(!A1 * !B1 * C1 * X)	0.00095	0.00095	0.00095
	(!A1 * !B1 * !C1 * D1 * X)	-0.00074	-0.00076	-0.00075
	(!A1 * !B1 * !C1 * D1 * X)	0.00095	0.00095	0.00095
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00068	-0.00069	-0.00069
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00101	0.00102	0.00101

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00135	-0.00135	-0.00135
	(A1 * B1 * D1 * X)	0.00165	0.00166	0.00165
	(A1 * B1 * C1 * !D1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * C1 * !D1 * X)	0.00165	0.00166	0.00164
	(A1 * B1 * !C1 * !D1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * !C1 * !D1 * X)	0.00165	0.00166	0.00164
	(A1 * !B1 * C1 * D1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * !B1 * C1 * D1 * X)	0.00157	0.00158	0.00157
	(A1 * !B1 * C1 * !D1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * !B1 * C1 * !D1 * X)	0.00157	0.00158	0.00157
	(A1 * !B1 * !C1 * D1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * !B1 * !C1 * D1 * X)	0.00156	0.00156	0.00155
	(!A1 * B1 * X)	-0.00125	-0.00127	-0.00126
	(!A1 * B1 * X)	0.00173	0.00173	0.00172
	(!A1 * !B1 * C1 * X)	-0.00124	-0.00127	-0.00126
	(!A1 * !B1 * C1 * X)	0.00172	0.00173	0.00172
	(!A1 * !B1 * !C1 * D1 * X)	-0.00124	-0.00127	-0.00126
	(!A1 * !B1 * !C1 * D1 * X)	0.00172	0.00173	0.00172
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00124	-0.00127	-0.00126
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00173	0.00173	0.00172

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * A2 * C1 * D1 * X)**	0.00072	0.00073	0.00072
	(A1 * A2 * C1 * D1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * C1 * !D1 * X)	0.00072	0.00073	0.00072
	(A1 * A2 * C1 * !D1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !C1 * D1 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * !C1 * D1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !C1 * !D1 * X)	0.00072	0.00073	0.00072
	(A1 * A2 * !C1 * !D1 * X)	-0.00059	-0.00060	-0.00059
	(A1 * !A2 * C1 * D1 * X)	0.00072	0.00072	0.00072
	(A1 * !A2 * C1 * D1 * X)	-0.00078	-0.00078	-0.00079
	(A1 * !A2 * C1 * !D1 * X)	0.00072	0.00072	0.00072
	(A1 * !A2 * C1 * !D1 * X)	-0.00078	-0.00078	-0.00079
	(A1 * !A2 * !C1 * D1 * X)	0.00072	0.00072	0.00072
	(A1 * !A2 * !C1 * D1 * X)	-0.00073	-0.00075	-0.00074
	(!A1 * C1 * D1 * X)	0.00072	0.00072	0.00072
	(!A1 * C1 * D1 * X)	-0.00078	-0.00078	-0.00079
	(!A1 * C1 * !D1 * X)	0.00072	0.00072	0.00072
	(!A1 * C1 * !D1 * X)	-0.00078	-0.00078	-0.00079
	(!A1 * !C1 * D1 * X)	0.00072	0.00072	0.00072
	(!A1 * !C1 * D1 * X)	-0.00073	-0.00075	-0.00074

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00077	0.00077	0.00077
	(A1 * A2 * C1 * D1 * X)	-0.00072	-0.00073	-0.00073
	(A1 * A2 * C1 * !D1 * X)	0.00077	0.00078	0.00077
	(A1 * A2 * C1 * !D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * !C1 * D1 * X)	0.00077	0.00077	0.00077
	(A1 * A2 * !C1 * D1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !C1 * !D1 * X)	0.00077	0.00077	0.00077
	(A1 * A2 * !C1 * !D1 * X)	-0.00067	-0.00066	-0.00066
	(A1 * !A2 * C1 * D1 * X)	0.00077	0.00078	0.00077
	(A1 * !A2 * C1 * D1 * X)	-0.00087	-0.00088	-0.00088
	(A1 * !A2 * C1 * !D1 * X)	0.00077	0.00078	0.00077
	(A1 * !A2 * C1 * !D1 * X)	-0.00087	-0.00088	-0.00088
	(A1 * !A2 * !C1 * D1 * X)	0.00077	0.00077	0.00077
	(A1 * !A2 * !C1 * D1 * X)	-0.00081	-0.00083	-0.00082
	(!A1 * C1 * D1 * X)	0.00077	0.00078	0.00077
	(!A1 * C1 * D1 * X)	-0.00087	-0.00088	-0.00088
	(!A1 * C1 * !D1 * X)	0.00077	0.00078	0.00077
	(!A1 * C1 * !D1 * X)	-0.00087	-0.00088	-0.00088
	(!A1 * !C1 * D1 * X)	0.00077	0.00077	0.00077
	(!A1 * !C1 * D1 * X)	-0.00081	-0.00083	-0.00082

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00141	0.00143	0.00141
	(A1 * A2 * C1 * D1 * X)	-0.00135	-0.00135	-0.00134
	(A1 * A2 * C1 * !D1 * X)	0.00141	0.00143	0.00141
	(A1 * A2 * C1 * !D1 * X)	-0.00133	-0.00133	-0.00132
	(A1 * A2 * !C1 * D1 * X)	0.00142	0.00142	0.00142
	(A1 * A2 * !C1 * D1 * X)	-0.00129	-0.00129	-0.00128
	(A1 * A2 * !C1 * !D1 * X)	0.00143	0.00142	0.00141
	(A1 * A2 * !C1 * !D1 * X)	-0.00125	-0.00124	-0.00123
	(A1 * !A2 * C1 * D1 * X)	0.00143	0.00143	0.00141
	(A1 * !A2 * C1 * D1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A2 * C1 * !D1 * X)	0.00143	0.00143	0.00141
	(A1 * !A2 * C1 * !D1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A2 * !C1 * D1 * X)	0.00143	0.00142	0.00141
	(A1 * !A2 * !C1 * D1 * X)	-0.00153	-0.00154	-0.00153
	(!A1 * C1 * D1 * X)	0.00143	0.00143	0.00141
	(!A1 * C1 * D1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * C1 * !D1 * X)	0.00143	0.00143	0.00141
	(!A1 * C1 * !D1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * !C1 * D1 * X)	0.00143	0.00142	0.00141
	(!A1 * !C1 * D1 * X)	-0.00153	-0.00154	-0.00153

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * A2 * C1 * D1 * X)**	-0.00072	-0.00072	-0.00072
	(A1 * A2 * C1 * D1 * X)	0.00065	0.00065	0.00065
	(A1 * A2 * C1 * !D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * C1 * !D1 * X)	0.00064	0.00065	0.00064
	(A1 * A2 * !C1 * D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * !C1 * D1 * X)	0.00062	0.00062	0.00062
	(A1 * A2 * !C1 * !D1 * X)	-0.00072	-0.00072	-0.00071
	(A1 * A2 * !C1 * !D1 * X)	0.00061	0.00061	0.00061
	(A1 * !A2 * C1 * D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * C1 * D1 * X)	0.00079	0.00078	0.00079
	(A1 * !A2 * C1 * !D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * C1 * !D1 * X)	0.00079	0.00078	0.00079
	(A1 * !A2 * !C1 * D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * !C1 * D1 * X)	0.00074	0.00075	0.00074
	(!A1 * C1 * D1 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * C1 * D1 * X)	0.00079	0.00078	0.00079
	(!A1 * C1 * !D1 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * C1 * !D1 * X)	0.00079	0.00078	0.00079
	(!A1 * !C1 * D1 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * !C1 * D1 * X)	0.00074	0.00075	0.00074

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00076	-0.00077	-0.00077
	(A1 * A2 * C1 * D1 * X)	0.00072	0.00073	0.00073
	(A1 * A2 * C1 * !D1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * C1 * !D1 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * !C1 * D1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * !C1 * D1 * X)	0.00069	0.00069	0.00069
	(A1 * A2 * !C1 * !D1 * X)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * !C1 * !D1 * X)	0.00067	0.00067	0.00067
	(A1 * !A2 * C1 * D1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * C1 * D1 * X)	0.00088	0.00088	0.00088
	(A1 * !A2 * C1 * !D1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * C1 * !D1 * X)	0.00088	0.00088	0.00088
	(A1 * !A2 * !C1 * D1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !C1 * D1 * X)	0.00083	0.00083	0.00082
	(!A1 * C1 * D1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * C1 * D1 * X)	0.00088	0.00088	0.00088
	(!A1 * C1 * !D1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * C1 * !D1 * X)	0.00088	0.00088	0.00088
	(!A1 * !C1 * D1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * !C1 * D1 * X)	0.00083	0.00083	0.00082

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00141	-0.00141	-0.00141
	(A1 * A2 * C1 * D1 * X)	0.00135	0.00135	0.00134
	(A1 * A2 * C1 * !D1 * X)	-0.00141	-0.00141	-0.00141
	(A1 * A2 * C1 * !D1 * X)	0.00133	0.00133	0.00132
	(A1 * A2 * !C1 * D1 * X)	-0.00141	-0.00142	-0.00141
	(A1 * A2 * !C1 * D1 * X)	0.00129	0.00129	0.00128
	(A1 * A2 * !C1 * !D1 * X)	-0.00140	-0.00141	-0.00140
	(A1 * A2 * !C1 * !D1 * X)	0.00125	0.00126	0.00125
	(A1 * !A2 * C1 * D1 * X)	-0.00141	-0.00141	-0.00141
	(A1 * !A2 * C1 * D1 * X)	0.00162	0.00162	0.00161
	(A1 * !A2 * C1 * !D1 * X)	-0.00141	-0.00141	-0.00141
	(A1 * !A2 * C1 * !D1 * X)	0.00162	0.00162	0.00161
	(A1 * !A2 * !C1 * D1 * X)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * !C1 * D1 * X)	0.00154	0.00154	0.00153
	(!A1 * C1 * D1 * X)	-0.00141	-0.00141	-0.00141
	(!A1 * C1 * D1 * X)	0.00162	0.00162	0.00161
	(!A1 * C1 * !D1 * X)	-0.00141	-0.00141	-0.00141
	(!A1 * C1 * !D1 * X)	0.00162	0.00162	0.00161
	(!A1 * !C1 * D1 * X)	-0.00141	-0.00142	-0.00141
	(!A1 * !C1 * D1 * X)	0.00154	0.00154	0.00153

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * B1 * D1 * X)**	0.00073	0.00073	0.00072
	(A1 * B1 * D1 * X)	-0.00060	-0.00060	-0.00060
	(A1 * B1 * !D1 * X)	0.00073	0.00073	0.00072
	(A1 * B1 * !D1 * X)	-0.00058	-0.00059	-0.00058
	(A1 * A2 * !B1 * D1 * X)	0.00073	0.00073	0.00073
	(A1 * A2 * !B1 * D1 * X)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * !B1 * !D1 * X)	0.00073	0.00074	0.00072
	(A1 * A2 * !B1 * !D1 * X)	-0.00058	-0.00059	-0.00058
	(A1 * !A2 * !B1 * D1 * X)	0.00072	0.00073	0.00072
	(A1 * !A2 * !B1 * D1 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * B1 * D1 * X)	0.00073	0.00073	0.00072
	(!A1 * B1 * D1 * X)	-0.00060	-0.00060	-0.00060
	(!A1 * B1 * !D1 * X)	0.00073	0.00073	0.00072
	(!A1 * B1 * !D1 * X)	-0.00058	-0.00059	-0.00058
	(!A1 * !B1 * D1 * X)	0.00072	0.00073	0.00072
	(!A1 * !B1 * D1 * X)	-0.00077	-0.00078	-0.00077

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00077	0.00077	0.00076
	(A1 * B1 * D1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * B1 * !D1 * X)	0.00077	0.00077	0.00076
	(A1 * B1 * !D1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !B1 * D1 * X)	0.00076	0.00077	0.00076
	(A1 * A2 * !B1 * D1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * A2 * !B1 * !D1 * X)	0.00077	0.00077	0.00076
	(A1 * A2 * !B1 * !D1 * X)	-0.00069	-0.00068	-0.00068
	(A1 * !A2 * !B1 * D1 * X)	0.00076	0.00077	0.00076
	(A1 * !A2 * !B1 * D1 * X)	-0.00090	-0.00091	-0.00091
	(!A1 * B1 * D1 * X)	0.00076	0.00077	0.00076
	(!A1 * B1 * D1 * X)	-0.00072	-0.00072	-0.00071
	(!A1 * B1 * !D1 * X)	0.00077	0.00077	0.00076
	(!A1 * B1 * !D1 * X)	-0.00070	-0.00070	-0.00069
	(!A1 * !B1 * D1 * X)	0.00076	0.00077	0.00076
	(!A1 * !B1 * D1 * X)	-0.00090	-0.00091	-0.00091

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00138	0.00139	0.00138
	(A1 * B1 * D1 * X)	-0.00130	-0.00130	-0.00129
	(A1 * B1 * !D1 * X)	0.00139	0.00138	0.00137
	(A1 * B1 * !D1 * X)	-0.00128	-0.00127	-0.00126
	(A1 * A2 * !B1 * D1 * X)	0.00139	0.00139	0.00138
	(A1 * A2 * !B1 * D1 * X)	-0.00135	-0.00135	-0.00134
	(A1 * A2 * !B1 * !D1 * X)	0.00140	0.00138	0.00137
	(A1 * A2 * !B1 * !D1 * X)	-0.00128	-0.00126	-0.00126
	(A1 * !A2 * !B1 * D1 * X)	0.00139	0.00138	0.00137
	(A1 * !A2 * !B1 * D1 * X)	-0.00166	-0.00168	-0.00167
	(!A1 * B1 * D1 * X)	0.00139	0.00139	0.00138
	(!A1 * B1 * D1 * X)	-0.00131	-0.00130	-0.00129
	(!A1 * B1 * !D1 * X)	0.00140	0.00138	0.00137
	(!A1 * B1 * !D1 * X)	-0.00127	-0.00127	-0.00127
	(!A1 * !B1 * D1 * X)	0.00139	0.00138	0.00137
	(!A1 * !B1 * D1 * X)	-0.00166	-0.00168	-0.00167

Passive power(pJ) for C1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * B1 * D1 * X)**	-0.00072	-0.00073	-0.00072
	(A1 * B1 * D1 * X)	0.00060	0.00060	0.00060
	(A1 * B1 * !D1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * B1 * !D1 * X)	0.00059	0.00059	0.00059
	(A1 * A2 * !B1 * D1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * !B1 * D1 * X)	0.00063	0.00064	0.00063
	(A1 * A2 * !B1 * !D1 * X)	-0.00067	-0.00068	-0.00071
	(A1 * A2 * !B1 * !D1 * X)	0.00062	0.00062	0.00059
	(A1 * !A2 * !B1 * D1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * !A2 * !B1 * D1 * X)	0.00077	0.00078	0.00077
	(!A1 * B1 * D1 * X)	-0.00072	-0.00073	-0.00072
	(!A1 * B1 * D1 * X)	0.00060	0.00060	0.00060
	(!A1 * B1 * !D1 * X)	-0.00072	-0.00073	-0.00072
	(!A1 * B1 * !D1 * X)	0.00059	0.00059	0.00059
	(!A1 * !B1 * D1 * X)	-0.00072	-0.00073	-0.00072
	(!A1 * !B1 * D1 * X)	0.00077	0.00078	0.00077

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00076	-0.00076	-0.00076
	(A1 * B1 * D1 * X)	0.00071	0.00071	0.00071
	(A1 * B1 * !D1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * B1 * !D1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !B1 * D1 * X)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * !B1 * D1 * X)	0.00073	0.00074	0.00073
	(A1 * A2 * !B1 * !D1 * X)	-0.00069	-0.00071	-0.00075
	(A1 * A2 * !B1 * !D1 * X)	0.00072	0.00073	0.00069
	(A1 * !A2 * !B1 * D1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * !B1 * D1 * X)	0.00091	0.00091	0.00091
	(!A1 * B1 * D1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * B1 * D1 * X)	0.00072	0.00072	0.00071
	(!A1 * B1 * !D1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * B1 * !D1 * X)	0.00071	0.00071	0.00070
	(!A1 * !B1 * D1 * X)	-0.00076	-0.00076	-0.00076
	(!A1 * !B1 * D1 * X)	0.00091	0.00091	0.00091

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00138	-0.00138	-0.00137
	(A1 * B1 * D1 * X)	0.00130	0.00130	0.00129
	(A1 * B1 * !D1 * X)	-0.00138	-0.00138	-0.00137
	(A1 * B1 * !D1 * X)	0.00129	0.00128	0.00128
	(A1 * A2 * !B1 * D1 * X)	-0.00138	-0.00138	-0.00138
	(A1 * A2 * !B1 * D1 * X)	0.00135	0.00135	0.00134
	(A1 * A2 * !B1 * !D1 * X)	-0.00128	-0.00130	-0.00133
	(A1 * A2 * !B1 * !D1 * X)	0.00131	0.00131	0.00130
	(A1 * !A2 * !B1 * D1 * X)	-0.00138	-0.00138	-0.00137
	(A1 * !A2 * !B1 * D1 * X)	0.00168	0.00168	0.00167
	(!A1 * B1 * D1 * X)	-0.00138	-0.00138	-0.00137
	(!A1 * B1 * D1 * X)	0.00131	0.00130	0.00129
	(!A1 * B1 * !D1 * X)	-0.00136	-0.00137	-0.00137
	(!A1 * B1 * !D1 * X)	0.00127	0.00128	0.00128
	(!A1 * !B1 * D1 * X)	-0.00138	-0.00138	-0.00137
	(!A1 * !B1 * D1 * X)	0.00168	0.00168	0.00167

Passive power(pJ) for D1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00079	0.00079	0.00079
	(A1 * C1 * X)	-0.00055	-0.00055	-0.00054
	(A1 * B1 * !C1 * X)	0.00079	0.00079	0.00079
	(A1 * B1 * !C1 * X)	-0.00055	-0.00055	-0.00054
	(A1 * A2 * !B1 * !C1 * X)	0.00080	0.00079	0.00079
	(A1 * A2 * !B1 * !C1 * X)	-0.00055	-0.00055	-0.00054
	(!A1 * C1 * X)	0.00079	0.00079	0.00079
	(!A1 * C1 * X)	-0.00055	-0.00055	-0.00054
	(!A1 * B1 * !C1 * X)	0.00080	0.00079	0.00079
	(!A1 * B1 * !C1 * X)	-0.00055	-0.00055	-0.00054

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00096	0.00096	0.00096
	(A1 * C1 * X)	-0.00060	-0.00060	-0.00059
	(A1 * B1 * !C1 * X)	0.00096	0.00096	0.00096
	(A1 * B1 * !C1 * X)	-0.00060	-0.00060	-0.00059
	(A1 * A2 * !B1 * !C1 * X)	0.00097	0.00096	0.00096
	(A1 * A2 * !B1 * !C1 * X)	-0.00061	-0.00060	-0.00059
	(!A1 * C1 * X)	0.00096	0.00096	0.00096
	(!A1 * C1 * X)	-0.00060	-0.00060	-0.00059
	(!A1 * B1 * !C1 * X)	0.00095	0.00096	0.00096
	(!A1 * B1 * !C1 * X)	-0.00059	-0.00060	-0.00059
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00155	0.00154	0.00153
	(A1 * C1 * X)	-0.00112	-0.00111	-0.00111
	(A1 * B1 * !C1 * X)	0.00153	0.00154	0.00153
	(A1 * B1 * !C1 * X)	-0.00111	-0.00111	-0.00110
	(A1 * A2 * !B1 * !C1 * X)	0.00153	0.00154	0.00153
	(A1 * A2 * !B1 * !C1 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * C1 * X)	0.00153	0.00154	0.00153
	(!A1 * C1 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * B1 * !C1 * X)	0.00153	0.00154	0.00153
	(!A1 * B1 * !C1 * X)	-0.00111	-0.00111	-0.00111

Passive power(pJ) for D1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00078	-0.00078	-0.00079
	(A1 * C1 * X)	0.00056	0.00056	0.00055
	(A1 * B1 * !C1 * X)	-0.00072	-0.00072	-0.00078
	(A1 * B1 * !C1 * X)	0.00060	0.00060	0.00055
	(A1 * A2 * !B1 * !C1 * X)	-0.00060	-0.00062	-0.00074
	(A1 * A2 * !B1 * !C1 * X)	0.00067	0.00067	0.00058
	(!A1 * C1 * X)	-0.00078	-0.00078	-0.00079
	(!A1 * C1 * X)	0.00056	0.00056	0.00055
	(!A1 * B1 * !C1 * X)	-0.00071	-0.00072	-0.00078
	(!A1 * B1 * !C1 * X)	0.00060	0.00060	0.00055
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00094	-0.00095	-0.00096
	(A1 * C1 * X)	0.00060	0.00061	0.00060
	(A1 * B1 * !C1 * X)	-0.00087	-0.00088	-0.00094
	(A1 * B1 * !C1 * X)	0.00066	0.00066	0.00060
	(A1 * A2 * !B1 * !C1 * X)	-0.00074	-0.00075	-0.00091
	(A1 * A2 * !B1 * !C1 * X)	0.00074	0.00074	0.00063
	(!A1 * C1 * X)	-0.00095	-0.00095	-0.00096
	(!A1 * C1 * X)	0.00060	0.00061	0.00060
	(!A1 * B1 * !C1 * X)	-0.00087	-0.00088	-0.00094
	(!A1 * B1 * !C1 * X)	0.00066	0.00066	0.00060
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00148	-0.00150	-0.00153
	(A1 * C1 * X)	0.00114	0.00115	0.00112
	(A1 * B1 * !C1 * X)	-0.00133	-0.00135	-0.00150
	(A1 * B1 * !C1 * X)	0.00124	0.00124	0.00113
	(A1 * A2 * !B1 * !C1 * X)	-0.00111	-0.00113	-0.00143
	(A1 * A2 * !B1 * !C1 * X)	0.00139	0.00139	0.00118
	(!A1 * C1 * X)	-0.00149	-0.00150	-0.00153
	(!A1 * C1 * X)	0.00115	0.00115	0.00112
	(!A1 * B1 * !C1 * X)	-0.00133	-0.00135	-0.00150
	(!A1 * B1 * !C1 * X)	0.00125	0.00125	0.00113

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	C1	Y
0	x	0	0	1
0	x	x	1	0
x	x	1	x	0
1	0	0	0	1
1	0	x	1	0
1	1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211oi_1	9.59040
sky130_fd_sc_hs__a211oi_2	15.98400
sky130_fd_sc_hs__a211oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__a211oi_1	0.00253	0.00236	0.00255	0.00264	0.04459
sky130_fd_sc_hs__a211oi_2	0.00463	0.00477	0.00389	0.00375	0.08872
sky130_fd_sc_hs__a211oi_4	0.00930	0.00911	0.00738	0.00764	0.17092

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.00006	0.00012
sky130_fd_sc_hs__a211oi_2	0.00000	0.00010	0.00018
sky130_fd_sc_hs__a211oi_4	0.00000	0.00020	0.00036

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (FR)	1.00899	3.32295	14.22930
	A2->Y (FR)	1.19919	3.54236	14.50910
	B1->Y (FR)	1.11433	3.40557	14.47890
	C1->Y (FR)	0.94385	3.13114	13.68240
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.82719	2.88027	14.31490
	A2->Y (FR)	1.08547	3.14273	14.58750
	B1->Y (FR)	0.97201	2.98970	14.54340
	C1->Y (FR)	0.72078	2.64787	13.68220
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.76206	2.55730	14.18960
	A2->Y (FR)	1.01384	2.82977	14.54430
	B1->Y (FR)	0.88287	2.65647	14.48300
	C1->Y (FR)	0.66909	2.34745	13.65990

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.07975	0.73831	4.10646
	A2->Y (RF)	0.08529	0.73525	4.14341
	B1->Y (RF)	0.06639	0.65712	3.77968
	C1->Y (RF)	0.06455	0.64765	3.76227
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.07139	0.69975	4.17678
	A2->Y (RF)	0.08214	0.71020	4.20992
	B1->Y (RF)	0.07722	0.74749	4.55216
	C1->Y (RF)	0.07029	0.72128	4.48799
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.06980	0.67184	4.21940
	A2->Y (RF)	0.07842	0.67047	4.16951
	B1->Y (RF)	0.07407	0.71018	4.57406
	C1->Y (RF)	0.06937	0.68865	4.54047

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00034	0.00027	0.00026
	A1	0.00336	0.00328	0.00328
	A2	0.00054	0.00049	0.00048
	A2	0.00396	0.00390	0.00389
	B1	0.00057	0.00051	0.00049
	B1	0.00364	0.00357	0.00355
	C1	0.00049	0.00041	0.00040
	C1	0.00334	0.00326	0.00324
sky130_fd_sc_hs__a211oi_2	A1	0.00007	-0.00004	-0.00005
	A1	0.00578	0.00567	0.00566
	A2	0.00086	0.00073	0.00071
	A2	0.00748	0.00734	0.00731
	B1	0.00136	0.00127	0.00125
	B1	0.00655	0.00645	0.00643
	C1	0.00130	0.00121	0.00119
	C1	0.00581	0.00572	0.00571
sky130_fd_sc_hs__a211oi_4	A1	-0.00014	-0.00032	-0.00033
	A1	0.01116	0.01093	0.01095
	A2	0.00118	0.00096	0.00092
	A2	0.01423	0.01396	0.01394
	B1	0.00227	0.00210	0.00207
	B1	0.01240	0.01224	0.01219
	C1	0.00221	0.00199	0.00196
	C1	0.01112	0.01090	0.01087

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00360	0.00354	0.00342
	A1	0.00070	0.00063	0.00054
	A2	0.00402	0.00397	0.00384
	A2	0.00069	0.00063	0.00053
	B1	0.00329	0.00326	0.00319
	B1	0.00023	0.00018	0.00013
	C1	0.00277	0.00277	0.00273
	C1	-0.00010	-0.00013	-0.00016
sky130_fd_sc_hs__a211oi_2	A1	0.00647	0.00634	0.00612
	A1	0.00099	0.00085	0.00068
	A2	0.00744	0.00733	0.00707
	A2	0.00098	0.00084	0.00065
	B1	0.00547	0.00538	0.00525
	B1	0.00028	0.00018	0.00006
	C1	0.00399	0.00397	0.00395
	C1	-0.00060	-0.00064	-0.00067
sky130_fd_sc_hs__a211oi_4	A1	0.01268	0.01241	0.01195
	A1	0.00191	0.00160	0.00125
	A2	0.01458	0.01434	0.01385
	A2	0.00187	0.00161	0.00123
	B1	0.01030	0.01012	0.00991
	B1	0.00016	-0.00005	-0.00024
	C1	0.00764	0.00756	0.00756
	C1	-0.00143	-0.00155	-0.00154

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a211oi_1	**(A2 * B1 * C1 * !Y)**	0.00076	0.00076	0.00076
	(A2 * B1 * C1 * !Y)	-0.00088	-0.00089	-0.00089
	(A2 * B1 * !C1 * !Y)	0.00076	0.00076	0.00076
	(A2 * B1 * !C1 * !Y)	-0.00088	-0.00089	-0.00089
	(A2 * !B1 * C1 * !Y)	0.00076	0.00076	0.00076
	(A2 * !B1 * C1 * !Y)	-0.00084	-0.00085	-0.00085
	(!A2 * B1 * C1 * !Y)	0.00070	0.00071	0.00071
	(!A2 * B1 * C1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A2 * B1 * !C1 * !Y)	0.00070	0.00071	0.00070
	(!A2 * B1 * !C1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A2 * !B1 * C1 * !Y)	0.00070	0.00071	0.00070
	(!A2 * !B1 * C1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A2 * !B1 * !C1 * Y)	0.00029	0.00029	0.00029
	(!A2 * !B1 * !C1 * Y)	-0.00109	-0.00109	-0.00110
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00156	0.00156	0.00155
	(A2 * B1 * C1 * !Y)	-0.00173	-0.00175	-0.00174
	(A2 * B1 * !C1 * !Y)	0.00156	0.00156	0.00155
	(A2 * B1 * !C1 * !Y)	-0.00173	-0.00176	-0.00174
	(A2 * !B1 * C1 * !Y)	0.00156	0.00156	0.00155
	(A2 * !B1 * C1 * !Y)	-0.00165	-0.00168	-0.00167
	(!A2 * B1 * C1 * !Y)	0.00145	0.00146	0.00145
	(!A2 * B1 * C1 * !Y)	-0.00181	-0.00181	-0.00181
	(!A2 * B1 * !C1 * !Y)	0.00145	0.00146	0.00145
	(!A2 * B1 * !C1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * C1 * !Y)	0.00145	0.00146	0.00145
	(!A2 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * !C1 * Y)	0.00069	0.00069	0.00066
	(!A2 * !B1 * !C1 * Y)	-0.00208	-0.00210	-0.00214

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00302	0.00302	0.00300
	(A2 * B1 * C1 * !Y)	-0.00351	-0.00357	-0.00354
	(A2 * B1 * !C1 * !Y)	0.00302	0.00302	0.00300
	(A2 * B1 * !C1 * !Y)	-0.00351	-0.00358	-0.00354
	(A2 * !B1 * C1 * !Y)	0.00302	0.00302	0.00301
	(A2 * !B1 * C1 * !Y)	-0.00335	-0.00341	-0.00338
	(!A2 * B1 * C1 * !Y)	0.00279	0.00282	0.00280
	(!A2 * B1 * C1 * !Y)	-0.00368	-0.00368	-0.00369
	(!A2 * B1 * !C1 * !Y)	0.00280	0.00282	0.00280
	(!A2 * B1 * !C1 * !Y)	-0.00369	-0.00371	-0.00369
	(!A2 * !B1 * C1 * !Y)	0.00280	0.00281	0.00280
	(!A2 * !B1 * C1 * !Y)	-0.00369	-0.00370	-0.00369
	(!A2 * !B1 * !C1 * Y)	0.00122	0.00122	0.00116
	(!A2 * !B1 * !C1 * Y)	-0.00429	-0.00432	-0.00439

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a211oi_1	**(A2 * B1 * C1 * !Y)**	-0.00076	-0.00076	-0.00076
	(A2 * B1 * C1 * !Y)	0.00089	0.00089	0.00089
	(A2 * B1 * !C1 * !Y)	-0.00076	-0.00076	-0.00076
	(A2 * B1 * !C1 * !Y)	0.00089	0.00089	0.00089
	(A2 * !B1 * C1 * !Y)	-0.00076	-0.00076	-0.00076
	(A2 * !B1 * C1 * !Y)	0.00085	0.00085	0.00085
	(!A2 * B1 * C1 * !Y)	-0.00069	-0.00071	-0.00071
	(!A2 * B1 * C1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * B1 * !C1 * !Y)	-0.00069	-0.00071	-0.00070
	(!A2 * B1 * !C1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * C1 * !Y)	-0.00069	-0.00071	-0.00070
	(!A2 * !B1 * C1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * !C1 * Y)	-0.00028	-0.00028	-0.00028
	(!A2 * !B1 * !C1 * Y)	0.00111	0.00110	0.00110
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00154	-0.00155	-0.00155
	(A2 * B1 * C1 * !Y)	0.00173	0.00175	0.00174
	(A2 * B1 * !C1 * !Y)	-0.00155	-0.00155	-0.00155
	(A2 * B1 * !C1 * !Y)	0.00174	0.00176	0.00174
	(A2 * !B1 * C1 * !Y)	-0.00155	-0.00156	-0.00155
	(A2 * !B1 * C1 * !Y)	0.00167	0.00168	0.00167
	(!A2 * B1 * C1 * !Y)	-0.00143	-0.00146	-0.00145
	(!A2 * B1 * C1 * !Y)	0.00181	0.00183	0.00181
	(!A2 * B1 * !C1 * !Y)	-0.00143	-0.00146	-0.00145
	(!A2 * B1 * !C1 * !Y)	0.00183	0.00183	0.00181
	(!A2 * !B1 * C1 * !Y)	-0.00143	-0.00146	-0.00145
	(!A2 * !B1 * C1 * !Y)	0.00183	0.00182	0.00181
	(!A2 * !B1 * !C1 * Y)	-0.00064	-0.00064	-0.00064
	(!A2 * !B1 * !C1 * Y)	0.00214	0.00215	0.00214

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	-0.00299	-0.00301	-0.00300
	(A2 * B1 * C1 * !Y)	0.00352	0.00357	0.00354
	(A2 * B1 * !C1 * !Y)	-0.00299	-0.00302	-0.00300
	(A2 * B1 * !C1 * !Y)	0.00354	0.00358	0.00354
	(A2 * !B1 * C1 * !Y)	-0.00300	-0.00302	-0.00300
	(A2 * !B1 * C1 * !Y)	0.00339	0.00341	0.00338
	(!A2 * B1 * C1 * !Y)	-0.00274	-0.00282	-0.00280
	(!A2 * B1 * C1 * !Y)	0.00368	0.00368	0.00370
	(!A2 * B1 * !C1 * !Y)	-0.00273	-0.00282	-0.00280
	(!A2 * B1 * !C1 * !Y)	0.00369	0.00372	0.00370
	(!A2 * !B1 * C1 * !Y)	-0.00273	-0.00281	-0.00280
	(!A2 * !B1 * C1 * !Y)	0.00369	0.00372	0.00370
	(!A2 * !B1 * !C1 * Y)	-0.00112	-0.00114	-0.00113
	(!A2 * !B1 * !C1 * Y)	0.00436	0.00442	0.00440

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a211oi_1	**(A1 * B1 * C1 * !Y)**	0.00077	0.00077	0.00077
	(A1 * B1 * C1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * B1 * !C1 * !Y)	0.00078	0.00077	0.00077
	(A1 * B1 * !C1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * !B1 * C1 * !Y)	0.00077	0.00077	0.00077
	(A1 * !B1 * C1 * !Y)	-0.00084	-0.00086	-0.00085
	(!A1 * B1 * !Y)	0.00072	0.00072	0.00072
	(!A1 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !B1 * C1 * !Y)	0.00072	0.00072	0.00072
	(!A1 * !B1 * C1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !B1 * !C1 * Y)	0.00072	0.00072	0.00071
	(!A1 * !B1 * !C1 * Y)	-0.00093	-0.00094	-0.00093

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00161	0.00160	0.00159
	(A1 * B1 * C1 * !Y)	-0.00179	-0.00181	-0.00180
	(A1 * B1 * !C1 * !Y)	0.00161	0.00160	0.00159
	(A1 * B1 * !C1 * !Y)	-0.00179	-0.00181	-0.00180
	(A1 * !B1 * C1 * !Y)	0.00160	0.00160	0.00159
	(A1 * !B1 * C1 * !Y)	-0.00170	-0.00173	-0.00172
	(!A1 * B1 * !Y)	0.00150	0.00151	0.00150
	(!A1 * B1 * !Y)	-0.00187	-0.00189	-0.00188
	(!A1 * !B1 * C1 * !Y)	0.00149	0.00152	0.00150
	(!A1 * !B1 * C1 * !Y)	-0.00187	-0.00189	-0.00188
	(!A1 * !B1 * !C1 * Y)	0.00137	0.00138	0.00137
	(!A1 * !B1 * !C1 * Y)	-0.00202	-0.00202	-0.00202
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00307	0.00311	0.00309
	(A1 * B1 * C1 * !Y)	-0.00350	-0.00360	-0.00357
	(A1 * B1 * !C1 * !Y)	0.00308	0.00311	0.00309
	(A1 * B1 * !C1 * !Y)	-0.00351	-0.00360	-0.00357
	(A1 * !B1 * C1 * !Y)	0.00312	0.00311	0.00309
	(A1 * !B1 * C1 * !Y)	-0.00339	-0.00344	-0.00342
	(!A1 * B1 * !Y)	0.00288	0.00289	0.00287
	(!A1 * B1 * !Y)	-0.00372	-0.00375	-0.00373
	(!A1 * !B1 * C1 * !Y)	0.00287	0.00289	0.00287
	(!A1 * !B1 * C1 * !Y)	-0.00372	-0.00375	-0.00373
	(!A1 * !B1 * !C1 * Y)	0.00286	0.00286	0.00286
	(!A1 * !B1 * !C1 * Y)	-0.00373	-0.00374	-0.00374

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a211oi_1	**(A1 * B1 * C1 * !Y)**	-0.00077	-0.00077	-0.00077
	(A1 * B1 * C1 * !Y)	0.00089	0.00090	0.00089
	(A1 * B1 * !C1 * !Y)	-0.00077	-0.00077	-0.00077
	(A1 * B1 * !C1 * !Y)	0.00090	0.00090	0.00089
	(A1 * !B1 * C1 * !Y)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * C1 * !Y)	0.00086	0.00086	0.00085
	(!A1 * B1 * !Y)	-0.00070	-0.00072	-0.00072
	(!A1 * B1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * !B1 * C1 * !Y)	-0.00070	-0.00072	-0.00072
	(!A1 * !B1 * C1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !C1 * Y)	-0.00070	-0.00072	-0.00071
	(!A1 * !B1 * !C1 * Y)	0.00093	0.00094	0.00093
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00159	-0.00160	-0.00159
	(A1 * B1 * C1 * !Y)	0.00181	0.00181	0.00180
	(A1 * B1 * !C1 * !Y)	-0.00159	-0.00159	-0.00159
	(A1 * B1 * !C1 * !Y)	0.00182	0.00181	0.00180
	(A1 * !B1 * C1 * !Y)	-0.00160	-0.00160	-0.00159
	(A1 * !B1 * C1 * !Y)	0.00174	0.00173	0.00172
	(!A1 * B1 * !Y)	-0.00148	-0.00151	-0.00150
	(!A1 * B1 * !Y)	0.00189	0.00190	0.00189
	(!A1 * !B1 * C1 * !Y)	-0.00149	-0.00152	-0.00150
	(!A1 * !B1 * C1 * !Y)	0.00189	0.00190	0.00189
	(!A1 * !B1 * !C1 * Y)	-0.00135	-0.00138	-0.00137
	(!A1 * !B1 * !C1 * Y)	0.00203	0.00203	0.00202

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00307	-0.00309	-0.00308
	(A1 * B1 * C1 * !Y)	0.00360	0.00360	0.00357
	(A1 * B1 * !C1 * !Y)	-0.00308	-0.00309	-0.00308
	(A1 * B1 * !C1 * !Y)	0.00360	0.00360	0.00357
	(A1 * !B1 * C1 * !Y)	-0.00309	-0.00310	-0.00309
	(A1 * !B1 * C1 * !Y)	0.00342	0.00344	0.00342
	(!A1 * B1 * !Y)	-0.00281	-0.00289	-0.00287
	(!A1 * B1 * !Y)	0.00372	0.00377	0.00374
	(!A1 * !B1 * C1 * !Y)	-0.00281	-0.00289	-0.00287
	(!A1 * !B1 * C1 * !Y)	0.00372	0.00377	0.00374
	(!A1 * !B1 * !C1 * Y)	-0.00280	-0.00286	-0.00286
	(!A1 * !B1 * !C1 * Y)	0.00373	0.00378	0.00375

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * A2 * C1 * !Y)	0.00081	0.00081	0.00080
	(A1 * A2 * C1 * !Y)	-0.00070	-0.00070	-0.00069
	(A1 * A2 * !C1 * !Y)	0.00081	0.00081	0.00080
	(A1 * A2 * !C1 * !Y)	-0.00065	-0.00066	-0.00066
	(A1 * !A2 * C1 * !Y)	0.00080	0.00081	0.00080
	(A1 * !A2 * C1 * !Y)	-0.00087	-0.00088	-0.00087
	(!A1 * C1 * !Y)	0.00080	0.00081	0.00080
	(!A1 * C1 * !Y)	-0.00087	-0.00088	-0.00087
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00096	0.00096	0.00096
	(A1 * A2 * C1 * !Y)	-0.00136	-0.00136	-0.00135
	(A1 * A2 * !C1 * !Y)	0.00095	0.00096	0.00095
	(A1 * A2 * !C1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * !A2 * C1 * !Y)	0.00096	0.00096	0.00095
	(A1 * !A2 * C1 * !Y)	-0.00170	-0.00172	-0.00171
	(!A1 * C1 * !Y)	0.00096	0.00096	0.00095
	(!A1 * C1 * !Y)	-0.00170	-0.00172	-0.00171
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00170	0.00171	0.00170
	(A1 * A2 * C1 * !Y)	-0.00281	-0.00281	-0.00280
	(A1 * A2 * !C1 * !Y)	0.00173	0.00171	0.00169
	(A1 * A2 * !C1 * !Y)	-0.00272	-0.00268	-0.00268
	(A1 * !A2 * C1 * !Y)	0.00171	0.00172	0.00169
	(A1 * !A2 * C1 * !Y)	-0.00352	-0.00358	-0.00356
	(!A1 * C1 * !Y)	0.00171	0.00172	0.00169
	(!A1 * C1 * !Y)	-0.00353	-0.00358	-0.00356

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * A2 * C1 * !Y)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * C1 * !Y)	0.00070	0.00070	0.00069
	(A1 * A2 * !C1 * !Y)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !C1 * !Y)	0.00068	0.00068	0.00068
	(A1 * !A2 * C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * C1 * !Y)	0.00087	0.00088	0.00087
	(!A1 * C1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A1 * C1 * !Y)	0.00088	0.00088	0.00087
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00095	-0.00096	-0.00095
	(A1 * A2 * C1 * !Y)	0.00136	0.00136	0.00135
	(A1 * A2 * !C1 * !Y)	-0.00094	-0.00094	-0.00094
	(A1 * A2 * !C1 * !Y)	0.00131	0.00132	0.00132
	(A1 * !A2 * C1 * !Y)	-0.00096	-0.00096	-0.00095
	(A1 * !A2 * C1 * !Y)	0.00172	0.00172	0.00171
	(!A1 * C1 * !Y)	-0.00096	-0.00096	-0.00095
	(!A1 * C1 * !Y)	0.00172	0.00172	0.00171
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00170	-0.00170	-0.00169
	(A1 * A2 * C1 * !Y)	0.00281	0.00281	0.00280
	(A1 * A2 * !C1 * !Y)	-0.00167	-0.00167	-0.00166
	(A1 * A2 * !C1 * !Y)	0.00272	0.00274	0.00274
	(A1 * !A2 * C1 * !Y)	-0.00171	-0.00171	-0.00169
	(A1 * !A2 * C1 * !Y)	0.00357	0.00358	0.00356
	(!A1 * C1 * !Y)	-0.00171	-0.00171	-0.00169
	(!A1 * C1 * !Y)	0.00358	0.00358	0.00356

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00096	0.00097	0.00097
	(A1 * B1 * !Y)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !B1 * !Y)	0.00097	0.00097	0.00097
	(A1 * A2 * !B1 * !Y)	-0.00058	-0.00058	-0.00058
	(!A1 * B1 * !Y)	0.00097	0.00097	0.00097
	(!A1 * B1 * !Y)	-0.00058	-0.00058	-0.00058
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00104	0.00103	0.00103
	(A1 * B1 * !Y)	-0.00120	-0.00119	-0.00118
	(A1 * A2 * !B1 * !Y)	0.00103	0.00103	0.00103
	(A1 * A2 * !B1 * !Y)	-0.00118	-0.00119	-0.00118
	(!A1 * B1 * !Y)	0.00103	0.00103	0.00103
	(!A1 * B1 * !Y)	-0.00119	-0.00119	-0.00118
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00208	0.00209	0.00208
	(A1 * B1 * !Y)	-0.00238	-0.00239	-0.00238
	(A1 * A2 * !B1 * !Y)	0.00209	0.00209	0.00208
	(A1 * A2 * !B1 * !Y)	-0.00239	-0.00238	-0.00237
	(!A1 * B1 * !Y)	0.00209	0.00209	0.00208
	(!A1 * B1 * !Y)	-0.00240	-0.00239	-0.00238

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00095	-0.00096	-0.00097
	(A1 * B1 * !Y)	0.00059	0.00059	0.00058
	(A1 * A2 * !B1 * !Y)	-0.00084	-0.00085	-0.00094
	(A1 * A2 * !B1 * !Y)	0.00068	0.00067	0.00060
	(!A1 * B1 * !Y)	-0.00095	-0.00096	-0.00097
	(!A1 * B1 * !Y)	0.00060	0.00060	0.00058
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00100	-0.00100	-0.00103
	(A1 * B1 * !Y)	0.00124	0.00123	0.00119
	(A1 * A2 * !B1 * !Y)	-0.00076	-0.00078	-0.00099
	(A1 * A2 * !B1 * !Y)	0.00138	0.00138	0.00122
	(!A1 * B1 * !Y)	-0.00098	-0.00099	-0.00103
	(!A1 * B1 * !Y)	0.00124	0.00124	0.00120
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00202	-0.00204	-0.00208
	(A1 * B1 * !Y)	0.00244	0.00245	0.00239
	(A1 * A2 * !B1 * !Y)	-0.00155	-0.00157	-0.00199
	(A1 * A2 * !B1 * !Y)	0.00277	0.00276	0.00245
	(!A1 * B1 * !Y)	-0.00201	-0.00202	-0.00208
	(!A1 * B1 * !Y)	0.00247	0.00246	0.00240

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	C1	X
0	x	0	0	0
0	x	x	1	1
x	x	1	x	1
1	0	0	0	0
1	0	x	1	1
1	1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211o_1	12.78720
sky130_fd_sc_hs__a211o_2	12.78720
sky130_fd_sc_hs__a211o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__a211o_1	0.00232	0.00218	0.00240	0.00241	0.18846
sky130_fd_sc_hs__a211o_2	0.00259	0.00256	0.00256	0.00250	0.37425
sky130_fd_sc_hs__a211o_4	0.00428	0.00441	0.00475	0.00433	0.73416

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211o_1	0.00000	0.00009	0.00016
sky130_fd_sc_hs__a211o_2	0.00000	0.00013	0.00020
sky130_fd_sc_hs__a211o_4	0.00000	0.00026	0.00041

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (RR)	0.28471	1.67491	9.72357
	A2->X (RR)	0.29089	1.68658	9.92291
	B1->X (RR)	0.24313	1.62072	9.67119
	C1->X (RR)	0.23883	1.61134	9.61525
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.26497	1.50220	9.89257
	A2->X (RR)	0.27217	1.50045	10.03770
	B1->X (RR)	0.21466	1.43587	9.81811
	C1->X (RR)	0.21143	1.42477	9.77602
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.26821	1.36668	9.95235
	A2->X (RR)	0.27568	1.37118	10.11960
	B1->X (RR)	0.20652	1.28612	9.85128
	C1->X (RR)	0.20906	1.28426	9.81791

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	1.46292	2.60831	8.78685
	A2->X (FF)	1.65593	2.81397	9.00813
	B1->X (FF)	1.54744	2.65508	8.92366
	C1->X (FF)	1.39100	2.38969	8.22358
sky130_fd_sc_hs__a211o_2	A1->X (FF)	1.99839	3.20245	9.56956
	A2->X (FF)	2.23945	3.46015	9.83841
	B1->X (FF)	2.13845	3.30943	9.78572
	C1->X (FF)	1.96656	3.02819	9.07826
sky130_fd_sc_hs__a211o_4	A1->X (FF)	1.77953	2.92882	9.30129
	A2->X (FF)	1.93263	3.09910	9.48453
	B1->X (FF)	1.86743	2.97341	9.45064
	C1->X (FF)	1.66820	2.66627	8.72191

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00524	0.00519	0.00511
	A1	0.00255	0.00251	0.00244
	A2	0.00558	0.00555	0.00549
	A2	0.00255	0.00252	0.00246
	B1	0.00497	0.00493	0.00486
	B1	0.00213	0.00210	0.00203
	C1	0.00444	0.00439	0.00431
	C1	0.00183	0.00182	0.00169
sky130_fd_sc_hs__a211o_2	A1	0.00673	0.00674	0.00670
	A1	0.00373	0.00376	0.00371
	A2	0.00721	0.00724	0.00721
	A2	0.00372	0.00377	0.00374
	B1	0.00654	0.00657	0.00652
	B1	0.00337	0.00342	0.00337
	C1	0.00599	0.00600	0.00595
	C1	0.00305	0.00306	0.00302
sky130_fd_sc_hs__a211o_4	A1	0.01226	0.01234	0.01236
	A1	0.00700	0.00709	0.00712
	A2	0.01321	0.01336	0.01342
	A2	0.00702	0.00716	0.00724
	B1	0.01176	0.01181	0.01173
	B1	0.00619	0.00623	0.00617
	C1	0.01038	0.01044	0.01038
	C1	0.00550	0.00557	0.00552

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00207	0.00209	0.00208
	A1	0.00483	0.00485	0.00485
	A2	0.00227	0.00231	0.00231
	A2	0.00535	0.00538	0.00537
	B1	0.00214	0.00217	0.00201
	B1	0.00496	0.00499	0.00498
	C1	0.00211	0.00213	0.00214
	C1	0.00470	0.00471	0.00469
sky130_fd_sc_hs__a211o_2	A1	0.00325	0.00335	0.00217
	A1	0.00632	0.00641	0.00647
	A2	0.00342	0.00353	0.00318
	A2	0.00693	0.00704	0.00710
	B1	0.00346	0.00357	0.00281
	B1	0.00659	0.00670	0.00675
	C1	0.00344	0.00353	0.00358
	C1	0.00632	0.00643	0.00645
sky130_fd_sc_hs__a211o_4	A1	0.00614	0.00639	0.00657
	A1	0.01157	0.01181	0.01197
	A2	0.00621	0.00653	0.00656
	A2	0.01250	0.01280	0.01295
	B1	0.00649	0.00674	0.00413
	B1	0.01204	0.01228	0.01241
	C1	0.00652	0.00675	0.00579
	C1	0.01130	0.01155	0.01165

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a211o_1	**(A2 * B1 * C1 * X)**	0.00067	0.00067	0.00067
	(A2 * B1 * C1 * X)	-0.00082	-0.00083	-0.00083
	(A2 * B1 * !C1 * X)	0.00067	0.00067	0.00067
	(A2 * B1 * !C1 * X)	-0.00082	-0.00083	-0.00083
	(A2 * !B1 * C1 * X)	0.00067	0.00067	0.00066
	(A2 * !B1 * C1 * X)	-0.00078	-0.00080	-0.00079
	(!A2 * B1 * C1 * X)	0.00062	0.00063	0.00062
	(!A2 * B1 * C1 * X)	-0.00086	-0.00087	-0.00087
	(!A2 * B1 * !C1 * X)	0.00062	0.00063	0.00062
	(!A2 * B1 * !C1 * X)	-0.00087	-0.00087	-0.00087
	(!A2 * !B1 * C1 * X)	0.00062	0.00063	0.00062
	(!A2 * !B1 * C1 * X)	-0.00087	-0.00087	-0.00087
	(!A2 * !B1 * !C1 * !X)	0.00024	0.00025	0.00024
	(!A2 * !B1 * !C1 * !X)	-0.00104	-0.00104	-0.00106
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00083	0.00083	0.00082
	(A2 * B1 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A2 * B1 * !C1 * X)	0.00083	0.00083	0.00082
	(A2 * B1 * !C1 * X)	-0.00079	-0.00080	-0.00079
	(A2 * !B1 * C1 * X)	0.00083	0.00082	0.00082
	(A2 * !B1 * C1 * X)	-0.00075	-0.00076	-0.00076
	(!A2 * B1 * C1 * X)	0.00077	0.00077	0.00077
	(!A2 * B1 * C1 * X)	-0.00082	-0.00083	-0.00082
	(!A2 * B1 * !C1 * X)	0.00076	0.00077	0.00077
	(!A2 * B1 * !C1 * X)	-0.00082	-0.00083	-0.00082
	(!A2 * !B1 * C1 * X)	0.00077	0.00077	0.00077
	(!A2 * !B1 * C1 * X)	-0.00082	-0.00083	-0.00082
	(!A2 * !B1 * !C1 * !X)	0.00030	0.00030	0.00029
	(!A2 * !B1 * !C1 * !X)	-0.00104	-0.00105	-0.00105

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00131	0.00130	0.00130
	(A2 * B1 * C1 * X)	-0.00163	-0.00166	-0.00164
	(A2 * B1 * !C1 * X)	0.00131	0.00130	0.00130
	(A2 * B1 * !C1 * X)	-0.00163	-0.00166	-0.00164
	(A2 * !B1 * C1 * X)	0.00130	0.00130	0.00129
	(A2 * !B1 * C1 * X)	-0.00156	-0.00159	-0.00158
	(!A2 * B1 * C1 * X)	0.00121	0.00121	0.00121
	(!A2 * B1 * C1 * X)	-0.00171	-0.00173	-0.00172
	(!A2 * B1 * !C1 * X)	0.00121	0.00121	0.00121
	(!A2 * B1 * !C1 * X)	-0.00173	-0.00173	-0.00172
	(!A2 * !B1 * C1 * X)	0.00121	0.00121	0.00121
	(!A2 * !B1 * C1 * X)	-0.00173	-0.00173	-0.00172
	(!A2 * !B1 * !C1 * !X)	0.00049	0.00049	0.00047
	(!A2 * !B1 * !C1 * !X)	-0.00202	-0.00203	-0.00206

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a211o_1	**(A2 * B1 * C1 * X)**	-0.00067	-0.00067	-0.00067
	(A2 * B1 * C1 * X)	0.00083	0.00083	0.00083
	(A2 * B1 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * !C1 * X)	0.00083	0.00083	0.00083
	(A2 * !B1 * C1 * X)	-0.00066	-0.00067	-0.00066
	(A2 * !B1 * C1 * X)	0.00080	0.00080	0.00079
	(!A2 * B1 * C1 * X)	-0.00061	-0.00063	-0.00062
	(!A2 * B1 * C1 * X)	0.00086	0.00088	0.00087
	(!A2 * B1 * !C1 * X)	-0.00062	-0.00063	-0.00062
	(!A2 * B1 * !C1 * X)	0.00088	0.00088	0.00087
	(!A2 * !B1 * C1 * X)	-0.00062	-0.00063	-0.00062
	(!A2 * !B1 * C1 * X)	0.00088	0.00088	0.00087
	(!A2 * !B1 * !C1 * !X)	-0.00023	-0.00023	-0.00023
	(!A2 * !B1 * !C1 * !X)	0.00107	0.00106	0.00106
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00083	-0.00083	-0.00082
	(A2 * B1 * C1 * X)	0.00080	0.00080	0.00079
	(A2 * B1 * !C1 * X)	-0.00083	-0.00083	-0.00082
	(A2 * B1 * !C1 * X)	0.00080	0.00080	0.00079
	(A2 * !B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(A2 * !B1 * C1 * X)	0.00076	0.00076	0.00076
	(!A2 * B1 * C1 * X)	-0.00075	-0.00077	-0.00077
	(!A2 * B1 * C1 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * !C1 * X)	-0.00075	-0.00077	-0.00077
	(!A2 * B1 * !C1 * X)	0.00082	0.00083	0.00082
	(!A2 * !B1 * C1 * X)	-0.00075	-0.00077	-0.00077
	(!A2 * !B1 * C1 * X)	0.00082	0.00083	0.00082
	(!A2 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * !X)	0.00107	0.00106	0.00105

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00130	-0.00130	-0.00130
	(A2 * B1 * C1 * X)	0.00166	0.00166	0.00164
	(A2 * B1 * !C1 * X)	-0.00130	-0.00130	-0.00130
	(A2 * B1 * !C1 * X)	0.00166	0.00166	0.00164
	(A2 * !B1 * C1 * X)	-0.00130	-0.00130	-0.00129
	(A2 * !B1 * C1 * X)	0.00159	0.00159	0.00158
	(!A2 * B1 * C1 * X)	-0.00118	-0.00121	-0.00121
	(!A2 * B1 * C1 * X)	0.00171	0.00174	0.00172
	(!A2 * B1 * !C1 * X)	-0.00119	-0.00121	-0.00121
	(!A2 * B1 * !C1 * X)	0.00174	0.00174	0.00172
	(!A2 * !B1 * C1 * X)	-0.00119	-0.00121	-0.00121
	(!A2 * !B1 * C1 * X)	0.00174	0.00174	0.00172
	(!A2 * !B1 * !C1 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * !B1 * !C1 * !X)	0.00205	0.00207	0.00206

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a211o_1	**(A1 * B1 * C1 * X)**	0.00069	0.00068	0.00068
	(A1 * B1 * C1 * X)	-0.00081	-0.00082	-0.00082
	(A1 * B1 * !C1 * X)	0.00069	0.00068	0.00068
	(A1 * B1 * !C1 * X)	-0.00081	-0.00082	-0.00082
	(A1 * !B1 * C1 * X)	0.00068	0.00068	0.00068
	(A1 * !B1 * C1 * X)	-0.00077	-0.00079	-0.00078
	(!A1 * B1 * X)	0.00064	0.00065	0.00064
	(!A1 * B1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * !B1 * C1 * X)	0.00064	0.00064	0.00064
	(!A1 * !B1 * C1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * !B1 * !C1 * !X)	0.00057	0.00058	0.00057
	(!A1 * !B1 * !C1 * !X)	-0.00092	-0.00093	-0.00092

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00090	0.00089	0.00089
	(A1 * B1 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * B1 * !C1 * X)	0.00090	0.00089	0.00089
	(A1 * B1 * !C1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * !B1 * C1 * X)	0.00089	0.00089	0.00089
	(A1 * !B1 * C1 * X)	-0.00076	-0.00077	-0.00077
	(!A1 * B1 * X)	0.00083	0.00084	0.00083
	(!A1 * B1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1 * C1 * X)	0.00084	0.00083	0.00083
	(!A1 * !B1 * C1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1 * !C1 * !X)	0.00069	0.00070	0.00070
	(!A1 * !B1 * !C1 * !X)	-0.00096	-0.00097	-0.00096
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00160	0.00159	0.00158
	(A1 * B1 * C1 * X)	-0.00158	-0.00160	-0.00159
	(A1 * B1 * !C1 * X)	0.00160	0.00159	0.00158
	(A1 * B1 * !C1 * X)	-0.00158	-0.00160	-0.00159
	(A1 * !B1 * C1 * X)	0.00158	0.00158	0.00157
	(A1 * !B1 * C1 * X)	-0.00151	-0.00153	-0.00153
	(!A1 * B1 * X)	0.00149	0.00150	0.00149
	(!A1 * B1 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * !B1 * C1 * X)	0.00149	0.00149	0.00149
	(!A1 * !B1 * C1 * X)	-0.00165	-0.00165	-0.00166
	(!A1 * !B1 * !C1 * !X)	0.00146	0.00147	0.00145
	(!A1 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a211o_1	**(A1 * B1 * C1 * X)**	-0.00068	-0.00068	-0.00068
	(A1 * B1 * C1 * X)	0.00082	0.00082	0.00082
	(A1 * B1 * !C1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * B1 * !C1 * X)	0.00082	0.00082	0.00082
	(A1 * !B1 * C1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * !B1 * C1 * X)	0.00079	0.00079	0.00078
	(!A1 * B1 * X)	-0.00063	-0.00065	-0.00064
	(!A1 * B1 * X)	0.00085	0.00086	0.00086
	(!A1 * !B1 * C1 * X)	-0.00063	-0.00064	-0.00064
	(!A1 * !B1 * C1 * X)	0.00085	0.00086	0.00086
	(!A1 * !B1 * !C1 * !X)	-0.00056	-0.00058	-0.00057
	(!A1 * !B1 * !C1 * !X)	0.00092	0.00094	0.00093
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00089	-0.00089	-0.00089
	(A1 * B1 * C1 * X)	0.00080	0.00080	0.00080
	(A1 * B1 * !C1 * X)	-0.00089	-0.00089	-0.00089
	(A1 * B1 * !C1 * X)	0.00080	0.00080	0.00080
	(A1 * !B1 * C1 * X)	-0.00089	-0.00089	-0.00089
	(A1 * !B1 * C1 * X)	0.00077	0.00077	0.00077
	(!A1 * B1 * X)	-0.00082	-0.00084	-0.00083
	(!A1 * B1 * X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * C1 * X)	-0.00082	-0.00083	-0.00083
	(!A1 * !B1 * C1 * X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !C1 * !X)	-0.00068	-0.00070	-0.00070
	(!A1 * !B1 * !C1 * !X)	0.00097	0.00098	0.00097

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00158	-0.00158	-0.00158
	(A1 * B1 * C1 * X)	0.00159	0.00160	0.00159
	(A1 * B1 * !C1 * X)	-0.00158	-0.00158	-0.00158
	(A1 * B1 * !C1 * X)	0.00159	0.00160	0.00159
	(A1 * !B1 * C1 * X)	-0.00158	-0.00157	-0.00157
	(A1 * !B1 * C1 * X)	0.00153	0.00153	0.00153
	(!A1 * B1 * X)	-0.00147	-0.00150	-0.00149
	(!A1 * B1 * X)	0.00165	0.00166	0.00166
	(!A1 * !B1 * C1 * X)	-0.00147	-0.00149	-0.00149
	(!A1 * !B1 * C1 * X)	0.00165	0.00166	0.00166
	(!A1 * !B1 * !C1 * !X)	-0.00143	-0.00146	-0.00145
	(!A1 * !B1 * !C1 * !X)	0.00169	0.00170	0.00170

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * A2 * C1 * X)	0.00080	0.00080	0.00080
	(A1 * A2 * C1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * A2 * !C1 * X)	0.00081	0.00081	0.00080
	(A1 * A2 * !C1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * C1 * X)	0.00080	0.00080	0.00080
	(A1 * !A2 * C1 * X)	-0.00078	-0.00079	-0.00079
	(!A1 * C1 * X)	0.00080	0.00080	0.00080
	(!A1 * C1 * X)	-0.00078	-0.00079	-0.00079
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00084	0.00085	0.00084
	(A1 * A2 * C1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * A2 * !C1 * X)	0.00085	0.00084	0.00083
	(A1 * A2 * !C1 * X)	-0.00060	-0.00059	-0.00059
	(A1 * !A2 * C1 * X)	0.00084	0.00083	0.00083
	(A1 * !A2 * C1 * X)	-0.00079	-0.00079	-0.00079
	(!A1 * C1 * X)	0.00084	0.00083	0.00083
	(!A1 * C1 * X)	-0.00079	-0.00079	-0.00079
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00146	0.00148	0.00147
	(A1 * A2 * C1 * X)	-0.00132	-0.00132	-0.00131
	(A1 * A2 * !C1 * X)	0.00146	0.00147	0.00146
	(A1 * A2 * !C1 * X)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * C1 * X)	0.00146	0.00147	0.00146
	(A1 * !A2 * C1 * X)	-0.00163	-0.00165	-0.00164
	(!A1 * C1 * X)	0.00147	0.00147	0.00146
	(!A1 * C1 * X)	-0.00164	-0.00165	-0.00164

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * A2 * C1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * C1 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * !C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !C1 * X)	0.00061	0.00061	0.00061
	(A1 * !A2 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * !A2 * C1 * X)	0.00078	0.00079	0.00079
	(!A1 * C1 * X)	-0.00080	-0.00080	-0.00080
	(!A1 * C1 * X)	0.00078	0.00079	0.00079
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * C1 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * !C1 * X)	-0.00082	-0.00083	-0.00082
	(A1 * A2 * !C1 * X)	0.00061	0.00061	0.00061
	(A1 * !A2 * C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * C1 * X)	0.00079	0.00079	0.00079
	(!A1 * C1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * C1 * X)	0.00079	0.00079	0.00079
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00146	-0.00147	-0.00146
	(A1 * A2 * C1 * X)	0.00132	0.00132	0.00131
	(A1 * A2 * !C1 * X)	-0.00144	-0.00145	-0.00143
	(A1 * A2 * !C1 * X)	0.00127	0.00128	0.00128
	(A1 * !A2 * C1 * X)	-0.00146	-0.00146	-0.00145
	(A1 * !A2 * C1 * X)	0.00165	0.00165	0.00164
	(!A1 * C1 * X)	-0.00146	-0.00146	-0.00145
	(!A1 * C1 * X)	0.00165	0.00165	0.00164

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00089	0.00090	0.00089
	(A1 * B1 * X)	-0.00054	-0.00055	-0.00054
	(A1 * A2 * !B1 * X)	0.00089	0.00090	0.00089
	(A1 * A2 * !B1 * X)	-0.00054	-0.00054	-0.00054
	(!A1 * B1 * X)	0.00089	0.00090	0.00089
	(!A1 * B1 * X)	-0.00054	-0.00055	-0.00054
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00090	0.00090	0.00089
	(A1 * B1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * A2 * !B1 * X)	0.00091	0.00090	0.00089
	(A1 * A2 * !B1 * X)	-0.00057	-0.00056	-0.00056
	(!A1 * B1 * X)	0.00089	0.00090	0.00089
	(!A1 * B1 * X)	-0.00056	-0.00056	-0.00056
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00143	0.00143	0.00143
	(A1 * B1 * X)	-0.00108	-0.00109	-0.00108
	(A1 * A2 * !B1 * X)	0.00142	0.00143	0.00143
	(A1 * A2 * !B1 * X)	-0.00108	-0.00109	-0.00108
	(!A1 * B1 * X)	0.00142	0.00143	0.00143
	(!A1 * B1 * X)	-0.00109	-0.00110	-0.00109

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00088	-0.00088	-0.00089
	(A1 * B1 * X)	0.00055	0.00055	0.00054
	(A1 * A2 * !B1 * X)	-0.00077	-0.00078	-0.00087
	(A1 * A2 * !B1 * X)	0.00063	0.00063	0.00056
	(!A1 * B1 * X)	-0.00088	-0.00088	-0.00089
	(!A1 * B1 * X)	0.00056	0.00056	0.00054
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00088	-0.00089	-0.00089
	(A1 * B1 * X)	0.00057	0.00057	0.00056
	(A1 * A2 * !B1 * X)	-0.00078	-0.00079	-0.00088
	(A1 * A2 * !B1 * X)	0.00064	0.00064	0.00058
	(!A1 * B1 * X)	-0.00088	-0.00088	-0.00089
	(!A1 * B1 * X)	0.00057	0.00057	0.00056
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00139	-0.00141	-0.00143
	(A1 * B1 * X)	0.00111	0.00112	0.00109
	(A1 * A2 * !B1 * X)	-0.00119	-0.00120	-0.00139
	(A1 * A2 * !B1 * X)	0.00126	0.00126	0.00112
	(!A1 * B1 * X)	-0.00139	-0.00140	-0.00143
	(!A1 * B1 * X)	0.00113	0.00113	0.00110

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A1	A2	B1_N	Y
x	x	0	0
0	x	1	1
1	0	1	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21boi_1	11.18880
sky130_fd_sc_hs__a21boi_2	14.38560
sky130_fd_sc_hs__a21boi_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__a21boi_1	0.00250	0.00237	0.00235	0.07478
sky130_fd_sc_hs__a21boi_2	0.00471	0.00446	0.00229	0.14868
sky130_fd_sc_hs__a21boi_4	0.00933	0.00911	0.00336	0.28973

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	0.00009	0.00012
sky130_fd_sc_hs__a21boi_2	0.00000	0.00015	0.00022
sky130_fd_sc_hs__a21boi_4	0.00000	0.00027	0.00042

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (FR)	0.50518	2.60448	14.05220
	A2->Y (FR)	0.62392	2.75233	14.29190
	B1_N->Y (RR)	0.58149	2.31406	10.19650
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.43103	2.29437	14.17370
	A2->Y (FR)	0.56315	2.43104	14.30300
	B1_N->Y (RR)	0.50806	1.99621	10.24420
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.41455	2.07334	14.23200
	A2->Y (FR)	0.54476	2.19667	14.28450
	B1_N->Y (RR)	0.51484	1.84084	10.52140

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.07533	0.77453	4.72039
	A2->Y (RF)	0.08117	0.77015	4.67992
	B1_N->Y (FF)	0.35015	1.30671	6.35943
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.06985	0.73478	4.82746
	A2->Y (RF)	0.07864	0.73846	4.76607
	B1_N->Y (FF)	0.41643	1.38864	6.79022
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.07047	0.70493	4.90954
	A2->Y (RF)	0.07856	0.69825	4.74832
	B1_N->Y (FF)	0.41833	1.36129	6.66565

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00035	0.00030	0.00030
	A1	0.00239	0.00233	0.00233
	A2	0.00063	0.00059	0.00058
	A2	0.00305	0.00299	0.00299
	B1_N	0.00410	0.00398	0.00390
	B1_N	0.00270	0.00256	0.00250
sky130_fd_sc_hs__a21boi_2	A1	0.00075	0.00068	0.00068
	A1	0.00469	0.00460	0.00461
	A2	0.00155	0.00145	0.00144
	A2	0.00625	0.00612	0.00612
	B1_N	0.00611	0.00598	0.00591
	B1_N	0.00535	0.00522	0.00515
sky130_fd_sc_hs__a21boi_4	A1	0.00162	0.00145	0.00148
	A1	0.00957	0.00943	0.00946
	A2	0.00288	0.00268	0.00268
	A2	0.01247	0.01223	0.01222
	B1_N	0.01073	0.01053	0.01047
	B1_N	0.01031	0.01014	0.01005

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00245	0.00240	0.00235
	A1	0.00046	0.00040	0.00035
	A2	0.00286	0.00282	0.00276
	A2	0.00045	0.00040	0.00035
	B1_N	0.00226	0.00216	0.00217
	B1_N	0.00362	0.00356	0.00354
sky130_fd_sc_hs__a21boi_2	A1	0.00426	0.00414	0.00404
	A1	0.00041	0.00028	0.00018
	A2	0.00508	0.00499	0.00489
	A2	0.00040	0.00029	0.00019
	B1_N	0.00412	0.00411	0.00415
	B1_N	0.00480	0.00482	0.00481
sky130_fd_sc_hs__a21boi_4	A1	0.00844	0.00820	0.00802
	A1	0.00063	0.00034	0.00019
	A2	0.01020	0.00999	0.00980
	A2	0.00066	0.00040	0.00024
	B1_N	0.00837	0.00837	0.00852
	B1_N	0.00863	0.00870	0.00877

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A2 * !B1_N * !Y)	0.00079	0.00079	0.00078
	(A2 * !B1_N * !Y)	-0.00093	-0.00094	-0.00093
	(!A2 * B1_N * Y)	0.00036	0.00036	0.00035
	(!A2 * B1_N * Y)	-0.00107	-0.00108	-0.00110
	(!A2 * !B1_N * !Y)	0.00073	0.00074	0.00073
	(!A2 * !B1_N * !Y)	-0.00096	-0.00096	-0.00096
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00155	0.00155	0.00154
	(A2 * !B1_N * !Y)	-0.00179	-0.00181	-0.00179
	(!A2 * B1_N * Y)	0.00066	0.00066	0.00063
	(!A2 * B1_N * Y)	-0.00213	-0.00214	-0.00219
	(!A2 * !B1_N * !Y)	0.00144	0.00145	0.00144
	(!A2 * !B1_N * !Y)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00304	0.00304	0.00302
	(A2 * !B1_N * !Y)	-0.00360	-0.00364	-0.00361
	(!A2 * B1_N * Y)	0.00124	0.00124	0.00119
	(!A2 * B1_N * Y)	-0.00432	-0.00434	-0.00442
	(!A2 * !B1_N * !Y)	0.00282	0.00285	0.00282
	(!A2 * !B1_N * !Y)	-0.00371	-0.00373	-0.00372

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A2 * !B1_N * !Y)	-0.00078	-0.00078	-0.00078
	(A2 * !B1_N * !Y)	0.00094	0.00094	0.00093
	(!A2 * B1_N * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * B1_N * Y)	0.00109	0.00111	0.00110
	(!A2 * !B1_N * !Y)	-0.00072	-0.00074	-0.00073
	(!A2 * !B1_N * !Y)	0.00096	0.00097	0.00096
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00154	-0.00154	-0.00154
	(A2 * !B1_N * !Y)	0.00181	0.00181	0.00179
	(!A2 * B1_N * Y)	-0.00062	-0.00062	-0.00061
	(!A2 * B1_N * Y)	0.00220	0.00222	0.00219
	(!A2 * !B1_N * !Y)	-0.00141	-0.00145	-0.00144
	(!A2 * !B1_N * !Y)	0.00185	0.00187	0.00185
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00301	-0.00303	-0.00301
	(A2 * !B1_N * !Y)	0.00360	0.00364	0.00361
	(!A2 * B1_N * Y)	-0.00116	-0.00117	-0.00116
	(!A2 * B1_N * Y)	0.00441	0.00447	0.00442
	(!A2 * !B1_N * !Y)	-0.00277	-0.00285	-0.00282
	(!A2 * !B1_N * !Y)	0.00373	0.00373	0.00373

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A1 * !B1_N * !Y)	0.00083	0.00082	0.00082
	(A1 * !B1_N * !Y)	-0.00089	-0.00090	-0.00089
	(!A1 * B1_N * Y)	0.00076	0.00077	0.00076
	(!A1 * B1_N * Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !B1_N * !Y)	0.00076	0.00077	0.00076
	(!A1 * !B1_N * !Y)	-0.00092	-0.00093	-0.00092
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00153	0.00152	0.00151
	(A1 * !B1_N * !Y)	-0.00178	-0.00180	-0.00179
	(!A1 * B1_N * Y)	0.00142	0.00142	0.00141
	(!A1 * B1_N * Y)	-0.00185	-0.00185	-0.00184
	(!A1 * !B1_N * !Y)	0.00140	0.00142	0.00141
	(!A1 * !B1_N * !Y)	-0.00183	-0.00185	-0.00184
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00304	0.00307	0.00306
	(A1 * !B1_N * !Y)	-0.00354	-0.00362	-0.00359
	(!A1 * B1_N * Y)	0.00273	0.00273	0.00271
	(!A1 * B1_N * Y)	-0.00387	-0.00387	-0.00386
	(!A1 * !B1_N * !Y)	0.00289	0.00290	0.00288
	(!A1 * !B1_N * !Y)	-0.00370	-0.00371	-0.00370

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A1 * !B1_N * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * !B1_N * !Y)	0.00090	0.00090	0.00089
	(!A1 * B1_N * Y)	-0.00075	-0.00077	-0.00076
	(!A1 * B1_N * Y)	0.00093	0.00094	0.00093
	(!A1 * !B1_N * !Y)	-0.00075	-0.00077	-0.00076
	(!A1 * !B1_N * !Y)	0.00092	0.00093	0.00092
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00151	-0.00151	-0.00151
	(A1 * !B1_N * !Y)	0.00180	0.00180	0.00179
	(!A1 * B1_N * Y)	-0.00139	-0.00142	-0.00141
	(!A1 * B1_N * Y)	0.00185	0.00186	0.00185
	(!A1 * !B1_N * !Y)	-0.00139	-0.00142	-0.00141
	(!A1 * !B1_N * !Y)	0.00185	0.00186	0.00184
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00304	-0.00306	-0.00305
	(A1 * !B1_N * !Y)	0.00362	0.00362	0.00359
	(!A1 * B1_N * Y)	-0.00268	-0.00273	-0.00271
	(!A1 * B1_N * Y)	0.00390	0.00391	0.00386
	(!A1 * !B1_N * !Y)	-0.00284	-0.00290	-0.00288
	(!A1 * !B1_N * !Y)	0.00372	0.00373	0.00371

Passive power(pJ) for B1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A1 * A2 * !Y)	0.00260	0.00250	0.00241
	(A1 * A2 * !Y)	0.00060	0.00049	0.00042
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00313	0.00303	0.00292
	(A1 * A2 * !Y)	0.00118	0.00108	0.00097
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00492	0.00476	0.00456
	(A1 * A2 * !Y)	0.00205	0.00188	0.00170

Passive power(pJ) for B1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	(A1 * A2 * !Y)	0.00056	0.00048	0.00045
	(A1 * A2 * !Y)	0.00255	0.00247	0.00244
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00152	0.00144	0.00141
	(A1 * A2 * !Y)	0.00346	0.00338	0.00334
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00319	0.00307	0.00303
	(A1 * A2 * !Y)	0.00604	0.00592	0.00585

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A1	A2	B1_N	X
x	x	0	1
0	x	1	0
1	0	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21bo_1	12.78720
sky130_fd_sc_hs__a21bo_2	12.78720
sky130_fd_sc_hs__a21bo_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__a21bo_1	0.00231	0.00220	0.00196	0.17779
sky130_fd_sc_hs__a21bo_2	0.00247	0.00230	0.00206	0.35209
sky130_fd_sc_hs__a21bo_4	0.00422	0.00448	0.00240	0.69732

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21bo_1	0.00000	0.00013	0.00016
sky130_fd_sc_hs__a21bo_2	0.00000	0.00016	0.00021
sky130_fd_sc_hs__a21bo_4	0.00000	0.00030	0.00038

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (RR)	0.27957	1.66588	9.55094
	A2->X (RR)	0.28456	1.67792	9.75628
	B1_N->X (FR)	0.54331	2.25171	12.71580
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.25186	1.47203	9.66551
	A2->X (RR)	0.25808	1.47573	9.82577
	B1_N->X (FR)	0.55928	2.07381	12.85800
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.25389	1.34702	9.89149
	A2->X (RR)	0.26304	1.35957	10.07850
	B1_N->X (FR)	0.64887	2.03944	13.42510

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.83516	1.93068	8.09441
	A2->X (FF)	0.93182	2.03721	8.25070
	B1_N->X (RF)	0.89935	1.59257	4.34154
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	1.10773	2.22687	8.57354
	A2->X (FF)	1.23667	2.37239	8.75058
	B1_N->X (RF)	1.23573	1.97212	4.84694
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	1.02101	2.10683	8.47353
	A2->X (FF)	1.12289	2.22003	8.62309
	B1_N->X (RF)	1.09160	1.80185	4.73480

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00418	0.00415	0.00409
	A1	0.00225	0.00222	0.00217
	A2	0.00456	0.00457	0.00454
	A2	0.00226	0.00226	0.00223
	B1_N	0.00413	0.00415	0.00406
	B1_N	0.00518	0.00517	0.00518
sky130_fd_sc_hs__a21bo_2	A1	0.00557	0.00560	0.00559
	A1	0.00355	0.00358	0.00357
	A2	0.00592	0.00600	0.00601
	A2	0.00353	0.00360	0.00362
	B1_N	0.00573	0.00578	0.00571
	B1_N	0.00680	0.00685	0.00678
sky130_fd_sc_hs__a21bo_4	A1	0.01014	0.01021	0.01024
	A1	0.00667	0.00674	0.00678
	A2	0.01119	0.01135	0.01141
	A2	0.00667	0.00682	0.00689
	B1_N	0.01003	0.01023	0.01022
	B1_N	0.01091	0.01112	0.01116

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00231	0.00233	0.00244
	A1	0.00427	0.00428	0.00427
	A2	0.00238	0.00242	0.00241
	A2	0.00468	0.00472	0.00470
	B1_N	0.00542	0.00532	0.00523
	B1_N	0.00434	0.00424	0.00415
sky130_fd_sc_hs__a21bo_2	A1	0.00337	0.00348	0.00350
	A1	0.00542	0.00554	0.00554
	A2	0.00364	0.00379	0.00382
	A2	0.00602	0.00617	0.00618
	B1_N	0.00707	0.00706	0.00693
	B1_N	0.00595	0.00593	0.00580
sky130_fd_sc_hs__a21bo_4	A1	0.00663	0.00691	0.00709
	A1	0.01016	0.01043	0.01051
	A2	0.00673	0.00707	0.00715
	A2	0.01124	0.01157	0.01161
	B1_N	0.01178	0.01196	0.01186
	B1_N	0.01081	0.01099	0.01086

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A2 * !B1_N * X)	0.00067	0.00067	0.00067
	(A2 * !B1_N * X)	-0.00089	-0.00090	-0.00089
	(!A2 * B1_N * !X)	0.00029	0.00030	0.00029
	(!A2 * B1_N * !X)	-0.00103	-0.00104	-0.00104
	(!A2 * !B1_N * X)	0.00062	0.00063	0.00062
	(!A2 * !B1_N * X)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00081	0.00080	0.00080
	(A2 * !B1_N * X)	-0.00087	-0.00087	-0.00087
	(!A2 * B1_N * !X)	0.00037	0.00038	0.00036
	(!A2 * B1_N * !X)	-0.00102	-0.00103	-0.00104
	(!A2 * !B1_N * X)	0.00074	0.00075	0.00075
	(!A2 * !B1_N * X)	-0.00089	-0.00090	-0.00090
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00128	0.00127	0.00126
	(A2 * !B1_N * X)	-0.00164	-0.00166	-0.00165
	(!A2 * B1_N * !X)	0.00049	0.00049	0.00047
	(!A2 * B1_N * !X)	-0.00197	-0.00198	-0.00201
	(!A2 * !B1_N * X)	0.00117	0.00118	0.00117
	(!A2 * !B1_N * X)	-0.00170	-0.00171	-0.00170

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A2 * !B1_N * X)	-0.00067	-0.00067	-0.00067
	(A2 * !B1_N * X)	0.00090	0.00090	0.00089
	(!A2 * B1_N * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * B1_N * !X)	0.00106	0.00105	0.00104
	(!A2 * !B1_N * X)	-0.00061	-0.00063	-0.00062
	(!A2 * !B1_N * X)	0.00092	0.00093	0.00092
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00080	-0.00080	-0.00080
	(A2 * !B1_N * X)	0.00087	0.00087	0.00087
	(!A2 * B1_N * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * B1_N * !X)	0.00105	0.00105	0.00104
	(!A2 * !B1_N * X)	-0.00073	-0.00075	-0.00075
	(!A2 * !B1_N * X)	0.00089	0.00091	0.00090
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00127	-0.00127	-0.00126
	(A2 * !B1_N * X)	0.00166	0.00166	0.00165
	(!A2 * B1_N * !X)	-0.00045	-0.00046	-0.00046
	(!A2 * B1_N * !X)	0.00200	0.00202	0.00201
	(!A2 * !B1_N * X)	-0.00115	-0.00118	-0.00117
	(!A2 * !B1_N * X)	0.00172	0.00172	0.00171

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A1 * !B1_N * X)	0.00078	0.00079	0.00078
	(A1 * !B1_N * X)	-0.00080	-0.00082	-0.00081
	(!A1 * B1_N * !X)	0.00074	0.00075	0.00074
	(!A1 * B1_N * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * !B1_N * X)	0.00074	0.00074	0.00074
	(!A1 * !B1_N * X)	-0.00083	-0.00084	-0.00083
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00079	0.00078	0.00078
	(A1 * !B1_N * X)	-0.00084	-0.00085	-0.00084
	(!A1 * B1_N * !X)	0.00073	0.00073	0.00073
	(!A1 * B1_N * !X)	-0.00087	-0.00088	-0.00087
	(!A1 * !B1_N * X)	0.00073	0.00073	0.00073
	(!A1 * !B1_N * X)	-0.00087	-0.00087	-0.00087
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00161	0.00160	0.00159
	(A1 * !B1_N * X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1_N * !X)	0.00148	0.00149	0.00148
	(!A1 * B1_N * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !B1_N * X)	0.00148	0.00149	0.00149
	(!A1 * !B1_N * X)	-0.00168	-0.00169	-0.00169

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A1 * !B1_N * X)	-0.00078	-0.00079	-0.00078
	(A1 * !B1_N * X)	0.00081	0.00082	0.00081
	(!A1 * B1_N * !X)	-0.00073	-0.00075	-0.00074
	(!A1 * B1_N * !X)	0.00084	0.00084	0.00084
	(!A1 * !B1_N * X)	-0.00073	-0.00074	-0.00074
	(!A1 * !B1_N * X)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00078	-0.00078	-0.00078
	(A1 * !B1_N * X)	0.00085	0.00085	0.00084
	(!A1 * B1_N * !X)	-0.00072	-0.00073	-0.00073
	(!A1 * B1_N * !X)	0.00087	0.00088	0.00088
	(!A1 * !B1_N * X)	-0.00072	-0.00073	-0.00073
	(!A1 * !B1_N * X)	0.00087	0.00088	0.00087
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00159	-0.00159	-0.00159
	(A1 * !B1_N * X)	0.00164	0.00165	0.00164
	(!A1 * B1_N * !X)	-0.00146	-0.00149	-0.00148
	(!A1 * B1_N * !X)	0.00169	0.00170	0.00169
	(!A1 * !B1_N * X)	-0.00147	-0.00149	-0.00149
	(!A1 * !B1_N * X)	0.00169	0.00169	0.00169

Passive power(pJ) for B1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A1 * A2 * X)	0.00214	0.00206	0.00198
	(A1 * A2 * X)	0.00047	0.00038	0.00031
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00242	0.00234	0.00225
	(A1 * A2 * X)	0.00067	0.00057	0.00050
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00333	0.00324	0.00312
	(A1 * A2 * X)	0.00129	0.00118	0.00108

Passive power(pJ) for B1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A1 * A2 * X)	0.00068	0.00062	0.00059
	(A1 * A2 * X)	0.00234	0.00228	0.00225
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00081	0.00074	0.00071
	(A1 * A2 * X)	0.00256	0.00249	0.00246
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00122	0.00114	0.00112
	(A1 * A2 * X)	0.00326	0.00318	0.00315

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A1	A2	B1	Y
0	x	0	1
x	x	1	0
1	0	0	1
1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21oi_1	6.39360
sky130_fd_sc_hs__a21oi_2	12.78720
sky130_fd_sc_hs__a21oi_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__a21oi_1	0.00259	0.00237	0.00257	0.07476
sky130_fd_sc_hs__a21oi_2	0.00468	0.00478	0.00379	0.14316
sky130_fd_sc_hs__a21oi_4	0.00954	0.00906	0.00747	0.28316

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.00006	0.00009
sky130_fd_sc_hs__a21oi_2	0.00000	0.00010	0.00014
sky130_fd_sc_hs__a21oi_4	0.00000	0.00020	0.00029

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (FR)	0.51086	2.60929	14.05740
	A2->Y (FR)	0.61846	2.74571	14.28270
	B1->Y (FR)	0.51544	2.54382	13.67300
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.43163	2.31231	14.20130
	A2->Y (FR)	0.58612	2.45849	14.28550
	B1->Y (FR)	0.43779	2.21832	13.61720
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.40139	2.06199	14.17130
	A2->Y (FR)	0.53016	2.18578	14.21460
	B1->Y (FR)	0.40200	1.96559	13.60500

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.07592	0.77473	4.71864
	A2->Y (RF)	0.08058	0.76968	4.67993
	B1->Y (RF)	0.06025	0.68093	4.26071
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.06919	0.73377	4.78871
	A2->Y (RF)	0.08053	0.73774	4.72664
	B1->Y (RF)	0.06672	0.76285	5.11128
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.06939	0.70152	4.87665
	A2->Y (RF)	0.07715	0.69435	4.71680
	B1->Y (RF)	0.06697	0.73167	5.23665

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00006	-0.00011	-0.00012
	A1	0.00251	0.00244	0.00245
	A2	0.00013	0.00009	0.00008
	A2	0.00309	0.00303	0.00303
	B1	0.00011	0.00005	0.00004
	B1	0.00274	0.00268	0.00267
sky130_fd_sc_hs__a21oi_2	A1	-0.00023	-0.00030	-0.00030
	A1	0.00454	0.00446	0.00447
	A2	0.00048	0.00036	0.00035
	A2	0.00620	0.00607	0.00606
	B1	0.00095	0.00086	0.00085
	B1	0.00528	0.00518	0.00517
sky130_fd_sc_hs__a21oi_4	A1	-0.00079	-0.00093	-0.00090
	A1	0.00902	0.00884	0.00888
	A2	0.00063	0.00042	0.00041
	A2	0.01208	0.01185	0.01183
	B1	0.00164	0.00145	0.00144
	B1	0.01019	0.01000	0.00997

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00291	0.00286	0.00279
	A1	0.00041	0.00035	0.00029
	A2	0.00333	0.00329	0.00322
	A2	0.00041	0.00035	0.00030
	B1	0.00256	0.00255	0.00253
	B1	-0.00010	-0.00012	-0.00013
sky130_fd_sc_hs__a21oi_2	A1	0.00505	0.00494	0.00482
	A1	0.00040	0.00027	0.00017
	A2	0.00612	0.00602	0.00590
	A2	0.00040	0.00029	0.00019
	B1	0.00374	0.00373	0.00372
	B1	-0.00069	-0.00072	-0.00073
sky130_fd_sc_hs__a21oi_4	A1	0.01021	0.00994	0.00975
	A1	0.00066	0.00036	0.00022
	A2	0.01198	0.01178	0.01157
	A2	0.00062	0.00037	0.00021
	B1	0.00737	0.00730	0.00736
	B1	-0.00133	-0.00143	-0.00138

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00080	0.00080	0.00079
	(A2 * B1 * !Y)	-0.00087	-0.00089	-0.00088
	(!A2 * B1 * !Y)	0.00074	0.00074	0.00074
	(!A2 * B1 * !Y)	-0.00092	-0.00092	-0.00092
	(!A2 * !B1 * Y)	0.00030	0.00030	0.00029
	(!A2 * !B1 * Y)	-0.00112	-0.00111	-0.00112
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00158	0.00159	0.00158
	(A2 * B1 * !Y)	-0.00170	-0.00175	-0.00173
	(!A2 * B1 * !Y)	0.00142	0.00144	0.00143
	(!A2 * B1 * !Y)	-0.00180	-0.00182	-0.00181
	(!A2 * !B1 * Y)	0.00065	0.00065	0.00062
	(!A2 * !B1 * Y)	-0.00209	-0.00210	-0.00215
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00319	0.00320	0.00318
	(A2 * B1 * !Y)	-0.00339	-0.00348	-0.00344
	(!A2 * B1 * !Y)	0.00295	0.00298	0.00296
	(!A2 * B1 * !Y)	-0.00358	-0.00360	-0.00358
	(!A2 * !B1 * Y)	0.00122	0.00122	0.00116
	(!A2 * !B1 * Y)	-0.00435	-0.00436	-0.00445

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00080	-0.00080	-0.00079
	(A2 * B1 * !Y)	0.00089	0.00089	0.00088
	(!A2 * B1 * !Y)	-0.00072	-0.00074	-0.00074
	(!A2 * B1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * Y)	0.00113	0.00114	0.00112
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00158	-0.00159	-0.00158
	(A2 * B1 * !Y)	0.00172	0.00175	0.00173
	(!A2 * B1 * !Y)	-0.00138	-0.00144	-0.00143
	(!A2 * B1 * !Y)	0.00180	0.00182	0.00181
	(!A2 * !B1 * Y)	-0.00060	-0.00061	-0.00060
	(!A2 * !B1 * Y)	0.00214	0.00217	0.00215
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00319	-0.00320	-0.00318
	(A2 * B1 * !Y)	0.00347	0.00348	0.00344
	(!A2 * B1 * !Y)	-0.00288	-0.00298	-0.00296
	(!A2 * B1 * !Y)	0.00358	0.00361	0.00359
	(!A2 * !B1 * Y)	-0.00113	-0.00114	-0.00113
	(!A2 * !B1 * Y)	0.00444	0.00450	0.00445

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00081	0.00080	0.00080
	(A1 * B1 * !Y)	-0.00088	-0.00089	-0.00088
	(!A1 * B1 * !Y)	0.00074	0.00075	0.00074
	(!A1 * B1 * !Y)	-0.00092	-0.00092	-0.00092
	(!A1 * !B1 * Y)	0.00074	0.00075	0.00074
	(!A1 * !B1 * Y)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00165	0.00165	0.00164
	(A1 * B1 * !Y)	-0.00171	-0.00174	-0.00173
	(!A1 * B1 * !Y)	0.00149	0.00151	0.00150
	(!A1 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * !B1 * Y)	0.00143	0.00143	0.00142
	(!A1 * !B1 * Y)	-0.00189	-0.00190	-0.00189
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00309	0.00311	0.00309
	(A1 * B1 * !Y)	-0.00348	-0.00357	-0.00354
	(!A1 * B1 * !Y)	0.00287	0.00289	0.00286
	(!A1 * B1 * !Y)	-0.00368	-0.00372	-0.00370
	(!A1 * !B1 * Y)	0.00282	0.00285	0.00283
	(!A1 * !B1 * Y)	-0.00372	-0.00375	-0.00373

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * !Y)	0.00088	0.00089	0.00088
	(!A1 * B1 * !Y)	-0.00073	-0.00075	-0.00074
	(!A1 * B1 * !Y)	0.00092	0.00093	0.00092
	(!A1 * !B1 * Y)	-0.00073	-0.00075	-0.00074
	(!A1 * !B1 * Y)	0.00092	0.00093	0.00092
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00165	-0.00165	-0.00164
	(A1 * B1 * !Y)	0.00174	0.00174	0.00173
	(!A1 * B1 * !Y)	-0.00147	-0.00151	-0.00150
	(!A1 * B1 * !Y)	0.00183	0.00183	0.00181
	(!A1 * !B1 * Y)	-0.00140	-0.00143	-0.00142
	(!A1 * !B1 * Y)	0.00190	0.00190	0.00189
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00309	-0.00311	-0.00309
	(A1 * B1 * !Y)	0.00357	0.00357	0.00354
	(!A1 * B1 * !Y)	-0.00280	-0.00289	-0.00286
	(!A1 * B1 * !Y)	0.00368	0.00374	0.00371
	(!A1 * !B1 * Y)	-0.00276	-0.00285	-0.00283
	(!A1 * !B1 * Y)	0.00372	0.00377	0.00374

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00095	0.00095	0.00094
	(A1 * A2 * !Y)	-0.00059	-0.00059	-0.00059
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00106	0.00107	0.00106
	(A1 * A2 * !Y)	-0.00121	-0.00122	-0.00121
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00205	0.00205	0.00204
	(A1 * A2 * !Y)	-0.00236	-0.00235	-0.00234

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00088	-0.00088	-0.00094
	(A1 * A2 * !Y)	0.00065	0.00065	0.00060
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00092	-0.00094	-0.00105
	(A1 * A2 * !Y)	0.00134	0.00133	0.00124
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00178	-0.00181	-0.00203
	(A1 * A2 * !Y)	0.00259	0.00257	0.00240

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A1	A2	B1	X
0	x	0	0
x	x	1	1
1	0	0	0
1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21o_1	11.18880
sky130_fd_sc_hs__a21o_2	11.18880
sky130_fd_sc_hs__a21o_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__a21o_1	0.00216	0.00219	0.00225	0.18848
sky130_fd_sc_hs__a21o_2	0.00241	0.00229	0.00251	0.37125
sky130_fd_sc_hs__a21o_4	0.00433	0.00406	0.00453	0.73191

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	0.00009	0.00013
sky130_fd_sc_hs__a21o_2	0.00000	0.00013	0.00017
sky130_fd_sc_hs__a21o_4	0.00000	0.00026	0.00034

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (RR)	0.26802	1.63801	9.57924
	A2->X (RR)	0.27506	1.65595	9.80125
	B1->X (RR)	0.22607	1.57972	9.53266
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.24685	1.45416	9.65505
	A2->X (RR)	0.25320	1.45751	9.81575
	B1->X (RR)	0.19767	1.38690	9.58175
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.26759	1.35589	9.87400
	A2->X (RR)	0.27703	1.36462	10.06260
	B1->X (RR)	0.20245	1.27043	9.77726

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.79198	1.88575	8.05546
	A2->X (FF)	0.90446	2.00741	8.24257
	B1->X (FF)	0.80562	1.80142	7.59856
sky130_fd_sc_hs__a21o_2	A1->X (FF)	1.06421	2.17989	8.53119
	A2->X (FF)	1.19440	2.32411	8.71175
	B1->X (FF)	1.10105	2.11632	8.14547
sky130_fd_sc_hs__a21o_4	A1->X (FF)	1.03184	2.11655	8.52295
	A2->X (FF)	1.16143	2.25623	8.70722
	B1->X (FF)	1.05465	2.03709	8.11690

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00441	0.00438	0.00433
	A1	0.00226	0.00223	0.00218
	A2	0.00492	0.00492	0.00488
	A2	0.00226	0.00225	0.00222
	B1	0.00402	0.00392	0.00385
	B1	0.00175	0.00166	0.00160
sky130_fd_sc_hs__a21o_2	A1	0.00595	0.00599	0.00597
	A1	0.00357	0.00361	0.00360
	A2	0.00640	0.00648	0.00648
	A2	0.00356	0.00363	0.00365
	B1	0.00565	0.00563	0.00557
	B1	0.00309	0.00308	0.00303
sky130_fd_sc_hs__a21o_4	A1	0.01121	0.01130	0.01131
	A1	0.00668	0.00678	0.00680
	A2	0.01192	0.01209	0.01217
	A2	0.00668	0.00684	0.00694
	B1	0.01043	0.01042	0.01035
	B1	0.00565	0.00565	0.00559

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00183	0.00185	0.00183
	A1	0.00403	0.00404	0.00402
	A2	0.00187	0.00191	0.00195
	A2	0.00454	0.00458	0.00455
	B1	0.00203	0.00203	0.00230
	B1	0.00425	0.00425	0.00422
sky130_fd_sc_hs__a21o_2	A1	0.00294	0.00307	0.00309
	A1	0.00537	0.00550	0.00551
	A2	0.00312	0.00328	0.00303
	A2	0.00598	0.00613	0.00615
	B1	0.00315	0.00327	0.00371
	B1	0.00568	0.00577	0.00577
sky130_fd_sc_hs__a21o_4	A1	0.00595	0.00622	0.00630
	A1	0.01056	0.01085	0.01090
	A2	0.00650	0.00683	0.00691
	A2	0.01176	0.01209	0.01214
	B1	0.00648	0.00671	0.00677
	B1	0.01115	0.01141	0.01142

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00063	0.00063	0.00063
	(A2 * B1 * X)	-0.00081	-0.00082	-0.00081
	(!A2 * B1 * X)	0.00058	0.00059	0.00058
	(!A2 * B1 * X)	-0.00085	-0.00085	-0.00085
	(!A2 * !B1 * !X)	0.00026	0.00026	0.00025
	(!A2 * !B1 * !X)	-0.00097	-0.00097	-0.00098
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00077	0.00076	0.00076
	(A2 * B1 * X)	-0.00081	-0.00083	-0.00082
	(!A2 * B1 * X)	0.00070	0.00071	0.00071
	(!A2 * B1 * X)	-0.00086	-0.00087	-0.00086
	(!A2 * !B1 * !X)	0.00032	0.00032	0.00031
	(!A2 * !B1 * !X)	-0.00100	-0.00101	-0.00102
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00137	0.00136	0.00136
	(A2 * B1 * X)	-0.00161	-0.00164	-0.00162
	(!A2 * B1 * X)	0.00127	0.00128	0.00127
	(!A2 * B1 * X)	-0.00170	-0.00170	-0.00170
	(!A2 * !B1 * !X)	0.00057	0.00057	0.00054
	(!A2 * !B1 * !X)	-0.00198	-0.00200	-0.00204

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00063	-0.00063	-0.00063
	(A2 * B1 * X)	0.00082	0.00082	0.00081
	(!A2 * B1 * X)	-0.00058	-0.00059	-0.00058
	(!A2 * B1 * X)	0.00086	0.00086	0.00085
	(!A2 * !B1 * !X)	-0.00025	-0.00025	-0.00025
	(!A2 * !B1 * !X)	0.00099	0.00099	0.00098
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A2 * B1 * X)	0.00083	0.00083	0.00082
	(!A2 * B1 * X)	-0.00070	-0.00071	-0.00071
	(!A2 * B1 * X)	0.00087	0.00088	0.00086
	(!A2 * !B1 * !X)	-0.00031	-0.00030	-0.00030
	(!A2 * !B1 * !X)	0.00103	0.00102	0.00102
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00136	-0.00136	-0.00136
	(A2 * B1 * X)	0.00164	0.00164	0.00162
	(!A2 * B1 * X)	-0.00125	-0.00128	-0.00127
	(!A2 * B1 * X)	0.00170	0.00171	0.00170
	(!A2 * !B1 * !X)	-0.00053	-0.00053	-0.00052
	(!A2 * !B1 * !X)	0.00206	0.00205	0.00204

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00081	0.00081	0.00080
	(A1 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * B1 * X)	0.00076	0.00076	0.00076
	(!A1 * B1 * X)	-0.00084	-0.00084	-0.00083
	(!A1 * !B1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !B1 * !X)	-0.00083	-0.00084	-0.00083
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00081	0.00081	0.00080
	(A1 * B1 * X)	-0.00081	-0.00083	-0.00082
	(!A1 * B1 * X)	0.00076	0.00076	0.00075
	(!A1 * B1 * X)	-0.00086	-0.00086	-0.00086
	(!A1 * !B1 * !X)	0.00075	0.00076	0.00075
	(!A1 * !B1 * !X)	-0.00086	-0.00086	-0.00086
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00134	0.00134	0.00133
	(A1 * B1 * X)	-0.00161	-0.00163	-0.00162
	(!A1 * B1 * X)	0.00125	0.00125	0.00124
	(!A1 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * !B1 * !X)	0.00124	0.00124	0.00124
	(!A1 * !B1 * !X)	-0.00170	-0.00170	-0.00170

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * B1 * X)	0.00080	0.00081	0.00080
	(!A1 * B1 * X)	-0.00075	-0.00076	-0.00076
	(!A1 * B1 * X)	0.00084	0.00084	0.00084
	(!A1 * !B1 * !X)	-0.00075	-0.00076	-0.00076
	(!A1 * !B1 * !X)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * B1 * X)	0.00082	0.00083	0.00082
	(!A1 * B1 * X)	-0.00074	-0.00076	-0.00075
	(!A1 * B1 * X)	0.00086	0.00087	0.00086
	(!A1 * !B1 * !X)	-0.00074	-0.00076	-0.00075
	(!A1 * !B1 * !X)	0.00086	0.00087	0.00086
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00133	-0.00134	-0.00133
	(A1 * B1 * X)	0.00163	0.00163	0.00162
	(!A1 * B1 * X)	-0.00123	-0.00125	-0.00124
	(!A1 * B1 * X)	0.00171	0.00171	0.00170
	(!A1 * !B1 * !X)	-0.00122	-0.00124	-0.00124
	(!A1 * !B1 * !X)	0.00171	0.00171	0.00170

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00078	0.00077	0.00077
	(A1 * A2 * X)	-0.00056	-0.00055	-0.00055
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00092	0.00092	0.00092
	(A1 * A2 * X)	-0.00055	-0.00055	-0.00055
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00159	0.00160	0.00159
	(A1 * A2 * X)	-0.00113	-0.00113	-0.00113

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00070	-0.00071	-0.00076
	(A1 * A2 * X)	0.00061	0.00061	0.00057
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00085	-0.00086	-0.00091
	(A1 * A2 * X)	0.00061	0.00061	0.00056
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00145	-0.00147	-0.00158
	(A1 * A2 * X)	0.00125	0.00125	0.00115

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	B2	C1	Y
0	x	0	x	0	1
0	x	x	x	1	0
0	x	1	0	0	1
x	x	1	1	x	0
1	0	0	x	0	1
1	0	x	x	1	0
1	0	1	0	0	1
1	1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221oi_1	12.78720
sky130_fd_sc_hs__a221oi_2	19.18080
sky130_fd_sc_hs__a221oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__a221oi_1	0.00246	0.00239	0.00253	0.00259	0.00267	0.04300
sky130_fd_sc_hs__a221oi_2	0.00526	0.00465	0.00520	0.00462	0.00487	0.08202
sky130_fd_sc_hs__a221oi_4	0.00960	0.00939	0.00955	0.00907	0.00963	0.15687

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.00007	0.00014
sky130_fd_sc_hs__a221oi_2	0.00000	0.00014	0.00029
sky130_fd_sc_hs__a221oi_4	0.00000	0.00027	0.00057

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (FR)	1.43778	3.75083	14.57980
	A2->Y (FR)	1.62275	3.95634	14.80530
	B1->Y (FR)	1.30533	3.56324	14.41010
	B2->Y (FR)	1.50888	3.78636	14.70300
	C1->Y (FR)	1.22945	3.39815	13.79890
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	1.23677	3.25079	14.32180
	A2->Y (FR)	1.50730	3.55978	14.78150
	B1->Y (FR)	1.16633	3.14019	14.37610
	B2->Y (FR)	1.38231	3.38297	14.66330
	C1->Y (FR)	1.09332	2.99604	13.79850
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	1.25872	3.04385	14.44990
	A2->Y (FR)	1.50448	3.31676	14.79100
	B1->Y (FR)	1.11606	2.84791	14.30470
	B2->Y (FR)	1.36891	3.13318	14.69100
	C1->Y (FR)	1.09027	2.71919	13.82050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.08371	0.75225	4.10511
	A2->Y (RF)	0.08936	0.74669	4.14275
	B1->Y (RF)	0.08675	0.74034	4.08163
	B2->Y (RF)	0.09384	0.74209	4.12892
	C1->Y (RF)	0.06725	0.65358	3.74174
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.07522	0.70717	4.09194
	A2->Y (RF)	0.08444	0.71469	4.15051
	B1->Y (RF)	0.07721	0.68811	4.04643
	B2->Y (RF)	0.08516	0.70038	4.10966
	C1->Y (RF)	0.06224	0.61171	3.72422
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.07635	0.68810	4.15598
	A2->Y (RF)	0.08463	0.68241	4.11447
	B1->Y (RF)	0.08011	0.67302	4.11675
	B2->Y (RF)	0.08815	0.67174	4.07889
	C1->Y (RF)	0.05939	0.57497	3.68158

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00105	0.00096	0.00095
	A1	0.00456	0.00446	0.00444
	A2	0.00120	0.00114	0.00113
	A2	0.00517	0.00510	0.00507
	B1	0.00106	0.00096	0.00094
	B1	0.00417	0.00408	0.00397
	B2	0.00126	0.00119	0.00118
	B2	0.00483	0.00474	0.00472
	C1	0.00123	0.00113	0.00111
	C1	0.00448	0.00439	0.00436
sky130_fd_sc_hs__a221oi_2	A1	0.00118	0.00100	0.00098
	A1	0.00843	0.00824	0.00820
	A2	0.00187	0.00173	0.00170
	A2	0.00964	0.00949	0.00944
	B1	0.00135	0.00116	0.00114
	B1	0.00770	0.00750	0.00747
	B2	0.00187	0.00173	0.00170
	B2	0.00881	0.00866	0.00847
	C1	0.00181	0.00163	0.00160
	C1	0.00817	0.00798	0.00794

sky130_fd_sc_hs__a221oi_4	**A1**	0.00214	0.00175	0.00171
	A1	0.01639	0.01598	0.01592
	A2	0.00323	0.00294	0.00289
	A2	0.01909	0.01880	0.01870
	B1	0.00204	0.00166	0.00162
	B1	0.01473	0.01433	0.01428
	B2	0.00321	0.00293	0.00289
	B2	0.01750	0.01723	0.01715
	C1	0.00313	0.00279	0.00274
	C1	0.01583	0.01544	0.01538

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.00439	0.00433	0.00417
	A1	0.00115	0.00109	0.00095
	A2	0.00487	0.00481	0.00463
	A2	0.00115	0.00108	0.00094
	B1	0.00353	0.00349	0.00340
	B1	0.00043	0.00039	0.00031
	B2	0.00398	0.00395	0.00385
	B2	0.00041	0.00038	0.00030
	C1	0.00318	0.00317	0.00314
	C1	-0.00014	-0.00016	-0.00020

sky130_fd_sc_hs__a221oi_2	**A1**	0.00828	0.00815	0.00785
	A1	0.00156	0.00142	0.00117
	A2	0.00897	0.00885	0.00854
	A2	0.00163	0.00151	0.00125
	B1	0.00665	0.00657	0.00640
	B1	0.00036	0.00026	0.00011
	B2	0.00742	0.00736	0.00718
	B2	0.00045	0.00037	0.00023
	C1	0.00584	0.00581	0.00577
	C1	-0.00064	-0.00070	-0.00073
sky130_fd_sc_hs__a221oi_4	**A1**	0.01680	0.01652	0.01595
	A1	0.00359	0.00330	0.00282
	A2	0.01855	0.01830	0.01767
	A2	0.00356	0.00329	0.00279
	B1	0.01358	0.01340	0.01308
	B1	0.00106	0.00083	0.00060
	B2	0.01537	0.01520	0.01490
	B2	0.00104	0.00089	0.00063
	C1	0.01209	0.01198	0.01196
	C1	-0.00089	-0.00103	-0.00106

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A2 * B1 * B2 * C1 * !Y)**	0.00075	0.00075	0.00075
	(A2 * B1 * B2 * C1 * !Y)	-0.00086	-0.00088	-0.00088
	(A2 * B1 * B2 * !C1 * !Y)	0.00075	0.00075	0.00075
	(A2 * B1 * B2 * !C1 * !Y)	-0.00087	-0.00088	-0.00088
	(A2 * B1 * !B2 * C1 * !Y)	0.00075	0.00076	0.00075
	(A2 * B1 * !B2 * C1 * !Y)	-0.00083	-0.00085	-0.00084
	(A2 * !B1 * C1 * !Y)	0.00075	0.00076	0.00075
	(A2 * !B1 * C1 * !Y)	-0.00083	-0.00085	-0.00084
	(!A2 * B1 * B2 * C1 * !Y)	0.00069	0.00070	0.00070
	(!A2 * B1 * B2 * C1 * !Y)	-0.00091	-0.00091	-0.00091
	(!A2 * B1 * B2 * !C1 * !Y)	0.00069	0.00070	0.00069
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00091	-0.00092	-0.00091
	(!A2 * B1 * !B2 * C1 * !Y)	0.00069	0.00069	0.00070
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00091	-0.00091	-0.00091
	(!A2 * B1 * !B2 * !C1 * Y)	0.00029	0.00030	0.00029
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00105	-0.00107	-0.00107
	(!A2 * !B1 * C1 * !Y)	0.00069	0.00070	0.00070
	(!A2 * !B1 * C1 * !Y)	-0.00091	-0.00092	-0.00091
	(!A2 * !B1 * !C1 * Y)	0.00030	0.00030	0.00029
	(!A2 * !B1 * !C1 * Y)	-0.00106	-0.00107	-0.00107

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00160	0.00161	0.00160
	(A2 * B1 * B2 * C1 * !Y)	-0.00184	-0.00187	-0.00185
	(A2 * B1 * B2 * !C1 * !Y)	0.00160	0.00160	0.00160
	(A2 * B1 * B2 * !C1 * !Y)	-0.00184	-0.00188	-0.00185
	(A2 * B1 * !B2 * C1 * !Y)	0.00160	0.00160	0.00160
	(A2 * B1 * !B2 * C1 * !Y)	-0.00177	-0.00180	-0.00179
	(A2 * !B1 * C1 * !Y)	0.00160	0.00160	0.00160
	(A2 * !B1 * C1 * !Y)	-0.00177	-0.00180	-0.00179
	(!A2 * B1 * B2 * C1 * !Y)	0.00152	0.00153	0.00152
	(!A2 * B1 * B2 * C1 * !Y)	-0.00196	-0.00196	-0.00195
	(!A2 * B1 * B2 * !C1 * !Y)	0.00151	0.00152	0.00151
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00195	-0.00195	-0.00195
	(!A2 * B1 * !B2 * C1 * !Y)	0.00152	0.00152	0.00152
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00195	-0.00196	-0.00195
	(!A2 * B1 * !B2 * !C1 * Y)	0.00068	0.00068	0.00065
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00230	-0.00232	-0.00236
	(!A2 * !B1 * C1 * !Y)	0.00152	0.00152	0.00152
	(!A2 * !B1 * C1 * !Y)	-0.00195	-0.00195	-0.00195
	(!A2 * !B1 * !C1 * Y)	0.00068	0.00068	0.00065
	(!A2 * !B1 * !C1 * Y)	-0.00230	-0.00232	-0.00236

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00305	0.00309	0.00307
	(A2 * B1 * B2 * C1 * !Y)	-0.00350	-0.00359	-0.00357
	(A2 * B1 * B2 * !C1 * !Y)	0.00305	0.00309	0.00307
	(A2 * B1 * B2 * !C1 * !Y)	-0.00350	-0.00361	-0.00356
	(A2 * B1 * !B2 * C1 * !Y)	0.00308	0.00308	0.00307
	(A2 * B1 * !B2 * C1 * !Y)	-0.00338	-0.00344	-0.00341
	(A2 * !B1 * C1 * !Y)	0.00308	0.00308	0.00307
	(A2 * !B1 * C1 * !Y)	-0.00338	-0.00344	-0.00341
	(!A2 * B1 * B2 * C1 * !Y)	0.00289	0.00291	0.00289
	(!A2 * B1 * B2 * C1 * !Y)	-0.00370	-0.00372	-0.00370
	(!A2 * B1 * B2 * !C1 * !Y)	0.00288	0.00290	0.00288
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00370	-0.00371	-0.00370
	(!A2 * B1 * !B2 * C1 * !Y)	0.00287	0.00289	0.00288
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00373	-0.00375	-0.00374
	(!A2 * B1 * !B2 * !C1 * Y)	0.00123	0.00123	0.00117
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00442	-0.00445	-0.00452
	(!A2 * !B1 * C1 * !Y)	0.00287	0.00290	0.00288
	(!A2 * !B1 * C1 * !Y)	-0.00373	-0.00375	-0.00374
	(!A2 * !B1 * !C1 * Y)	0.00123	0.00123	0.00117
	(!A2 * !B1 * !C1 * Y)	-0.00442	-0.00445	-0.00452

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A2 * B1 * B2 * C1 * !Y)**	-0.00075	-0.00075	-0.00075
	(A2 * B1 * B2 * C1 * !Y)	0.00088	0.00088	0.00088
	(A2 * B1 * B2 * !C1 * !Y)	-0.00075	-0.00075	-0.00075
	(A2 * B1 * B2 * !C1 * !Y)	0.00088	0.00088	0.00088
	(A2 * B1 * !B2 * C1 * !Y)	-0.00075	-0.00075	-0.00075
	(A2 * B1 * !B2 * C1 * !Y)	0.00085	0.00085	0.00084
	(A2 * !B1 * C1 * !Y)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * C1 * !Y)	0.00085	0.00085	0.00084
	(!A2 * B1 * B2 * C1 * !Y)	-0.00069	-0.00070	-0.00070
	(!A2 * B1 * B2 * C1 * !Y)	0.00092	0.00092	0.00091
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00068	-0.00070	-0.00069
	(!A2 * B1 * B2 * !C1 * !Y)	0.00092	0.00092	0.00091
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00068	-0.00069	-0.00070
	(!A2 * B1 * !B2 * C1 * !Y)	0.00091	0.00092	0.00091
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * B1 * !B2 * !C1 * Y)	0.00108	0.00108	0.00107
	(!A2 * !B1 * C1 * !Y)	-0.00068	-0.00070	-0.00070
	(!A2 * !B1 * C1 * !Y)	0.00091	0.00092	0.00091
	(!A2 * !B1 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * Y)	0.00108	0.00108	0.00107

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00160	-0.00160	-0.00159
	(A2 * B1 * B2 * C1 * !Y)	0.00187	0.00187	0.00185
	(A2 * B1 * B2 * !C1 * !Y)	-0.00159	-0.00160	-0.00159
	(A2 * B1 * B2 * !C1 * !Y)	0.00185	0.00188	0.00185
	(A2 * B1 * !B2 * C1 * !Y)	-0.00160	-0.00160	-0.00160
	(A2 * B1 * !B2 * C1 * !Y)	0.00179	0.00180	0.00179
	(A2 * !B1 * C1 * !Y)	-0.00160	-0.00160	-0.00160
	(A2 * !B1 * C1 * !Y)	0.00181	0.00180	0.00179
	(!A2 * B1 * B2 * C1 * !Y)	-0.00150	-0.00153	-0.00152
	(!A2 * B1 * B2 * C1 * !Y)	0.00197	0.00197	0.00195
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00149	-0.00152	-0.00151
	(!A2 * B1 * B2 * !C1 * !Y)	0.00195	0.00195	0.00195
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00149	-0.00152	-0.00152
	(!A2 * B1 * !B2 * C1 * !Y)	0.00195	0.00197	0.00195
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00063	-0.00063	-0.00063
	(!A2 * B1 * !B2 * !C1 * Y)	0.00235	0.00237	0.00236
	(!A2 * !B1 * C1 * !Y)	-0.00150	-0.00152	-0.00152
	(!A2 * !B1 * C1 * !Y)	0.00197	0.00197	0.00195
	(!A2 * !B1 * !C1 * Y)	-0.00063	-0.00063	-0.00063
	(!A2 * !B1 * !C1 * Y)	0.00235	0.00237	0.00236

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00305	-0.00308	-0.00307
	(A2 * B1 * B2 * C1 * !Y)	0.00357	0.00359	0.00357
	(A2 * B1 * B2 * !C1 * !Y)	-0.00305	-0.00309	-0.00307
	(A2 * B1 * B2 * !C1 * !Y)	0.00357	0.00361	0.00356
	(A2 * B1 * !B2 * C1 * !Y)	-0.00306	-0.00308	-0.00307
	(A2 * B1 * !B2 * C1 * !Y)	0.00340	0.00344	0.00341
	(A2 * !B1 * C1 * !Y)	-0.00307	-0.00308	-0.00307
	(A2 * !B1 * C1 * !Y)	0.00341	0.00344	0.00341
	(!A2 * B1 * B2 * C1 * !Y)	-0.00283	-0.00291	-0.00289
	(!A2 * B1 * B2 * C1 * !Y)	0.00370	0.00374	0.00371
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00282	-0.00290	-0.00288
	(!A2 * B1 * B2 * !C1 * !Y)	0.00370	0.00373	0.00371
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00284	-0.00289	-0.00288
	(!A2 * B1 * !B2 * C1 * !Y)	0.00378	0.00375	0.00375
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00115	-0.00115	-0.00114
	(!A2 * B1 * !B2 * !C1 * Y)	0.00456	0.00454	0.00452
	(!A2 * !B1 * C1 * !Y)	-0.00282	-0.00290	-0.00288
	(!A2 * !B1 * C1 * !Y)	0.00375	0.00375	0.00375
	(!A2 * !B1 * !C1 * Y)	-0.00116	-0.00115	-0.00114
	(!A2 * !B1 * !C1 * Y)	0.00456	0.00454	0.00452

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * B1 * B2 * C1 * !Y)**	0.00080	0.00081	0.00080
	(A1 * B1 * B2 * C1 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * B1 * B2 * !C1 * !Y)	0.00080	0.00081	0.00080
	(A1 * B1 * B2 * !C1 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * B1 * !B2 * C1 * !Y)	0.00080	0.00080	0.00080
	(A1 * B1 * !B2 * C1 * !Y)	-0.00085	-0.00087	-0.00086
	(A1 * !B1 * C1 * !Y)	0.00080	0.00080	0.00080
	(A1 * !B1 * C1 * !Y)	-0.00085	-0.00087	-0.00086
	(!A1 * B1 * B2 * !Y)	0.00075	0.00075	0.00075
	(!A1 * B1 * B2 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00075	0.00076	0.00075
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * B1 * !B2 * !C1 * Y)	0.00075	0.00076	0.00075
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !B1 * !C1 * Y)	0.00075	0.00076	0.00075
	(!A1 * !B1 * !C1 * Y)	-0.00093	-0.00094	-0.00093

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00151	0.00152	0.00151
	(A1 * B1 * B2 * C1 * !Y)	-0.00169	-0.00173	-0.00171
	(A1 * B1 * B2 * !C1 * !Y)	0.00151	0.00152	0.00151
	(A1 * B1 * B2 * !C1 * !Y)	-0.00169	-0.00173	-0.00171
	(A1 * B1 * !B2 * C1 * !Y)	0.00152	0.00152	0.00152
	(A1 * B1 * !B2 * C1 * !Y)	-0.00164	-0.00167	-0.00166
	(A1 * !B1 * C1 * !Y)	0.00152	0.00152	0.00152
	(A1 * !B1 * C1 * !Y)	-0.00164	-0.00167	-0.00166
	(!A1 * B1 * B2 * !Y)	0.00144	0.00145	0.00143
	(!A1 * B1 * B2 * !Y)	-0.00179	-0.00180	-0.00179
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00144	0.00144	0.00143
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00179	-0.00180	-0.00179
	(!A1 * B1 * !B2 * !C1 * Y)	0.00135	0.00136	0.00135
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00186	-0.00188	-0.00187
	(!A1 * !B1 * !C1 * Y)	0.00134	0.00136	0.00135
	(!A1 * !B1 * !C1 * Y)	-0.00186	-0.00188	-0.00187

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00309	0.00313	0.00311
	(A1 * B1 * B2 * C1 * !Y)	-0.00353	-0.00361	-0.00359
	(A1 * B1 * B2 * !C1 * !Y)	0.00311	0.00313	0.00311
	(A1 * B1 * B2 * !C1 * !Y)	-0.00354	-0.00360	-0.00358
	(A1 * B1 * !B2 * C1 * !Y)	0.00312	0.00312	0.00311
	(A1 * B1 * !B2 * C1 * !Y)	-0.00340	-0.00345	-0.00343
	(A1 * !B1 * C1 * !Y)	0.00312	0.00312	0.00311
	(A1 * !B1 * C1 * !Y)	-0.00339	-0.00345	-0.00343
	(!A1 * B1 * B2 * !Y)	0.00295	0.00296	0.00293
	(!A1 * B1 * B2 * !Y)	-0.00373	-0.00374	-0.00372
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00291	0.00295	0.00293
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00375	-0.00378	-0.00377
	(!A1 * B1 * !B2 * !C1 * Y)	0.00273	0.00273	0.00271
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00400	-0.00400	-0.00398
	(!A1 * !B1 * !C1 * Y)	0.00273	0.00273	0.00271
	(!A1 * !B1 * !C1 * Y)	-0.00400	-0.00400	-0.00398

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * B1 * B2 * C1 * !Y)**	-0.00080	-0.00080	-0.00080
	(A1 * B1 * B2 * C1 * !Y)	0.00089	0.00090	0.00089
	(A1 * B1 * B2 * !C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * B2 * !C1 * !Y)	0.00090	0.00090	0.00089
	(A1 * B1 * !B2 * C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * !B2 * C1 * !Y)	0.00086	0.00087	0.00086
	(A1 * !B1 * C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * !B1 * C1 * !Y)	0.00086	0.00087	0.00086
	(!A1 * B1 * B2 * !Y)	-0.00074	-0.00075	-0.00075
	(!A1 * B1 * B2 * !Y)	0.00093	0.00094	0.00093
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00074	-0.00076	-0.00075
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00074	-0.00076	-0.00075
	(!A1 * B1 * !B2 * !C1 * Y)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !C1 * Y)	-0.00074	-0.00076	-0.00075
	(!A1 * !B1 * !C1 * Y)	0.00093	0.00094	0.00093

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00151	-0.00152	-0.00151
	(A1 * B1 * B2 * C1 * !Y)	0.00172	0.00173	0.00171
	(A1 * B1 * B2 * !C1 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * B1 * B2 * !C1 * !Y)	0.00172	0.00173	0.00171
	(A1 * B1 * !B2 * C1 * !Y)	-0.00152	-0.00152	-0.00151
	(A1 * B1 * !B2 * C1 * !Y)	0.00167	0.00167	0.00166
	(A1 * !B1 * C1 * !Y)	-0.00152	-0.00152	-0.00151
	(A1 * !B1 * C1 * !Y)	0.00166	0.00167	0.00166
	(!A1 * B1 * B2 * !Y)	-0.00142	-0.00145	-0.00143
	(!A1 * B1 * B2 * !Y)	0.00180	0.00181	0.00180
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00142	-0.00144	-0.00143
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00180	0.00181	0.00179
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00133	-0.00136	-0.00135
	(!A1 * B1 * !B2 * !C1 * Y)	0.00188	0.00189	0.00187
	(!A1 * !B1 * !C1 * Y)	-0.00133	-0.00136	-0.00135
	(!A1 * !B1 * !C1 * Y)	0.00188	0.00189	0.00187

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00309	-0.00311	-0.00310
	(A1 * B1 * B2 * C1 * !Y)	0.00361	0.00361	0.00359
	(A1 * B1 * B2 * !C1 * !Y)	-0.00311	-0.00311	-0.00310
	(A1 * B1 * B2 * !C1 * !Y)	0.00360	0.00360	0.00358
	(A1 * B1 * !B2 * C1 * !Y)	-0.00311	-0.00311	-0.00310
	(A1 * B1 * !B2 * C1 * !Y)	0.00345	0.00345	0.00343
	(A1 * !B1 * C1 * !Y)	-0.00309	-0.00311	-0.00310
	(A1 * !B1 * C1 * !Y)	0.00342	0.00345	0.00343
	(!A1 * B1 * B2 * !Y)	-0.00289	-0.00296	-0.00293
	(!A1 * B1 * B2 * !Y)	0.00374	0.00376	0.00373
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00289	-0.00295	-0.00293
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00379	0.00381	0.00378
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00268	-0.00273	-0.00271
	(!A1 * B1 * !B2 * !C1 * Y)	0.00403	0.00404	0.00399
	(!A1 * !B1 * !C1 * Y)	-0.00268	-0.00273	-0.00271
	(!A1 * !B1 * !C1 * Y)	0.00403	0.00404	0.00399

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * A2 * B2 * C1 * !Y)**	0.00077	0.00077	0.00077
	(A1 * A2 * B2 * C1 * !Y)	-0.00073	-0.00073	-0.00072
	(A1 * A2 * B2 * !C1 * !Y)	0.00077	0.00077	0.00077
	(A1 * A2 * B2 * !C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !B2 * C1 * !Y)	0.00072	0.00073	0.00072
	(A1 * A2 * !B2 * C1 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !B2 * !C1 * !Y)	0.00071	0.00072	0.00071
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * B2 * C1 * !Y)	0.00077	0.00077	0.00077
	(A1 * !A2 * B2 * C1 * !Y)	-0.00087	-0.00089	-0.00088
	(A1 * !A2 * !B2 * C1 * !Y)	0.00071	0.00072	0.00071
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * !B2 * !C1 * Y)	0.00030	0.00030	0.00029
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00109	-0.00110	-0.00110
	(!A1 * B2 * C1 * !Y)	0.00077	0.00077	0.00077
	(!A1 * B2 * C1 * !Y)	-0.00087	-0.00089	-0.00088
	(!A1 * !B2 * C1 * !Y)	0.00071	0.00072	0.00071
	(!A1 * !B2 * C1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A1 * !B2 * !C1 * Y)	0.00030	0.00030	0.00029
	(!A1 * !B2 * !C1 * Y)	-0.00109	-0.00110	-0.00110

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00156	0.00157	0.00156
	(A1 * A2 * B2 * C1 * !Y)	-0.00148	-0.00148	-0.00147
	(A1 * A2 * B2 * !C1 * !Y)	0.00156	0.00156	0.00155
	(A1 * A2 * B2 * !C1 * !Y)	-0.00140	-0.00140	-0.00139
	(A1 * A2 * !B2 * C1 * !Y)	0.00146	0.00147	0.00146
	(A1 * A2 * !B2 * C1 * !Y)	-0.00143	-0.00144	-0.00143
	(A1 * A2 * !B2 * !C1 * !Y)	0.00146	0.00147	0.00146
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00139	-0.00139	-0.00139
	(A1 * !A2 * B2 * C1 * !Y)	0.00156	0.00156	0.00155
	(A1 * !A2 * B2 * C1 * !Y)	-0.00182	-0.00186	-0.00184
	(A1 * !A2 * !B2 * C1 * !Y)	0.00146	0.00145	0.00145
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00192	-0.00192	-0.00191
	(A1 * !A2 * !B2 * !C1 * Y)	0.00061	0.00061	0.00059
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00226	-0.00228	-0.00230
	(!A1 * B2 * C1 * !Y)	0.00156	0.00156	0.00155
	(!A1 * B2 * C1 * !Y)	-0.00182	-0.00186	-0.00184
	(!A1 * !B2 * C1 * !Y)	0.00146	0.00147	0.00145
	(!A1 * !B2 * C1 * !Y)	-0.00191	-0.00193	-0.00191
	(!A1 * !B2 * !C1 * Y)	0.00061	0.00061	0.00059
	(!A1 * !B2 * !C1 * Y)	-0.00226	-0.00228	-0.00231

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00306	0.00308	0.00306
	(A1 * A2 * B2 * C1 * !Y)	-0.00286	-0.00284	-0.00282
	(A1 * A2 * B2 * !C1 * !Y)	0.00307	0.00308	0.00305
	(A1 * A2 * B2 * !C1 * !Y)	-0.00266	-0.00266	-0.00265
	(A1 * A2 * !B2 * C1 * !Y)	0.00285	0.00288	0.00286
	(A1 * A2 * !B2 * C1 * !Y)	-0.00274	-0.00277	-0.00275
	(A1 * A2 * !B2 * !C1 * !Y)	0.00287	0.00289	0.00285
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00264	-0.00266	-0.00264
	(A1 * !A2 * B2 * C1 * !Y)	0.00306	0.00309	0.00305
	(A1 * !A2 * B2 * C1 * !Y)	-0.00342	-0.00350	-0.00346
	(A1 * !A2 * !B2 * C1 * !Y)	0.00284	0.00286	0.00285
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00370	-0.00372	-0.00370
	(A1 * !A2 * !B2 * !C1 * Y)	0.00121	0.00122	0.00116
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00434	-0.00438	-0.00445
	(!A1 * B2 * C1 * !Y)	0.00306	0.00309	0.00305
	(!A1 * B2 * C1 * !Y)	-0.00343	-0.00350	-0.00347
	(!A1 * !B2 * C1 * !Y)	0.00284	0.00286	0.00285
	(!A1 * !B2 * C1 * !Y)	-0.00370	-0.00372	-0.00370
	(!A1 * !B2 * !C1 * Y)	0.00121	0.00122	0.00116
	(!A1 * !B2 * !C1 * Y)	-0.00434	-0.00438	-0.00445

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * A2 * B2 * C1 * !Y)**	-0.00077	-0.00077	-0.00077
	(A1 * A2 * B2 * C1 * !Y)	0.00073	0.00073	0.00072
	(A1 * A2 * B2 * !C1 * !Y)	-0.00076	-0.00076	-0.00076
	(A1 * A2 * B2 * !C1 * !Y)	0.00069	0.00069	0.00069
	(A1 * A2 * !B2 * C1 * !Y)	-0.00071	-0.00073	-0.00072
	(A1 * A2 * !B2 * C1 * !Y)	0.00070	0.00070	0.00070
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00070	-0.00072	-0.00071
	(A1 * A2 * !B2 * !C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * !A2 * B2 * C1 * !Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * B2 * C1 * !Y)	0.00089	0.00089	0.00088
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00070	-0.00072	-0.00071
	(A1 * !A2 * !B2 * C1 * !Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00029	-0.00028	-0.00028
	(A1 * !A2 * !B2 * !C1 * Y)	0.00111	0.00110	0.00110
	(!A1 * B2 * C1 * !Y)	-0.00077	-0.00077	-0.00077
	(!A1 * B2 * C1 * !Y)	0.00089	0.00089	0.00088
	(!A1 * !B2 * C1 * !Y)	-0.00070	-0.00072	-0.00071
	(!A1 * !B2 * C1 * !Y)	0.00092	0.00093	0.00092
	(!A1 * !B2 * !C1 * Y)	-0.00029	-0.00028	-0.00028
	(!A1 * !B2 * !C1 * Y)	0.00111	0.00110	0.00110

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00156	-0.00156	-0.00155
	(A1 * A2 * B2 * C1 * !Y)	0.00148	0.00148	0.00147
	(A1 * A2 * B2 * !C1 * !Y)	-0.00154	-0.00155	-0.00155
	(A1 * A2 * B2 * !C1 * !Y)	0.00140	0.00142	0.00142
	(A1 * A2 * !B2 * C1 * !Y)	-0.00144	-0.00147	-0.00146
	(A1 * A2 * !B2 * C1 * !Y)	0.00143	0.00144	0.00143
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00143	-0.00147	-0.00146
	(A1 * A2 * !B2 * !C1 * !Y)	0.00139	0.00139	0.00139
	(A1 * !A2 * B2 * C1 * !Y)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * B2 * C1 * !Y)	0.00183	0.00186	0.00184
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00143	-0.00145	-0.00145
	(A1 * !A2 * !B2 * C1 * !Y)	0.00192	0.00194	0.00192
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00058	-0.00058	-0.00057
	(A1 * !A2 * !B2 * !C1 * Y)	0.00233	0.00231	0.00230
	(!A1 * B2 * C1 * !Y)	-0.00155	-0.00156	-0.00155
	(!A1 * B2 * C1 * !Y)	0.00183	0.00186	0.00184
	(!A1 * !B2 * C1 * !Y)	-0.00142	-0.00147	-0.00145
	(!A1 * !B2 * C1 * !Y)	0.00191	0.00193	0.00192
	(!A1 * !B2 * !C1 * Y)	-0.00058	-0.00058	-0.00057
	(!A1 * !B2 * !C1 * Y)	0.00233	0.00231	0.00231

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00306	-0.00306	-0.00305
	(A1 * A2 * B2 * C1 * !Y)	0.00286	0.00284	0.00282
	(A1 * A2 * B2 * !C1 * !Y)	-0.00304	-0.00305	-0.00303
	(A1 * A2 * B2 * !C1 * !Y)	0.00275	0.00276	0.00272
	(A1 * A2 * !B2 * C1 * !Y)	-0.00280	-0.00288	-0.00286
	(A1 * A2 * !B2 * C1 * !Y)	0.00274	0.00277	0.00275
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00279	-0.00289	-0.00285
	(A1 * A2 * !B2 * !C1 * !Y)	0.00264	0.00266	0.00264
	(A1 * !A2 * B2 * C1 * !Y)	-0.00305	-0.00307	-0.00305
	(A1 * !A2 * B2 * C1 * !Y)	0.00346	0.00350	0.00346
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00280	-0.00286	-0.00285
	(A1 * !A2 * !B2 * C1 * !Y)	0.00373	0.00372	0.00371
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00115	-0.00113	-0.00113
	(A1 * !A2 * !B2 * !C1 * Y)	0.00449	0.00446	0.00445
	(!A1 * B2 * C1 * !Y)	-0.00305	-0.00307	-0.00305
	(!A1 * B2 * C1 * !Y)	0.00347	0.00350	0.00347
	(!A1 * !B2 * C1 * !Y)	-0.00280	-0.00286	-0.00285
	(!A1 * !B2 * C1 * !Y)	0.00373	0.00372	0.00371
	(!A1 * !B2 * !C1 * Y)	-0.00115	-0.00114	-0.00113
	(!A1 * !B2 * !C1 * Y)	0.00449	0.00446	0.00445

Passive power(pJ) for B2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * A2 * B1 * C1 * !Y)**	0.00079	0.00080	0.00080
	(A1 * A2 * B1 * C1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * A2 * B1 * !C1 * !Y)	0.00081	0.00080	0.00079
	(A1 * A2 * B1 * !C1 * !Y)	-0.00071	-0.00070	-0.00070
	(A1 * A2 * !B1 * C1 * !Y)	0.00074	0.00075	0.00074
	(A1 * A2 * !B1 * C1 * !Y)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * !B1 * !C1 * !Y)	0.00074	0.00075	0.00074
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00070	-0.00070	-0.00069
	(A1 * !A2 * B1 * C1 * !Y)	0.00080	0.00080	0.00079
	(A1 * !A2 * B1 * C1 * !Y)	-0.00090	-0.00092	-0.00091
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00074	0.00075	0.00074
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00095	-0.00096	-0.00095
	(A1 * !A2 * !B1 * !C1 * Y)	0.00068	0.00069	0.00068
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00101	-0.00102	-0.00101
	(!A1 * B1 * C1 * !Y)	0.00080	0.00080	0.00079
	(!A1 * B1 * C1 * !Y)	-0.00090	-0.00092	-0.00091
	(!A1 * !B1 * !C1 * Y)	0.00068	0.00069	0.00068
	(!A1 * !B1 * !C1 * Y)	-0.00101	-0.00102	-0.00101

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00151	0.00152	0.00151
	(A1 * A2 * B1 * C1 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * B1 * !C1 * !Y)	0.00151	0.00151	0.00151
	(A1 * A2 * B1 * !C1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * A2 * !B1 * C1 * !Y)	0.00141	0.00141	0.00141
	(A1 * A2 * !B1 * C1 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * A2 * !B1 * !C1 * !Y)	0.00141	0.00142	0.00141
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * B1 * C1 * !Y)	0.00151	0.00152	0.00151
	(A1 * !A2 * B1 * C1 * !Y)	-0.00169	-0.00173	-0.00171
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00141	0.00142	0.00141
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !C1 * Y)	0.00135	0.00136	0.00134
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00185	-0.00185	-0.00184
	(!A1 * B1 * C1 * !Y)	0.00151	0.00152	0.00151
	(!A1 * B1 * C1 * !Y)	-0.00169	-0.00173	-0.00171
	(!A1 * !B1 * !C1 * Y)	0.00135	0.00136	0.00134
	(!A1 * !B1 * !C1 * Y)	-0.00185	-0.00185	-0.00184

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00307	0.00309	0.00307
	(A1 * A2 * B1 * C1 * !Y)	-0.00283	-0.00284	-0.00282
	(A1 * A2 * B1 * !C1 * !Y)	0.00307	0.00309	0.00306
	(A1 * A2 * B1 * !C1 * !Y)	-0.00265	-0.00266	-0.00265
	(A1 * A2 * !B1 * C1 * !Y)	0.00284	0.00287	0.00285
	(A1 * A2 * !B1 * C1 * !Y)	-0.00273	-0.00277	-0.00275
	(A1 * A2 * !B1 * !C1 * !Y)	0.00287	0.00290	0.00285
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00263	-0.00266	-0.00264
	(A1 * !A2 * B1 * C1 * !Y)	0.00308	0.00310	0.00306
	(A1 * !A2 * B1 * C1 * !Y)	-0.00343	-0.00348	-0.00347
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00284	0.00288	0.00284
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00369	-0.00373	-0.00370
	(A1 * !A2 * !B1 * !C1 * Y)	0.00285	0.00284	0.00283
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00370	-0.00372	-0.00371
	(!A1 * B1 * C1 * !Y)	0.00308	0.00310	0.00306
	(!A1 * B1 * C1 * !Y)	-0.00343	-0.00349	-0.00347
	(!A1 * !B1 * !C1 * Y)	0.00285	0.00284	0.00283
	(!A1 * !B1 * !C1 * Y)	-0.00370	-0.00372	-0.00371

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221oi_1	**(A1 * A2 * B1 * C1 * !Y)**	-0.00079	-0.00080	-0.00079
	(A1 * A2 * B1 * C1 * !Y)	0.00075	0.00075	0.00075
	(A1 * A2 * B1 * !C1 * !Y)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * B1 * !C1 * !Y)	0.00072	0.00072	0.00071
	(A1 * A2 * !B1 * C1 * !Y)	-0.00073	-0.00075	-0.00074
	(A1 * A2 * !B1 * C1 * !Y)	0.00072	0.00073	0.00072
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00073	-0.00075	-0.00074
	(A1 * A2 * !B1 * !C1 * !Y)	0.00070	0.00070	0.00069
	(A1 * !A2 * B1 * C1 * !Y)	-0.00080	-0.00080	-0.00079
	(A1 * !A2 * B1 * C1 * !Y)	0.00092	0.00092	0.00091
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00073	-0.00075	-0.00074
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00067	-0.00069	-0.00068
	(A1 * !A2 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(!A1 * B1 * C1 * !Y)	-0.00080	-0.00080	-0.00079
	(!A1 * B1 * C1 * !Y)	0.00092	0.00092	0.00091
	(!A1 * !B1 * !C1 * Y)	-0.00067	-0.00069	-0.00068
	(!A1 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00150	-0.00151	-0.00151
	(A1 * A2 * B1 * C1 * !Y)	0.00138	0.00139	0.00138
	(A1 * A2 * B1 * !C1 * !Y)	-0.00150	-0.00150	-0.00150
	(A1 * A2 * B1 * !C1 * !Y)	0.00131	0.00131	0.00132
	(A1 * A2 * !B1 * C1 * !Y)	-0.00139	-0.00141	-0.00141
	(A1 * A2 * !B1 * C1 * !Y)	0.00134	0.00135	0.00134
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00139	-0.00142	-0.00141
	(A1 * A2 * !B1 * !C1 * !Y)	0.00129	0.00129	0.00128
	(A1 * !A2 * B1 * C1 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * !A2 * B1 * C1 * !Y)	0.00172	0.00173	0.00171
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00139	-0.00142	-0.00141
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00179	0.00179	0.00178
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00132	-0.00136	-0.00134
	(A1 * !A2 * !B1 * !C1 * Y)	0.00185	0.00185	0.00184
	(!A1 * B1 * C1 * !Y)	-0.00151	-0.00152	-0.00151
	(!A1 * B1 * C1 * !Y)	0.00172	0.00173	0.00171
	(!A1 * !B1 * !C1 * Y)	-0.00132	-0.00136	-0.00134
	(!A1 * !B1 * !C1 * Y)	0.00185	0.00185	0.00184

	(A1 * A2 * B1 * C1 * !Y)	-0.00307	-0.00307	-0.00306
	(A1 * A2 * B1 * C1 * !Y)	0.00283	0.00284	0.00282
	(A1 * A2 * B1 * !C1 * !Y)	-0.00303	-0.00305	-0.00304
	(A1 * A2 * B1 * !C1 * !Y)	0.00273	0.00276	0.00272
	(A1 * A2 * !B1 * C1 * !Y)	-0.00279	-0.00287	-0.00285
	(A1 * A2 * !B1 * C1 * !Y)	0.00273	0.00277	0.00275
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00279	-0.00288	-0.00285
	(A1 * A2 * !B1 * !C1 * !Y)	0.00263	0.00266	0.00264
	(A1 * !A2 * B1 * C1 * !Y)	-0.00307	-0.00307	-0.00306
sky130_fd_sc_hs__a221oi_4	**(A1 * !A2 * B1 * C1 * !Y)**	0.00348	0.00348	0.00347
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00278	-0.00287	-0.00284
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00369	0.00373	0.00371
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00277	-0.00284	-0.00283
	(A1 * !A2 * !B1 * !C1 * Y)	0.00370	0.00373	0.00371
	(!A1 * B1 * C1 * !Y)	-0.00307	-0.00307	-0.00306
	(!A1 * B1 * C1 * !Y)	0.00348	0.00349	0.00347
	(!A1 * !B1 * !C1 * Y)	-0.00277	-0.00284	-0.00283
	(!A1 * !B1 * !C1 * Y)	0.00370	0.00373	0.00371

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	(A1 * B1 * B2 * !Y)	0.00094	0.00094	0.00094
	(A1 * B1 * B2 * !Y)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * B1 * !B2 * !Y)	0.00094	0.00094	0.00094
	(A1 * A2 * B1 * !B2 * !Y)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * !B1 * !Y)	0.00094	0.00094	0.00094
	(A1 * A2 * !B1 * !Y)	-0.00064	-0.00064	-0.00063
	(!A1 * B1 * B2 * !Y)	0.00094	0.00094	0.00094
	(!A1 * B1 * B2 * !Y)	-0.00064	-0.00064	-0.00063
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00175	0.00176	0.00175
	(A1 * B1 * B2 * !Y)	-0.00118	-0.00118	-0.00117
	(A1 * A2 * B1 * !B2 * !Y)	0.00175	0.00176	0.00175
	(A1 * A2 * B1 * !B2 * !Y)	-0.00118	-0.00118	-0.00117
	(A1 * A2 * !B1 * !Y)	0.00176	0.00176	0.00175
	(A1 * A2 * !B1 * !Y)	-0.00118	-0.00118	-0.00117
	(!A1 * B1 * B2 * !Y)	0.00176	0.00176	0.00175
	(!A1 * B1 * B2 * !Y)	-0.00118	-0.00118	-0.00118
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00347	0.00347	0.00345
	(A1 * B1 * B2 * !Y)	-0.00238	-0.00237	-0.00236
	(A1 * A2 * B1 * !B2 * !Y)	0.00346	0.00347	0.00345
	(A1 * A2 * B1 * !B2 * !Y)	-0.00236	-0.00237	-0.00236
	(A1 * A2 * !B1 * !Y)	0.00349	0.00347	0.00345
	(A1 * A2 * !B1 * !Y)	-0.00239	-0.00237	-0.00236
	(!A1 * B1 * B2 * !Y)	0.00343	0.00349	0.00345
	(!A1 * B1 * B2 * !Y)	-0.00235	-0.00239	-0.00237

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	(A1 * B1 * B2 * !Y)	-0.00087	-0.00088	-0.00093
	(A1 * B1 * B2 * !Y)	0.00070	0.00070	0.00065
	(A1 * A2 * B1 * !B2 * !Y)	-0.00074	-0.00075	-0.00090
	(A1 * A2 * B1 * !B2 * !Y)	0.00079	0.00078	0.00067
	(A1 * A2 * !B1 * !Y)	-0.00074	-0.00075	-0.00090
	(A1 * A2 * !B1 * !Y)	0.00079	0.00078	0.00067
	(!A1 * B1 * B2 * !Y)	-0.00086	-0.00087	-0.00093
	(!A1 * B1 * B2 * !Y)	0.00071	0.00070	0.00065
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00161	-0.00163	-0.00174
	(A1 * B1 * B2 * !Y)	0.00130	0.00130	0.00120
	(A1 * A2 * B1 * !B2 * !Y)	-0.00140	-0.00142	-0.00169
	(A1 * A2 * B1 * !B2 * !Y)	0.00145	0.00143	0.00123
	(A1 * A2 * !B1 * !Y)	-0.00140	-0.00142	-0.00169
	(A1 * A2 * !B1 * !Y)	0.00145	0.00143	0.00123
	(!A1 * B1 * B2 * !Y)	-0.00161	-0.00162	-0.00174
	(!A1 * B1 * B2 * !Y)	0.00132	0.00131	0.00121
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00322	-0.00325	-0.00344
	(A1 * B1 * B2 * !Y)	0.00256	0.00255	0.00240
	(A1 * A2 * B1 * !B2 * !Y)	-0.00277	-0.00281	-0.00334
	(A1 * A2 * B1 * !B2 * !Y)	0.00287	0.00286	0.00249
	(A1 * A2 * !B1 * !Y)	-0.00276	-0.00281	-0.00334
	(A1 * A2 * !B1 * !Y)	0.00287	0.00286	0.00249
	(!A1 * B1 * B2 * !Y)	-0.00319	-0.00323	-0.00344
	(!A1 * B1 * B2 * !Y)	0.00257	0.00257	0.00241

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	B2	C1	X
0	x	0	x	0	0
0	x	x	x	1	1
0	x	1	0	0	0
x	x	1	1	x	1
1	0	0	x	0	0
1	0	x	x	1	1
1	0	1	0	0	0
1	1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221o_1	14.38560
sky130_fd_sc_hs__a221o_2	14.38560
sky130_fd_sc_hs__a221o_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__a221o_1	0.00231	0.00240	0.00232	0.00230	0.00233	0.18888
sky130_fd_sc_hs__a221o_2	0.00242	0.00250	0.00252	0.00252	0.00248	0.37330
sky130_fd_sc_hs__a221o_4	0.00426	0.00422	0.00440	0.00447	0.00445	0.67667

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.00011	0.00018
sky130_fd_sc_hs__a221o_2	0.00000	0.00014	0.00023
sky130_fd_sc_hs__a221o_4	0.00000	0.00028	0.00045

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (RR)	0.30579	1.72188	9.90212
	A2->X (RR)	0.31335	1.72542	10.05640
	B1->X (RR)	0.29947	1.70468	9.83079
	B2->X (RR)	0.30650	1.70906	9.98468
	C1->X (RR)	0.24753	1.63236	9.73374
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.29825	1.55727	10.06370
	A2->X (RR)	0.30604	1.55069	10.17180
	B1->X (RR)	0.29389	1.54434	10.01140
	B2->X (RR)	0.30067	1.53884	10.12090
	C1->X (RR)	0.22925	1.46174	9.88895
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.33571	1.47767	10.10780
	A2->X (RR)	0.34547	1.45828	10.19600
	B1->X (RR)	0.32576	1.45537	10.03230
	B2->X (RR)	0.33599	1.44107	10.12940
	C1->X (RR)	0.23045	1.32987	9.84924

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	1.80806	2.96746	9.20004
	A2->X (FF)	1.99147	3.16025	9.40370
	B1->X (FF)	1.71190	2.81999	9.11460
	B2->X (FF)	1.87515	2.99882	9.31966
	C1->X (FF)	1.59510	2.60709	8.48515
sky130_fd_sc_hs__a221o_2	A1->X (FF)	2.42335	3.64736	10.08770
	A2->X (FF)	2.63205	3.87204	10.31760
	B1->X (FF)	2.35290	3.52481	10.04380
	B2->X (FF)	2.52954	3.71919	10.25270
	C1->X (FF)	2.25215	3.32683	9.40604
sky130_fd_sc_hs__a221o_4	A1->X (FF)	2.24263	3.39402	9.75958
	A2->X (FF)	2.46382	3.63412	10.01530
	B1->X (FF)	2.16478	3.26229	9.72256
	B2->X (FF)	2.36022	3.48253	9.95209
	C1->X (FF)	2.05866	3.05628	9.08778

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.00595	0.00591	0.00583
	A1	0.00284	0.00280	0.00273
	A2	0.00640	0.00638	0.00630
	A2	0.00285	0.00283	0.00276
	B1	0.00517	0.00516	0.00507
	B1	0.00224	0.00222	0.00214
	B2	0.00557	0.00557	0.00550
	B2	0.00227	0.00228	0.00221
	C1	0.00485	0.00479	0.00471
	C1	0.00176	0.00170	0.00163
sky130_fd_sc_hs__a221o_2	A1	0.00760	0.00762	0.00756
	A1	0.00419	0.00422	0.00416
	A2	0.00808	0.00812	0.00807
	A2	0.00420	0.00424	0.00419
	B1	0.00690	0.00697	0.00692
	B1	0.00360	0.00367	0.00363
	B2	0.00734	0.00743	0.00741
	B2	0.00366	0.00376	0.00374
	C1	0.00657	0.00660	0.00654
	C1	0.00315	0.00320	0.00314

sky130_fd_sc_hs__a221o_4	**A1**	0.01470	0.01475	0.01470
	A1	0.00874	0.00880	0.00877
	A2	0.01545	0.01558	0.01556
	A2	0.00875	0.00888	0.00889
	B1	0.01311	0.01323	0.01322
	B1	0.00746	0.00759	0.00758
	B2	0.01403	0.01423	0.01426
	B2	0.00750	0.00771	0.00774
	C1	0.01202	0.01203	0.01199
	C1	0.00625	0.00626	0.00622

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00241	0.00242	0.00242
	A1	0.00573	0.00573	0.00572
	A2	0.00253	0.00254	0.00230
	A2	0.00625	0.00625	0.00621
	B1	0.00242	0.00240	0.00217
	B1	0.00536	0.00534	0.00533
	B2	0.00257	0.00259	0.00259
	B2	0.00583	0.00585	0.00582
	C1	0.00246	0.00246	0.00244
	C1	0.00548	0.00548	0.00544

sky130_fd_sc_hs__a221o_2	**A1**	0.00401	0.00410	0.00377
	A1	0.00761	0.00770	0.00777
	A2	0.00417	0.00427	0.00430
	A2	0.00821	0.00830	0.00835
	B1	0.00400	0.00406	0.00362
	B1	0.00730	0.00736	0.00741
	B2	0.00418	0.00428	0.00435
	B2	0.00782	0.00791	0.00795
	C1	0.00416	0.00425	0.00429
	C1	0.00749	0.00757	0.00759
sky130_fd_sc_hs__a221o_4	**A1**	0.00707	0.00730	0.00621
	A1	0.01342	0.01365	0.01383
	A2	0.00765	0.00792	0.00762
	A2	0.01465	0.01491	0.01505
	B1	0.00721	0.00741	0.00756
	B1	0.01286	0.01305	0.01317
	B2	0.00751	0.00779	0.00727
	B2	0.01394	0.01421	0.01432
	C1	0.00777	0.00799	0.00794
	C1	0.01337	0.01358	0.01364

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A2 * B1 * B2 * C1 * X)**	0.00067	0.00067	0.00067
	(A2 * B1 * B2 * C1 * X)	-0.00082	-0.00084	-0.00083
	(A2 * B1 * B2 * !C1 * X)	0.00067	0.00067	0.00067
	(A2 * B1 * B2 * !C1 * X)	-0.00082	-0.00084	-0.00083
	(A2 * B1 * !B2 * C1 * X)	0.00067	0.00067	0.00067
	(A2 * B1 * !B2 * C1 * X)	-0.00079	-0.00081	-0.00081
	(A2 * !B1 * C1 * X)	0.00067	0.00067	0.00067
	(A2 * !B1 * C1 * X)	-0.00079	-0.00081	-0.00081
	(!A2 * B1 * B2 * C1 * X)	0.00063	0.00063	0.00063
	(!A2 * B1 * B2 * C1 * X)	-0.00087	-0.00088	-0.00087
	(!A2 * B1 * B2 * !C1 * X)	0.00062	0.00063	0.00063
	(!A2 * B1 * B2 * !C1 * X)	-0.00087	-0.00088	-0.00087
	(!A2 * B1 * !B2 * C1 * X)	0.00062	0.00063	0.00063
	(!A2 * B1 * !B2 * C1 * X)	-0.00087	-0.00087	-0.00087
	(!A2 * B1 * !B2 * !C1 * !X)	0.00027	0.00027	0.00026
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00103	-0.00103	-0.00104
	(!A2 * !B1 * C1 * X)	0.00062	0.00063	0.00063
	(!A2 * !B1 * C1 * X)	-0.00087	-0.00088	-0.00087
	(!A2 * !B1 * !C1 * !X)	0.00027	0.00027	0.00026
	(!A2 * !B1 * !C1 * !X)	-0.00103	-0.00103	-0.00104

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00077	0.00077	0.00077
	(A2 * B1 * B2 * C1 * X)	-0.00082	-0.00083	-0.00082
	(A2 * B1 * B2 * !C1 * X)	0.00077	0.00077	0.00077
	(A2 * B1 * B2 * !C1 * X)	-0.00082	-0.00083	-0.00082
	(A2 * B1 * !B2 * C1 * X)	0.00077	0.00077	0.00077
	(A2 * B1 * !B2 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A2 * !B1 * C1 * X)	0.00077	0.00077	0.00077
	(A2 * !B1 * C1 * X)	-0.00079	-0.00080	-0.00080
	(!A2 * B1 * B2 * C1 * X)	0.00072	0.00072	0.00072
	(!A2 * B1 * B2 * C1 * X)	-0.00086	-0.00087	-0.00086
	(!A2 * B1 * B2 * !C1 * X)	0.00071	0.00072	0.00072
	(!A2 * B1 * B2 * !C1 * X)	-0.00087	-0.00087	-0.00087
	(!A2 * B1 * !B2 * C1 * X)	0.00071	0.00072	0.00072
	(!A2 * B1 * !B2 * C1 * X)	-0.00086	-0.00087	-0.00087
	(!A2 * B1 * !B2 * !C1 * !X)	0.00030	0.00030	0.00029
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00103	-0.00104	-0.00105
	(!A2 * !B1 * C1 * X)	0.00071	0.00072	0.00072
	(!A2 * !B1 * C1 * X)	-0.00086	-0.00087	-0.00087
	(!A2 * !B1 * !C1 * !X)	0.00030	0.00030	0.00029
	(!A2 * !B1 * !C1 * !X)	-0.00104	-0.00104	-0.00105

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00153	0.00153	0.00152
	(A2 * B1 * B2 * C1 * X)	-0.00160	-0.00163	-0.00161
	(A2 * B1 * B2 * !C1 * X)	0.00153	0.00153	0.00152
	(A2 * B1 * B2 * !C1 * X)	-0.00160	-0.00163	-0.00161
	(A2 * B1 * !B2 * C1 * X)	0.00152	0.00152	0.00151
	(A2 * B1 * !B2 * C1 * X)	-0.00156	-0.00159	-0.00157
	(A2 * !B1 * C1 * X)	0.00152	0.00152	0.00151
	(A2 * !B1 * C1 * X)	-0.00156	-0.00159	-0.00157
	(!A2 * B1 * B2 * C1 * X)	0.00141	0.00142	0.00141
	(!A2 * B1 * B2 * C1 * X)	-0.00170	-0.00170	-0.00170
	(!A2 * B1 * B2 * !C1 * X)	0.00141	0.00141	0.00141
	(!A2 * B1 * B2 * !C1 * X)	-0.00170	-0.00170	-0.00170
	(!A2 * B1 * !B2 * C1 * X)	0.00141	0.00142	0.00141
	(!A2 * B1 * !B2 * C1 * X)	-0.00169	-0.00169	-0.00170
	(!A2 * B1 * !B2 * !C1 * !X)	0.00081	0.00080	0.00078
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00189	-0.00189	-0.00193
	(!A2 * !B1 * C1 * X)	0.00141	0.00142	0.00141
	(!A2 * !B1 * C1 * X)	-0.00169	-0.00170	-0.00170
	(!A2 * !B1 * !C1 * !X)	0.00081	0.00080	0.00078
	(!A2 * !B1 * !C1 * !X)	-0.00189	-0.00189	-0.00193

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A2 * B1 * B2 * C1 * X)**	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * C1 * X)	0.00084	0.00084	0.00083
	(A2 * B1 * B2 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * !C1 * X)	0.00084	0.00084	0.00083
	(A2 * B1 * !B2 * C1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * !B2 * C1 * X)	0.00081	0.00081	0.00081
	(A2 * !B1 * C1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * !B1 * C1 * X)	0.00081	0.00081	0.00081
	(!A2 * B1 * B2 * C1 * X)	-0.00062	-0.00063	-0.00063
	(!A2 * B1 * B2 * C1 * X)	0.00087	0.00088	0.00087
	(!A2 * B1 * B2 * !C1 * X)	-0.00062	-0.00063	-0.00063
	(!A2 * B1 * B2 * !C1 * X)	0.00088	0.00088	0.00087
	(!A2 * B1 * !B2 * C1 * X)	-0.00062	-0.00063	-0.00063
	(!A2 * B1 * !B2 * C1 * X)	0.00088	0.00088	0.00087
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00026	-0.00026	-0.00026
	(!A2 * B1 * !B2 * !C1 * !X)	0.00105	0.00104	0.00104
	(!A2 * !B1 * C1 * X)	-0.00061	-0.00063	-0.00063
	(!A2 * !B1 * C1 * X)	0.00087	0.00088	0.00087
	(!A2 * !B1 * !C1 * !X)	-0.00026	-0.00026	-0.00026
	(!A2 * !B1 * !C1 * !X)	0.00105	0.00104	0.00104

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00077	-0.00077	-0.00077
	(A2 * B1 * B2 * C1 * X)	0.00083	0.00083	0.00082
	(A2 * B1 * B2 * !C1 * X)	-0.00077	-0.00077	-0.00077
	(A2 * B1 * B2 * !C1 * X)	0.00083	0.00083	0.00082
	(A2 * B1 * !B2 * C1 * X)	-0.00077	-0.00077	-0.00077
	(A2 * B1 * !B2 * C1 * X)	0.00080	0.00080	0.00080
	(A2 * !B1 * C1 * X)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * C1 * X)	0.00080	0.00080	0.00080
	(!A2 * B1 * B2 * C1 * X)	-0.00070	-0.00072	-0.00072
	(!A2 * B1 * B2 * C1 * X)	0.00086	0.00088	0.00087
	(!A2 * B1 * B2 * !C1 * X)	-0.00070	-0.00072	-0.00072
	(!A2 * B1 * B2 * !C1 * X)	0.00087	0.00088	0.00087
	(!A2 * B1 * !B2 * C1 * X)	-0.00071	-0.00072	-0.00072
	(!A2 * B1 * !B2 * C1 * X)	0.00087	0.00088	0.00087
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * B1 * !B2 * !C1 * !X)	0.00106	0.00105	0.00105
	(!A2 * !B1 * C1 * X)	-0.00071	-0.00072	-0.00072
	(!A2 * !B1 * C1 * X)	0.00087	0.00088	0.00087
	(!A2 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * !X)	0.00106	0.00105	0.00105

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00152	-0.00153	-0.00152
	(A2 * B1 * B2 * C1 * X)	0.00161	0.00163	0.00161
	(A2 * B1 * B2 * !C1 * X)	-0.00152	-0.00153	-0.00152
	(A2 * B1 * B2 * !C1 * X)	0.00161	0.00163	0.00161
	(A2 * B1 * !B2 * C1 * X)	-0.00151	-0.00152	-0.00151
	(A2 * B1 * !B2 * C1 * X)	0.00157	0.00159	0.00157
	(A2 * !B1 * C1 * X)	-0.00151	-0.00152	-0.00151
	(A2 * !B1 * C1 * X)	0.00157	0.00159	0.00157
	(!A2 * B1 * B2 * C1 * X)	-0.00139	-0.00142	-0.00141
	(!A2 * B1 * B2 * C1 * X)	0.00170	0.00171	0.00170
	(!A2 * B1 * B2 * !C1 * X)	-0.00139	-0.00141	-0.00141
	(!A2 * B1 * B2 * !C1 * X)	0.00171	0.00170	0.00170
	(!A2 * B1 * !B2 * C1 * X)	-0.00138	-0.00142	-0.00141
	(!A2 * B1 * !B2 * C1 * X)	0.00169	0.00169	0.00170
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00077	-0.00076
	(!A2 * B1 * !B2 * !C1 * !X)	0.00194	0.00196	0.00193
	(!A2 * !B1 * C1 * X)	-0.00138	-0.00142	-0.00141
	(!A2 * !B1 * C1 * X)	0.00169	0.00170	0.00170
	(!A2 * !B1 * !C1 * !X)	-0.00077	-0.00077	-0.00076
	(!A2 * !B1 * !C1 * !X)	0.00194	0.00196	0.00193

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * B1 * B2 * C1 * X)**	0.00079	0.00079	0.00079
	(A1 * B1 * B2 * C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * B1 * B2 * !C1 * X)	0.00079	0.00079	0.00079
	(A1 * B1 * B2 * !C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * B1 * !B2 * C1 * X)	0.00079	0.00079	0.00079
	(A1 * B1 * !B2 * C1 * X)	-0.00077	-0.00078	-0.00078
	(A1 * !B1 * C1 * X)	0.00079	0.00079	0.00079
	(A1 * !B1 * C1 * X)	-0.00077	-0.00078	-0.00078
	(!A1 * B1 * B2 * X)	0.00075	0.00075	0.00075
	(!A1 * B1 * B2 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00074	0.00075	0.00075
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * B1 * !B2 * !C1 * !X)	0.00061	0.00062	0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00096	-0.00097	-0.00097
	(!A1 * !B1 * !C1 * !X)	0.00061	0.00062	0.00062
	(!A1 * !B1 * !C1 * !X)	-0.00096	-0.00097	-0.00097

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00087	0.00087	0.00087
	(A1 * B1 * B2 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * B1 * B2 * !C1 * X)	0.00087	0.00087	0.00087
	(A1 * B1 * B2 * !C1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * B1 * !B2 * C1 * X)	0.00087	0.00087	0.00087
	(A1 * B1 * !B2 * C1 * X)	-0.00076	-0.00078	-0.00077
	(A1 * !B1 * C1 * X)	0.00087	0.00087	0.00087
	(A1 * !B1 * C1 * X)	-0.00076	-0.00078	-0.00077
	(!A1 * B1 * B2 * X)	0.00082	0.00082	0.00082
	(!A1 * B1 * B2 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00081	0.00082	0.00082
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	0.00069	0.00069	0.00069
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(!A1 * !B1 * !C1 * !X)	0.00069	0.00069	0.00069
	(!A1 * !B1 * !C1 * !X)	-0.00095	-0.00096	-0.00096

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00151	0.00151	0.00150
	(A1 * B1 * B2 * C1 * X)	-0.00158	-0.00162	-0.00160
	(A1 * B1 * B2 * !C1 * X)	0.00151	0.00151	0.00150
	(A1 * B1 * B2 * !C1 * X)	-0.00158	-0.00162	-0.00160
	(A1 * B1 * !B2 * C1 * X)	0.00151	0.00150	0.00149
	(A1 * B1 * !B2 * C1 * X)	-0.00155	-0.00157	-0.00156
	(A1 * !B1 * C1 * X)	0.00151	0.00150	0.00149
	(A1 * !B1 * C1 * X)	-0.00155	-0.00157	-0.00156
	(!A1 * B1 * B2 * X)	0.00140	0.00140	0.00140
	(!A1 * B1 * B2 * X)	-0.00168	-0.00169	-0.00168
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00139	0.00140	0.00140
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00168	-0.00169	-0.00168
	(!A1 * B1 * !B2 * !C1 * !X)	0.00134	0.00136	0.00135
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00172	-0.00173	-0.00173
	(!A1 * !B1 * !C1 * !X)	0.00134	0.00136	0.00135
	(!A1 * !B1 * !C1 * !X)	-0.00172	-0.00173	-0.00173

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * B1 * B2 * C1 * X)**	-0.00079	-0.00079	-0.00079
	(A1 * B1 * B2 * C1 * X)	0.00081	0.00081	0.00080
	(A1 * B1 * B2 * !C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * B1 * B2 * !C1 * X)	0.00081	0.00081	0.00080
	(A1 * B1 * !B2 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * B1 * !B2 * C1 * X)	0.00078	0.00078	0.00078
	(A1 * !B1 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !B1 * C1 * X)	0.00078	0.00078	0.00078
	(!A1 * B1 * B2 * X)	-0.00073	-0.00075	-0.00075
	(!A1 * B1 * B2 * X)	0.00084	0.00086	0.00084
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00073	-0.00075	-0.00075
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00084	0.00085	0.00084
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * B1 * !B2 * !C1 * !X)	0.00097	0.00098	0.00097
	(!A1 * !B1 * !C1 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !B1 * !C1 * !X)	0.00097	0.00098	0.00097

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00087	-0.00087	-0.00087
	(A1 * B1 * B2 * C1 * X)	0.00080	0.00080	0.00080
	(A1 * B1 * B2 * !C1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * B1 * B2 * !C1 * X)	0.00080	0.00080	0.00080
	(A1 * B1 * !B2 * C1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * B1 * !B2 * C1 * X)	0.00077	0.00078	0.00077
	(A1 * !B1 * C1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * !B1 * C1 * X)	0.00078	0.00078	0.00077
	(!A1 * B1 * B2 * X)	-0.00080	-0.00082	-0.00082
	(!A1 * B1 * B2 * X)	0.00084	0.00084	0.00084
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00080	-0.00082	-0.00082
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00084	0.00084	0.00084
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00068	-0.00069	-0.00069
	(!A1 * B1 * !B2 * !C1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !B1 * !C1 * !X)	-0.00068	-0.00069	-0.00069
	(!A1 * !B1 * !C1 * !X)	0.00096	0.00097	0.00096

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00150	-0.00151	-0.00150
	(A1 * B1 * B2 * C1 * X)	0.00159	0.00162	0.00160
	(A1 * B1 * B2 * !C1 * X)	-0.00150	-0.00151	-0.00150
	(A1 * B1 * B2 * !C1 * X)	0.00160	0.00162	0.00160
	(A1 * B1 * !B2 * C1 * X)	-0.00149	-0.00150	-0.00149
	(A1 * B1 * !B2 * C1 * X)	0.00156	0.00157	0.00156
	(A1 * !B1 * C1 * X)	-0.00149	-0.00150	-0.00149
	(A1 * !B1 * C1 * X)	0.00156	0.00157	0.00156
	(!A1 * B1 * B2 * X)	-0.00138	-0.00140	-0.00140
	(!A1 * B1 * B2 * X)	0.00169	0.00170	0.00168
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00138	-0.00140	-0.00140
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00169	0.00170	0.00168
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00134	-0.00136	-0.00135
	(!A1 * B1 * !B2 * !C1 * !X)	0.00174	0.00174	0.00173
	(!A1 * !B1 * !C1 * !X)	-0.00134	-0.00136	-0.00135
	(!A1 * !B1 * !C1 * !X)	0.00174	0.00174	0.00173

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * A2 * B2 * C1 * X)**	0.00068	0.00068	0.00068
	(A1 * A2 * B2 * C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B2 * !C1 * X)	0.00068	0.00068	0.00068
	(A1 * A2 * B2 * !C1 * X)	-0.00064	-0.00064	-0.00063
	(A1 * A2 * !B2 * C1 * X)	0.00063	0.00064	0.00064
	(A1 * A2 * !B2 * C1 * X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !B2 * !C1 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * !B2 * !C1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * B2 * C1 * X)	0.00068	0.00068	0.00068
	(A1 * !A2 * B2 * C1 * X)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !B2 * C1 * X)	0.00063	0.00063	0.00063
	(A1 * !A2 * !B2 * C1 * X)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * !B2 * !C1 * !X)	0.00025	0.00026	0.00025
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00103	-0.00104	-0.00104
	(!A1 * B2 * C1 * X)	0.00069	0.00068	0.00068
	(!A1 * B2 * C1 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * !B2 * C1 * X)	0.00063	0.00063	0.00063
	(!A1 * !B2 * C1 * X)	-0.00086	-0.00087	-0.00086
	(!A1 * !B2 * !C1 * !X)	0.00025	0.00026	0.00025
	(!A1 * !B2 * !C1 * !X)	-0.00103	-0.00104	-0.00104

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00083	0.00083	0.00083
	(A1 * A2 * B2 * C1 * X)	-0.00069	-0.00069	-0.00068
	(A1 * A2 * B2 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * B2 * !C1 * X)	-0.00065	-0.00065	-0.00064
	(A1 * A2 * !B2 * C1 * X)	0.00077	0.00078	0.00078
	(A1 * A2 * !B2 * C1 * X)	-0.00066	-0.00067	-0.00066
	(A1 * A2 * !B2 * !C1 * X)	0.00077	0.00078	0.00077
	(A1 * A2 * !B2 * !C1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * !A2 * B2 * C1 * X)	0.00083	0.00083	0.00082
	(A1 * !A2 * B2 * C1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * !B2 * C1 * X)	0.00076	0.00077	0.00077
	(A1 * !A2 * !B2 * C1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * !B2 * !C1 * !X)	0.00031	0.00031	0.00030
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00109	-0.00110	-0.00110
	(!A1 * B2 * C1 * X)	0.00083	0.00083	0.00082
	(!A1 * B2 * C1 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * !B2 * C1 * X)	0.00076	0.00077	0.00077
	(!A1 * !B2 * C1 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * !B2 * !C1 * !X)	0.00031	0.00031	0.00030
	(!A1 * !B2 * !C1 * !X)	-0.00109	-0.00110	-0.00110

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00146	0.00147	0.00146
	(A1 * A2 * B2 * C1 * X)	-0.00140	-0.00139	-0.00138
	(A1 * A2 * B2 * !C1 * X)	0.00145	0.00146	0.00146
	(A1 * A2 * B2 * !C1 * X)	-0.00129	-0.00130	-0.00129
	(A1 * A2 * !B2 * C1 * X)	0.00138	0.00139	0.00138
	(A1 * A2 * !B2 * C1 * X)	-0.00134	-0.00135	-0.00134
	(A1 * A2 * !B2 * !C1 * X)	0.00137	0.00138	0.00138
	(A1 * A2 * !B2 * !C1 * X)	-0.00128	-0.00129	-0.00129
	(A1 * !A2 * B2 * C1 * X)	0.00145	0.00145	0.00145
	(A1 * !A2 * B2 * C1 * X)	-0.00167	-0.00169	-0.00168
	(A1 * !A2 * !B2 * C1 * X)	0.00137	0.00137	0.00137
	(A1 * !A2 * !B2 * C1 * X)	-0.00173	-0.00173	-0.00173
	(A1 * !A2 * !B2 * !C1 * !X)	0.00065	0.00065	0.00062
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00204	-0.00206	-0.00209
	(!A1 * B2 * C1 * X)	0.00145	0.00145	0.00145
	(!A1 * B2 * C1 * X)	-0.00167	-0.00169	-0.00168
	(!A1 * !B2 * C1 * X)	0.00137	0.00137	0.00137
	(!A1 * !B2 * C1 * X)	-0.00173	-0.00173	-0.00173
	(!A1 * !B2 * !C1 * !X)	0.00065	0.00065	0.00062
	(!A1 * !B2 * !C1 * !X)	-0.00204	-0.00206	-0.00209

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * A2 * B2 * C1 * X)**	-0.00068	-0.00068	-0.00068
	(A1 * A2 * B2 * C1 * X)	0.00067	0.00067	0.00067
	(A1 * A2 * B2 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B2 * !C1 * X)	0.00064	0.00064	0.00064
	(A1 * A2 * !B2 * C1 * X)	-0.00062	-0.00064	-0.00064
	(A1 * A2 * !B2 * C1 * X)	0.00065	0.00066	0.00065
	(A1 * A2 * !B2 * !C1 * X)	-0.00062	-0.00063	-0.00063
	(A1 * A2 * !B2 * !C1 * X)	0.00063	0.00063	0.00063
	(A1 * !A2 * B2 * C1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * !A2 * B2 * C1 * X)	0.00084	0.00084	0.00083
	(A1 * !A2 * !B2 * C1 * X)	-0.00062	-0.00063	-0.00063
	(A1 * !A2 * !B2 * C1 * X)	0.00087	0.00087	0.00086
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00025	-0.00025	-0.00024
	(A1 * !A2 * !B2 * !C1 * !X)	0.00105	0.00104	0.00104
	(!A1 * B2 * C1 * X)	-0.00068	-0.00068	-0.00068
	(!A1 * B2 * C1 * X)	0.00084	0.00084	0.00083
	(!A1 * !B2 * C1 * X)	-0.00062	-0.00063	-0.00063
	(!A1 * !B2 * C1 * X)	0.00086	0.00087	0.00086
	(!A1 * !B2 * !C1 * !X)	-0.00025	-0.00025	-0.00024
	(!A1 * !B2 * !C1 * !X)	0.00105	0.00104	0.00104

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B2 * C1 * X)	0.00069	0.00069	0.00068
	(A1 * A2 * B2 * !C1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * B2 * !C1 * X)	0.00065	0.00065	0.00066
	(A1 * A2 * !B2 * C1 * X)	-0.00076	-0.00078	-0.00078
	(A1 * A2 * !B2 * C1 * X)	0.00066	0.00067	0.00066
	(A1 * A2 * !B2 * !C1 * X)	-0.00076	-0.00078	-0.00077
	(A1 * A2 * !B2 * !C1 * X)	0.00064	0.00065	0.00064
	(A1 * !A2 * B2 * C1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * !A2 * B2 * C1 * X)	0.00085	0.00085	0.00084
	(A1 * !A2 * !B2 * C1 * X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !B2 * C1 * X)	0.00088	0.00088	0.00088
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00030	-0.00030	-0.00029
	(A1 * !A2 * !B2 * !C1 * !X)	0.00111	0.00110	0.00110
	(!A1 * B2 * C1 * X)	-0.00083	-0.00083	-0.00082
	(!A1 * B2 * C1 * X)	0.00085	0.00085	0.00084
	(!A1 * !B2 * C1 * X)	-0.00076	-0.00077	-0.00077
	(!A1 * !B2 * C1 * X)	0.00088	0.00088	0.00088
	(!A1 * !B2 * !C1 * !X)	-0.00030	-0.00030	-0.00029
	(!A1 * !B2 * !C1 * !X)	0.00111	0.00110	0.00110

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00146	-0.00146	-0.00146
	(A1 * A2 * B2 * C1 * X)	0.00140	0.00139	0.00138
	(A1 * A2 * B2 * !C1 * X)	-0.00145	-0.00146	-0.00145
	(A1 * A2 * B2 * !C1 * X)	0.00131	0.00131	0.00132
	(A1 * A2 * !B2 * C1 * X)	-0.00136	-0.00139	-0.00138
	(A1 * A2 * !B2 * C1 * X)	0.00134	0.00135	0.00134
	(A1 * A2 * !B2 * !C1 * X)	-0.00135	-0.00138	-0.00138
	(A1 * A2 * !B2 * !C1 * X)	0.00128	0.00130	0.00129
	(A1 * !A2 * B2 * C1 * X)	-0.00145	-0.00145	-0.00144
	(A1 * !A2 * B2 * C1 * X)	0.00169	0.00169	0.00168
	(A1 * !A2 * !B2 * C1 * X)	-0.00135	-0.00137	-0.00137
	(A1 * !A2 * !B2 * C1 * X)	0.00174	0.00175	0.00174
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00061	-0.00061	-0.00060
	(A1 * !A2 * !B2 * !C1 * !X)	0.00212	0.00210	0.00209
	(!A1 * B2 * C1 * X)	-0.00144	-0.00145	-0.00144
	(!A1 * B2 * C1 * X)	0.00167	0.00169	0.00168
	(!A1 * !B2 * C1 * X)	-0.00135	-0.00137	-0.00137
	(!A1 * !B2 * C1 * X)	0.00174	0.00175	0.00174
	(!A1 * !B2 * !C1 * !X)	-0.00061	-0.00061	-0.00060
	(!A1 * !B2 * !C1 * !X)	0.00212	0.00210	0.00209

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * A2 * B1 * C1 * X)**	0.00071	0.00071	0.00071
	(A1 * A2 * B1 * C1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * B1 * !C1 * X)	0.00071	0.00071	0.00070
	(A1 * A2 * B1 * !C1 * X)	-0.00063	-0.00062	-0.00062
	(A1 * A2 * !B1 * C1 * X)	0.00066	0.00067	0.00066
	(A1 * A2 * !B1 * C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * A2 * !B1 * !C1 * X)	0.00066	0.00067	0.00066
	(A1 * A2 * !B1 * !C1 * X)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B1 * C1 * X)	0.00071	0.00071	0.00070
	(A1 * !A2 * B1 * C1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00066	0.00066	0.00066
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * !B1 * !C1 * !X)	0.00058	0.00058	0.00058
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00092	-0.00091	-0.00092
	(!A1 * B1 * C1 * X)	0.00071	0.00071	0.00070
	(!A1 * B1 * C1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * !B1 * !C1 * !X)	0.00058	0.00058	0.00058
	(!A1 * !B1 * !C1 * !X)	-0.00092	-0.00091	-0.00092

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00085	0.00086	0.00085
	(A1 * A2 * B1 * C1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * A2 * B1 * !C1 * X)	0.00086	0.00085	0.00085
	(A1 * A2 * B1 * !C1 * X)	-0.00060	-0.00059	-0.00059
	(A1 * A2 * !B1 * C1 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * !B1 * C1 * X)	-0.00061	-0.00062	-0.00061
	(A1 * A2 * !B1 * !C1 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * !B1 * !C1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * B1 * C1 * X)	0.00085	0.00085	0.00085
	(A1 * !A2 * B1 * C1 * X)	-0.00077	-0.00078	-0.00078
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00079	0.00080	0.00079
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * !A2 * !B1 * !C1 * !X)	0.00068	0.00068	0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00092	-0.00093	-0.00092
	(!A1 * B1 * C1 * X)	0.00085	0.00085	0.00085
	(!A1 * B1 * C1 * X)	-0.00077	-0.00078	-0.00078
	(!A1 * !B1 * !C1 * !X)	0.00068	0.00068	0.00068
	(!A1 * !B1 * !C1 * !X)	-0.00092	-0.00093	-0.00092

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00163	0.00164	0.00163
	(A1 * A2 * B1 * C1 * X)	-0.00132	-0.00132	-0.00132
	(A1 * A2 * B1 * !C1 * X)	0.00162	0.00162	0.00162
	(A1 * A2 * B1 * !C1 * X)	-0.00123	-0.00123	-0.00123
	(A1 * A2 * !B1 * C1 * X)	0.00154	0.00157	0.00155
	(A1 * A2 * !B1 * C1 * X)	-0.00127	-0.00128	-0.00128
	(A1 * A2 * !B1 * !C1 * X)	0.00155	0.00157	0.00155
	(A1 * A2 * !B1 * !C1 * X)	-0.00122	-0.00123	-0.00123
	(A1 * !A2 * B1 * C1 * X)	0.00163	0.00162	0.00162
	(A1 * !A2 * B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00154	0.00154	0.00154
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * !B1 * !C1 * !X)	0.00148	0.00149	0.00148
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00173	-0.00173	-0.00172
	(!A1 * B1 * C1 * X)	0.00163	0.00162	0.00162
	(!A1 * B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * !B1 * !C1 * !X)	0.00148	0.00149	0.00148
	(!A1 * !B1 * !C1 * !X)	-0.00173	-0.00173	-0.00172

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a221o_1	**(A1 * A2 * B1 * C1 * X)**	-0.00070	-0.00070	-0.00070
	(A1 * A2 * B1 * C1 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * B1 * !C1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * B1 * !C1 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * !B1 * C1 * X)	-0.00065	-0.00067	-0.00066
	(A1 * A2 * !B1 * C1 * X)	0.00064	0.00064	0.00064
	(A1 * A2 * !B1 * !C1 * X)	-0.00065	-0.00067	-0.00066
	(A1 * A2 * !B1 * !C1 * X)	0.00062	0.00062	0.00062
	(A1 * !A2 * B1 * C1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * !A2 * B1 * C1 * X)	0.00081	0.00082	0.00081
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00064	-0.00066	-0.00066
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00084	0.00085	0.00085
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00057	-0.00058	-0.00058
	(A1 * !A2 * !B1 * !C1 * !X)	0.00092	0.00092	0.00092
	(!A1 * B1 * C1 * X)	-0.00070	-0.00071	-0.00070
	(!A1 * B1 * C1 * X)	0.00081	0.00082	0.00081
	(!A1 * !B1 * !C1 * !X)	-0.00057	-0.00058	-0.00058
	(!A1 * !B1 * !C1 * !X)	0.00092	0.00092	0.00092

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00085	-0.00085	-0.00085
	(A1 * A2 * B1 * C1 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * B1 * !C1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * B1 * !C1 * X)	0.00060	0.00060	0.00060
	(A1 * A2 * !B1 * C1 * X)	-0.00079	-0.00081	-0.00080
	(A1 * A2 * !B1 * C1 * X)	0.00061	0.00062	0.00061
	(A1 * A2 * !B1 * !C1 * X)	-0.00078	-0.00081	-0.00080
	(A1 * A2 * !B1 * !C1 * X)	0.00059	0.00059	0.00059
	(A1 * !A2 * B1 * C1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * B1 * C1 * X)	0.00078	0.00078	0.00078
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00078	-0.00080	-0.00079
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00081	0.00082	0.00081
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00067	-0.00068	-0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	0.00092	0.00093	0.00092
	(!A1 * B1 * C1 * X)	-0.00085	-0.00085	-0.00085
	(!A1 * B1 * C1 * X)	0.00078	0.00078	0.00078
	(!A1 * !B1 * !C1 * !X)	-0.00067	-0.00068	-0.00068
	(!A1 * !B1 * !C1 * !X)	0.00092	0.00093	0.00092

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00163	-0.00163	-0.00163
	(A1 * A2 * B1 * C1 * X)	0.00132	0.00132	0.00132
	(A1 * A2 * B1 * !C1 * X)	-0.00162	-0.00162	-0.00162
	(A1 * A2 * B1 * !C1 * X)	0.00124	0.00125	0.00126
	(A1 * A2 * !B1 * C1 * X)	-0.00153	-0.00156	-0.00155
	(A1 * A2 * !B1 * C1 * X)	0.00127	0.00128	0.00128
	(A1 * A2 * !B1 * !C1 * X)	-0.00153	-0.00156	-0.00155
	(A1 * A2 * !B1 * !C1 * X)	0.00122	0.00123	0.00123
	(A1 * !A2 * B1 * C1 * X)	-0.00162	-0.00162	-0.00161
	(A1 * !A2 * B1 * C1 * X)	0.00163	0.00163	0.00162
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00152	-0.00154	-0.00154
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00167	0.00168	0.00168
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00146	-0.00149	-0.00148
	(A1 * !A2 * !B1 * !C1 * !X)	0.00173	0.00173	0.00172
	(!A1 * B1 * C1 * X)	-0.00162	-0.00162	-0.00161
	(!A1 * B1 * C1 * X)	0.00162	0.00163	0.00162
	(!A1 * !B1 * !C1 * !X)	-0.00146	-0.00149	-0.00148
	(!A1 * !B1 * !C1 * !X)	0.00173	0.00173	0.00172

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	(A1 * B1 * B2 * X)	0.00087	0.00088	0.00087
	(A1 * B1 * B2 * X)	-0.00055	-0.00055	-0.00054
	(A1 * A2 * B1 * !B2 * X)	0.00087	0.00088	0.00087
	(A1 * A2 * B1 * !B2 * X)	-0.00054	-0.00055	-0.00054
	(A1 * A2 * !B1 * X)	0.00087	0.00088	0.00087
	(A1 * A2 * !B1 * X)	-0.00055	-0.00055	-0.00054
	(!A1 * B1 * B2 * X)	0.00087	0.00088	0.00087
	(!A1 * B1 * B2 * X)	-0.00055	-0.00055	-0.00054
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00091	0.00092	0.00091
	(A1 * B1 * B2 * X)	-0.00054	-0.00055	-0.00054
	(A1 * A2 * B1 * !B2 * X)	0.00093	0.00092	0.00091
	(A1 * A2 * B1 * !B2 * X)	-0.00055	-0.00055	-0.00054
	(A1 * A2 * !B1 * X)	0.00093	0.00092	0.00091
	(A1 * A2 * !B1 * X)	-0.00055	-0.00055	-0.00054
	(!A1 * B1 * B2 * X)	0.00091	0.00092	0.00091
	(!A1 * B1 * B2 * X)	-0.00054	-0.00055	-0.00054
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00153	0.00154	0.00153
	(A1 * B1 * B2 * X)	-0.00115	-0.00115	-0.00114
	(A1 * A2 * B1 * !B2 * X)	0.00153	0.00154	0.00153
	(A1 * A2 * B1 * !B2 * X)	-0.00114	-0.00115	-0.00114
	(A1 * A2 * !B1 * X)	0.00153	0.00154	0.00153
	(A1 * A2 * !B1 * X)	-0.00114	-0.00115	-0.00114
	(!A1 * B1 * B2 * X)	0.00153	0.00153	0.00153
	(!A1 * B1 * B2 * X)	-0.00116	-0.00116	-0.00116

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	(A1 * B1 * B2 * X)	-0.00080	-0.00081	-0.00087
	(A1 * B1 * B2 * X)	0.00061	0.00060	0.00056
	(A1 * A2 * B1 * !B2 * X)	-0.00071	-0.00072	-0.00084
	(A1 * A2 * B1 * !B2 * X)	0.00067	0.00067	0.00057
	(A1 * A2 * !B1 * X)	-0.00071	-0.00072	-0.00084
	(A1 * A2 * !B1 * X)	0.00067	0.00067	0.00057
	(!A1 * B1 * B2 * X)	-0.00080	-0.00081	-0.00086
	(!A1 * B1 * B2 * X)	0.00061	0.00061	0.00056
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00085	-0.00086	-0.00091
	(A1 * B1 * B2 * X)	0.00060	0.00060	0.00056
	(A1 * A2 * B1 * !B2 * X)	-0.00075	-0.00076	-0.00088
	(A1 * A2 * B1 * !B2 * X)	0.00066	0.00066	0.00057
	(A1 * A2 * !B1 * X)	-0.00075	-0.00076	-0.00088
	(A1 * A2 * !B1 * X)	0.00066	0.00066	0.00057
	(!A1 * B1 * B2 * X)	-0.00084	-0.00085	-0.00091
	(!A1 * B1 * B2 * X)	0.00061	0.00061	0.00056
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00138	-0.00140	-0.00152
	(A1 * B1 * B2 * X)	0.00128	0.00128	0.00118
	(A1 * A2 * B1 * !B2 * X)	-0.00118	-0.00120	-0.00147
	(A1 * A2 * B1 * !B2 * X)	0.00142	0.00141	0.00121
	(A1 * A2 * !B1 * X)	-0.00118	-0.00120	-0.00147
	(A1 * A2 * !B1 * X)	0.00142	0.00141	0.00121
	(!A1 * B1 * B2 * X)	-0.00138	-0.00139	-0.00151
	(!A1 * B1 * B2 * X)	0.00130	0.00129	0.00119

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT						OUTPUT
A1	A2	B1	B2	C1	C2	Y
0	x	0	x	0	x	1
0	x	0	x	1	0	1
0	x	x	x	1	1	0
0	x	1	0	0	x	1
0	x	1	0	1	0	1
x	x	1	1	x	x	0
1	0	0	x	0	x	1
1	0	0	x	1	0	1
1	0	x	x	1	1	0
1	0	1	0	0	x	1
1	0	1	0	1	0	1
1	1	x	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222oi_1	14.38560
sky130_fd_sc_hs__a222oi_2	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	Y
sky130_fd_sc_hs__a222oi_1	0.00234	0.00219	0.00231	0.00232	0.00238	0.00245	0.04059
sky130_fd_sc_hs__a222oi_2	0.00472	0.00412	0.00471	0.00424	0.00430	0.00487	0.07857

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.00011	0.00016
sky130_fd_sc_hs__a222oi_2	0.00000	0.00021	0.00033

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (FR)	1.67015	3.95326	14.50450
	A2->Y (FR)	1.82846	4.13192	14.69570
	B1->Y (FR)	1.53769	3.76508	14.37240
	B2->Y (FR)	1.72643	3.96805	14.60130
	C1->Y (FR)	1.24294	3.36615	13.41000
	C2->Y (FR)	1.42410	3.55366	13.60110
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	1.51816	3.52199	14.43300
	A2->Y (FR)	1.70128	3.73255	14.69890
	B1->Y (FR)	1.39149	3.32955	14.26570
	B2->Y (FR)	1.59259	3.57284	14.63940
	C1->Y (FR)	1.07817	2.94249	13.40930
	C2->Y (FR)	1.30128	3.16604	13.63910

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.10329	0.80446	4.26170
	A2->Y (RF)	0.10934	0.80024	4.31890
	B1->Y (RF)	0.10165	0.78333	4.20408
	B2->Y (RF)	0.10897	0.78378	4.26796
	C1->Y (RF)	0.09179	0.75563	4.15097
	C2->Y (RF)	0.09870	0.75843	4.21838
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.09560	0.76508	4.26292
	A2->Y (RF)	0.10280	0.76742	4.33304
	B1->Y (RF)	0.09556	0.74506	4.21848
	B2->Y (RF)	0.10346	0.75304	4.29782
	C1->Y (RF)	0.08044	0.69792	4.11053
	C2->Y (RF)	0.08996	0.71314	4.19334

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00107	0.00098	0.00096
	A1	0.00482	0.00473	0.00470
	A2	0.00121	0.00116	0.00114
	A2	0.00531	0.00525	0.00521
	B1	0.00109	0.00100	0.00098
	B1	0.00443	0.00433	0.00430
	B2	0.00125	0.00118	0.00116
	B2	0.00498	0.00490	0.00487
	C1	0.00104	0.00093	0.00090
	C1	0.00409	0.00398	0.00395
	C2	0.00122	0.00113	0.00111
	C2	0.00465	0.00455	0.00452
sky130_fd_sc_hs__a222oi_2	A1	0.00165	0.00147	0.00143
	A1	0.00914	0.00895	0.00890
	A2	0.00210	0.00198	0.00195
	A2	0.01002	0.00988	0.00982
	B1	0.00169	0.00150	0.00147
	B1	0.00843	0.00822	0.00818
	B2	0.00208	0.00195	0.00192
	B2	0.00930	0.00915	0.00910
	C1	0.00162	0.00143	0.00140
	C1	0.00742	0.00724	0.00720
	C2	0.00198	0.00180	0.00176
	C2	0.00876	0.00857	0.00851

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00515	0.00510	0.00495
	A1	0.00180	0.00174	0.00161
	A2	0.00552	0.00546	0.00530
	A2	0.00179	0.00173	0.00160
	B1	0.00432	0.00430	0.00420
	B1	0.00114	0.00111	0.00102
	B2	0.00474	0.00472	0.00462
	B2	0.00114	0.00111	0.00102
	C1	0.00356	0.00355	0.00352
	C1	0.00046	0.00044	0.00041
	C2	0.00394	0.00394	0.00391
	C2	0.00045	0.00043	0.00040
sky130_fd_sc_hs__a222oi_2	A1	0.00967	0.00955	0.00926
	A1	0.00294	0.00281	0.00257
	A2	0.01018	0.01007	0.00978
	A2	0.00296	0.00286	0.00262
	B1	0.00812	0.00806	0.00789
	B1	0.00169	0.00162	0.00146
	B2	0.00881	0.00875	0.00857
	B2	0.00182	0.00177	0.00161
	C1	0.00636	0.00633	0.00628
	C1	0.00043	0.00039	0.00035
	C2	0.00735	0.00733	0.00728
	C2	0.00040	0.00035	0.00031

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a222oi_1	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00066	0.00067	0.00067
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00081	-0.00083	-0.00083
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00067	0.00067	0.00067
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00082	-0.00083	-0.00083
	(A2 * B1 * B2 * !C1 * !Y)	0.00067	0.00067	0.00067
	(A2 * B1 * B2 * !C1 * !Y)	-0.00081	-0.00083	-0.00083
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00067	0.00067	0.00067
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00080	-0.00081	-0.00080
	(A2 * !B1 * C1 * C2 * !Y)	0.00067	0.00067	0.00067
	(A2 * !B1 * C1 * C2 * !Y)	-0.00080	-0.00081	-0.00080
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00062	0.00062	0.00062
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00087	-0.00087	-0.00087
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00062	0.00062	0.00062
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00087	-0.00087	-0.00087
	(!A2 * B1 * B2 * !C1 * !Y)	0.00062	0.00062	0.00062
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00087	-0.00087	-0.00087
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00062	0.00062	0.00062
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00087	-0.00087	-0.00087
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00028	0.00028	0.00027
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00100	-0.00101	-0.00101
	(!A2 * B1 * !B2 * !C1 * Y)	0.00028	0.00028	0.00027
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00100	-0.00101	-0.00101
	(!A2 * !B1 * C1 * C2 * !Y)	0.00062	0.00062	0.00062
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00087	-0.00087	-0.00087
	(!A2 * !B1 * C1 * !C2 * Y)	0.00028	0.00028	0.00027
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00100	-0.00101	-0.00101
	(!A2 * !B1 * !C1 * Y)	0.00028	0.00028	0.00027
	(!A2 * !B1 * !C1 * Y)	-0.00100	-0.00101	-0.00101

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00139	0.00139	0.00138
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00166	-0.00169	-0.00168
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00139	0.00139	0.00138
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00166	-0.00169	-0.00168
	(A2 * B1 * B2 * !C1 * !Y)	0.00139	0.00139	0.00138
	(A2 * B1 * B2 * !C1 * !Y)	-0.00166	-0.00169	-0.00168
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00138	0.00138	0.00138
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00160	-0.00163	-0.00162
	(A2 * !B1 * C1 * C2 * !Y)	0.00138	0.00138	0.00138
	(A2 * !B1 * C1 * C2 * !Y)	-0.00160	-0.00163	-0.00162
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00130	0.00131	0.00130
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00177	-0.00177	-0.00176
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00130	0.00130	0.00130
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00177	-0.00177	-0.00176
	(!A2 * B1 * B2 * !C1 * !Y)	0.00130	0.00130	0.00130
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00177	-0.00177	-0.00176
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00130	0.00131	0.00130
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00176	-0.00177	-0.00176
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00056	0.00056	0.00054
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00209	-0.00211	-0.00213
	(!A2 * B1 * !B2 * !C1 * Y)	0.00056	0.00056	0.00054
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00209	-0.00211	-0.00213
	(!A2 * !B1 * C1 * C2 * !Y)	0.00129	0.00130	0.00130
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00176	-0.00177	-0.00176
	(!A2 * !B1 * C1 * !C2 * Y)	0.00056	0.00056	0.00054
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00209	-0.00211	-0.00213
	(!A2 * !B1 * !C1 * Y)	0.00056	0.00056	0.00054
	(!A2 * !B1 * !C1 * Y)	-0.00209	-0.00211	-0.00213

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00066	-0.00067	-0.00067
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00083	0.00083	0.00083
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00083	0.00083	0.00083
	(A2 * B1 * B2 * !C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * !C1 * !Y)	0.00083	0.00083	0.00083
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00080	0.00081	0.00080
	(A2 * !B1 * C1 * C2 * !Y)	-0.00067	-0.00067	-0.00067
	(A2 * !B1 * C1 * C2 * !Y)	0.00080	0.00081	0.00080
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00061	-0.00062	-0.00062
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00088	0.00088	0.00087
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00061	-0.00062	-0.00062
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00087	0.00088	0.00087
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00061	-0.00062	-0.00062
	(!A2 * B1 * B2 * !C1 * !Y)	0.00087	0.00088	0.00087
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00061	-0.00062	-0.00062
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00087	0.00088	0.00087
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00027	-0.00027	-0.00027
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00102	0.00102	0.00101
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00027	-0.00027	-0.00027
	(!A2 * B1 * !B2 * !C1 * Y)	0.00102	0.00102	0.00101
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00061	-0.00062	-0.00062
	(!A2 * !B1 * C1 * C2 * !Y)	0.00087	0.00088	0.00087
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00027	-0.00027	-0.00027
	(!A2 * !B1 * C1 * !C2 * Y)	0.00102	0.00102	0.00101
	(!A2 * !B1 * !C1 * Y)	-0.00027	-0.00027	-0.00027
	(!A2 * !B1 * !C1 * Y)	0.00102	0.00102	0.00101

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00139	-0.00139	-0.00138
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00169	0.00169	0.00168
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00139	-0.00139	-0.00138
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00169	0.00169	0.00168
	(A2 * B1 * B2 * !C1 * !Y)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * B2 * !C1 * !Y)	0.00167	0.00169	0.00168
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00138	-0.00138	-0.00138
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00161	0.00163	0.00162
	(A2 * !B1 * C1 * C2 * !Y)	-0.00138	-0.00138	-0.00138
	(A2 * !B1 * C1 * C2 * !Y)	0.00162	0.00163	0.00162
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00129	-0.00131	-0.00130
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00178	0.00178	0.00177
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00128	-0.00130	-0.00130
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00178	0.00178	0.00177
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00128	-0.00130	-0.00130
	(!A2 * B1 * B2 * !C1 * !Y)	0.00178	0.00179	0.00177
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00127	-0.00131	-0.00130
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00177	0.00179	0.00177
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00053	-0.00053	-0.00053
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00213	0.00214	0.00213
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00053	-0.00053	-0.00053
	(!A2 * B1 * !B2 * !C1 * Y)	0.00213	0.00214	0.00213
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00127	-0.00130	-0.00130
	(!A2 * !B1 * C1 * C2 * !Y)	0.00176	0.00177	0.00177
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00052	-0.00053	-0.00053
	(!A2 * !B1 * C1 * !C2 * Y)	0.00212	0.00214	0.00213
	(!A2 * !B1 * !C1 * Y)	-0.00052	-0.00053	-0.00053
	(!A2 * !B1 * !C1 * Y)	0.00212	0.00214	0.00213

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00070	0.00070	0.00069
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00082	-0.00083	-0.00083
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00070	0.00070	0.00069
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00082	-0.00083	-0.00083
	(A1 * B1 * B2 * !C1 * !Y)	0.00070	0.00070	0.00069
	(A1 * B1 * B2 * !C1 * !Y)	-0.00082	-0.00083	-0.00083
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00070	0.00070	0.00069
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00079	-0.00081	-0.00080
	(A1 * !B1 * C1 * C2 * !Y)	0.00070	0.00070	0.00069
	(A1 * !B1 * C1 * C2 * !Y)	-0.00079	-0.00081	-0.00080
	(!A1 * B1 * B2 * !Y)	0.00065	0.00065	0.00065
	(!A1 * B1 * B2 * !Y)	-0.00087	-0.00087	-0.00087
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00065	0.00065	0.00065
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00086	-0.00087	-0.00087
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00065	0.00065	0.00065
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00087	-0.00087	-0.00087
	(!A1 * B1 * !B2 * !C1 * Y)	0.00065	0.00065	0.00065
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00087	-0.00087	-0.00087
	(!A1 * !B1 * C1 * !C2 * Y)	0.00065	0.00066	0.00065
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00087	-0.00087	-0.00087
	(!A1 * !B1 * !C1 * Y)	0.00065	0.00066	0.00065
	(!A1 * !B1 * !C1 * Y)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00130	0.00130	0.00129
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00154	-0.00156	-0.00155
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00130	0.00130	0.00129
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00154	-0.00156	-0.00155
	(A1 * B1 * B2 * !C1 * !Y)	0.00130	0.00130	0.00129
	(A1 * B1 * B2 * !C1 * !Y)	-0.00154	-0.00156	-0.00155
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00129	0.00131	0.00129
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00149	-0.00152	-0.00151
	(A1 * !B1 * C1 * C2 * !Y)	0.00129	0.00131	0.00129
	(A1 * !B1 * C1 * C2 * !Y)	-0.00149	-0.00152	-0.00151
	(!A1 * B1 * B2 * !Y)	0.00121	0.00122	0.00121
	(!A1 * B1 * B2 * !Y)	-0.00162	-0.00163	-0.00162
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00122	0.00122	0.00121
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00162	-0.00163	-0.00162
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00116	0.00117	0.00116
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00168	-0.00168	-0.00167
	(!A1 * B1 * !B2 * !C1 * Y)	0.00116	0.00117	0.00116
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00168	-0.00168	-0.00167
	(!A1 * !B1 * C1 * !C2 * Y)	0.00116	0.00117	0.00116
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00168	-0.00168	-0.00167
	(!A1 * !B1 * !C1 * Y)	0.00116	0.00117	0.00116
	(!A1 * !B1 * !C1 * Y)	-0.00168	-0.00168	-0.00167

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00069	-0.00070	-0.00069
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00083	0.00083	0.00083
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00069	-0.00070	-0.00069
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00083	0.00083	0.00083
	(A1 * B1 * B2 * !C1 * !Y)	-0.00070	-0.00070	-0.00069
	(A1 * B1 * B2 * !C1 * !Y)	0.00083	0.00083	0.00083
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00069	-0.00070	-0.00069
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00080	0.00081	0.00080
	(A1 * !B1 * C1 * C2 * !Y)	-0.00070	-0.00070	-0.00069
	(A1 * !B1 * C1 * C2 * !Y)	0.00080	0.00081	0.00080
	(!A1 * B1 * B2 * !Y)	-0.00064	-0.00065	-0.00065
	(!A1 * B1 * B2 * !Y)	0.00087	0.00088	0.00087
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00064	-0.00065	-0.00065
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00087	0.00087	0.00087
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00064	-0.00065	-0.00065
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00087	0.00088	0.00087
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00064	-0.00065	-0.00065
	(!A1 * B1 * !B2 * !C1 * Y)	0.00087	0.00088	0.00087
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00064	-0.00066	-0.00065
	(!A1 * !B1 * C1 * !C2 * Y)	0.00087	0.00088	0.00087
	(!A1 * !B1 * !C1 * Y)	-0.00064	-0.00066	-0.00065
	(!A1 * !B1 * !C1 * Y)	0.00087	0.00088	0.00087

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00129	-0.00130	-0.00129
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00156	0.00156	0.00155
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00156	0.00156	0.00155
	(A1 * B1 * B2 * !C1 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * B1 * B2 * !C1 * !Y)	0.00156	0.00156	0.00155
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00151	0.00152	0.00151
	(A1 * !B1 * C1 * C2 * !Y)	-0.00129	-0.00130	-0.00129
	(A1 * !B1 * C1 * C2 * !Y)	0.00151	0.00152	0.00151
	(!A1 * B1 * B2 * !Y)	-0.00120	-0.00122	-0.00121
	(!A1 * B1 * B2 * !Y)	0.00163	0.00164	0.00163
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00120	-0.00122	-0.00121
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00163	0.00164	0.00163
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00114	-0.00117	-0.00116
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00169	0.00169	0.00168
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00114	-0.00117	-0.00116
	(!A1 * B1 * !B2 * !C1 * Y)	0.00169	0.00169	0.00168
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00114	-0.00117	-0.00116
	(!A1 * !B1 * C1 * !C2 * Y)	0.00169	0.00169	0.00168
	(!A1 * !B1 * !C1 * Y)	-0.00114	-0.00117	-0.00116
	(!A1 * !B1 * !C1 * Y)	0.00169	0.00169	0.00168

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00067	0.00067	0.00067
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00067	0.00067	0.00066
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00063	-0.00063	-0.00062
	(A1 * A2 * B2 * !C1 * !Y)	0.00067	0.00067	0.00066
	(A1 * A2 * B2 * !C1 * !Y)	-0.00063	-0.00063	-0.00062
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00062	0.00062	0.00062
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00064	-0.00064	-0.00064
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00062	0.00062	0.00062
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B2 * !C1 * !Y)	0.00062	0.00062	0.00062
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00067	0.00067	0.00066
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00061	0.00062	0.00062
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00026	0.00026	0.00026
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00099	-0.00100	-0.00100
	(A1 * !A2 * !B2 * !C1 * Y)	0.00026	0.00026	0.00026
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00099	-0.00100	-0.00100
	(!A1 * B2 * C1 * C2 * !Y)	0.00067	0.00067	0.00066
	(!A1 * B2 * C1 * C2 * !Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !B2 * C1 * C2 * !Y)	0.00061	0.00062	0.00062
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00085	-0.00085	-0.00085
	(!A1 * !B2 * C1 * !C2 * Y)	0.00026	0.00026	0.00026
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00099	-0.00100	-0.00100
	(!A1 * !B2 * !C1 * Y)	0.00026	0.00026	0.00026
	(!A1 * !B2 * !C1 * Y)	-0.00099	-0.00100	-0.00100

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00139	0.00139	0.00139
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00135	-0.00135	-0.00134
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00138	0.00139	0.00138
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * A2 * B2 * !C1 * !Y)	0.00138	0.00139	0.00138
	(A1 * A2 * B2 * !C1 * !Y)	-0.00129	-0.00129	-0.00129
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00131	-0.00132	-0.00131
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00130	0.00131	0.00130
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * !B2 * !C1 * !Y)	0.00130	0.00131	0.00130
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00129	-0.00129	-0.00128
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00138	0.00138	0.00138
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00166	-0.00170	-0.00168
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00129	0.00129	0.00129
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00175	-0.00175	-0.00176
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00054	0.00054	0.00052
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00210	-0.00211	-0.00213
	(A1 * !A2 * !B2 * !C1 * Y)	0.00054	0.00054	0.00052
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00210	-0.00211	-0.00213
	(!A1 * B2 * C1 * C2 * !Y)	0.00138	0.00138	0.00138
	(!A1 * B2 * C1 * C2 * !Y)	-0.00167	-0.00170	-0.00168
	(!A1 * !B2 * C1 * C2 * !Y)	0.00129	0.00129	0.00129
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00175	-0.00176	-0.00176
	(!A1 * !B2 * C1 * !C2 * Y)	0.00054	0.00054	0.00052
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00210	-0.00211	-0.00213
	(!A1 * !B2 * !C1 * Y)	0.00054	0.00054	0.00052
	(!A1 * !B2 * !C1 * Y)	-0.00210	-0.00211	-0.00213

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00066	-0.00067	-0.00066
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00065	0.00066	0.00065
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00064	0.00064	0.00064
	(A1 * A2 * B2 * !C1 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * B2 * !C1 * !Y)	0.00064	0.00064	0.00064
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00061	-0.00062	-0.00062
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00064	0.00064	0.00064
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00061	-0.00062	-0.00062
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00062	0.00063	0.00062
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00061	-0.00062	-0.00062
	(A1 * A2 * !B2 * !C1 * !Y)	0.00062	0.00063	0.00062
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00066	-0.00067	-0.00066
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00082	0.00082	0.00081
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00060	-0.00062	-0.00062
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00085	0.00086	0.00085
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00025	-0.00025	-0.00025
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00101	0.00101	0.00100
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00025	-0.00025	-0.00025
	(A1 * !A2 * !B2 * !C1 * Y)	0.00101	0.00101	0.00100
	(!A1 * B2 * C1 * C2 * !Y)	-0.00067	-0.00067	-0.00066
	(!A1 * B2 * C1 * C2 * !Y)	0.00082	0.00082	0.00081
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00060	-0.00062	-0.00062
	(!A1 * !B2 * C1 * C2 * !Y)	0.00085	0.00086	0.00085
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00025	-0.00025	-0.00025
	(!A1 * !B2 * C1 * !C2 * Y)	0.00101	0.00101	0.00100
	(!A1 * !B2 * !C1 * Y)	-0.00025	-0.00025	-0.00025
	(!A1 * !B2 * !C1 * Y)	0.00101	0.00101	0.00100

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00139	-0.00139	-0.00138
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00135	0.00135	0.00134
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00138	-0.00138	-0.00138
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00132	0.00131	0.00131
	(A1 * A2 * B2 * !C1 * !Y)	-0.00138	-0.00138	-0.00138
	(A1 * A2 * B2 * !C1 * !Y)	0.00132	0.00131	0.00131
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00129	-0.00132	-0.00131
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00128	-0.00131	-0.00130
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00129	0.00129	0.00128
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00128	-0.00131	-0.00130
	(A1 * A2 * !B2 * !C1 * !Y)	0.00129	0.00129	0.00128
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00137	-0.00138	-0.00138
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00167	0.00170	0.00168
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00127	-0.00129	-0.00129
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00176	0.00177	0.00176
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00052	-0.00051	-0.00051
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00216	0.00214	0.00213
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00052	-0.00051	-0.00051
	(A1 * !A2 * !B2 * !C1 * Y)	0.00216	0.00214	0.00213
	(!A1 * B2 * C1 * C2 * !Y)	-0.00138	-0.00138	-0.00138
	(!A1 * B2 * C1 * C2 * !Y)	0.00168	0.00170	0.00168
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00127	-0.00129	-0.00129
	(!A1 * !B2 * C1 * C2 * !Y)	0.00175	0.00176	0.00176
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00052	-0.00051	-0.00051
	(!A1 * !B2 * C1 * !C2 * Y)	0.00216	0.00214	0.00213
	(!A1 * !B2 * !C1 * Y)	-0.00052	-0.00051	-0.00051
	(!A1 * !B2 * !C1 * Y)	0.00216	0.00214	0.00213

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00074	0.00074	0.00073
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00073	0.00073	0.00073
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00063	-0.00063	-0.00062
	(A1 * A2 * B1 * !C1 * !Y)	0.00074	0.00073	0.00073
	(A1 * A2 * B1 * !C1 * !Y)	-0.00063	-0.00063	-0.00062
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00069	0.00070	0.00069
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00069	0.00070	0.00069
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00062	-0.00063	-0.00062
	(A1 * A2 * !B1 * !C1 * !Y)	0.00069	0.00070	0.00069
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00062	-0.00063	-0.00062
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00073	0.00073	0.00073
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00081	-0.00083	-0.00082
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00068	0.00069	0.00068
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00085	-0.00086	-0.00085
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00060	0.00060	0.00059
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00094	-0.00095	-0.00094
	(A1 * !A2 * !B1 * !C1 * Y)	0.00060	0.00060	0.00059
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00094	-0.00095	-0.00094
	(!A1 * B1 * C1 * C2 * !Y)	0.00073	0.00073	0.00073
	(!A1 * B1 * C1 * C2 * !Y)	-0.00081	-0.00083	-0.00082
	(!A1 * !B1 * C1 * !C2 * Y)	0.00060	0.00060	0.00059
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !B1 * !C1 * Y)	0.00060	0.00060	0.00059
	(!A1 * !B1 * !C1 * Y)	-0.00094	-0.00095	-0.00094

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00134	0.00136	0.00135
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00134	0.00135	0.00134
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00117	-0.00118	-0.00118
	(A1 * A2 * B1 * !C1 * !Y)	0.00134	0.00135	0.00134
	(A1 * A2 * B1 * !C1 * !Y)	-0.00118	-0.00118	-0.00118
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00127	0.00127	0.00126
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00126	0.00127	0.00126
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00117	-0.00118	-0.00118
	(A1 * A2 * !B1 * !C1 * !Y)	0.00126	0.00127	0.00126
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00117	-0.00118	-0.00118
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00135	0.00135	0.00134
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00153	-0.00156	-0.00155
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00126	0.00126	0.00125
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00118	0.00120	0.00118
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00168	-0.00170	-0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	0.00118	0.00120	0.00118
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00168	-0.00170	-0.00169
	(!A1 * B1 * C1 * C2 * !Y)	0.00135	0.00135	0.00134
	(!A1 * B1 * C1 * C2 * !Y)	-0.00154	-0.00156	-0.00155
	(!A1 * !B1 * C1 * !C2 * Y)	0.00118	0.00120	0.00118
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00168	-0.00170	-0.00169
	(!A1 * !B1 * !C1 * Y)	0.00118	0.00120	0.00118
	(!A1 * !B1 * !C1 * Y)	-0.00169	-0.00170	-0.00169

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00073	-0.00073	-0.00073
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00066	0.00066	0.00066
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00064	0.00064	0.00064
	(A1 * A2 * B1 * !C1 * !Y)	-0.00073	-0.00073	-0.00072
	(A1 * A2 * B1 * !C1 * !Y)	0.00064	0.00064	0.00064
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00068	-0.00070	-0.00069
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00064	0.00065	0.00064
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00068	-0.00070	-0.00069
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00062	0.00063	0.00062
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00068	-0.00070	-0.00069
	(A1 * A2 * !B1 * !C1 * !Y)	0.00062	0.00063	0.00062
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00073	-0.00073	-0.00073
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00082	0.00083	0.00082
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00067	-0.00069	-0.00068
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00085	0.00086	0.00085
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00058	-0.00060	-0.00059
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00094	0.00095	0.00094
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00058	-0.00060	-0.00059
	(A1 * !A2 * !B1 * !C1 * Y)	0.00094	0.00095	0.00094
	(!A1 * B1 * C1 * C2 * !Y)	-0.00073	-0.00073	-0.00073
	(!A1 * B1 * C1 * C2 * !Y)	0.00082	0.00083	0.00082
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00058	-0.00060	-0.00059
	(!A1 * !B1 * C1 * !C2 * Y)	0.00094	0.00095	0.00094
	(!A1 * !B1 * !C1 * Y)	-0.00058	-0.00060	-0.00059
	(!A1 * !B1 * !C1 * Y)	0.00094	0.00095	0.00094

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00124	0.00124	0.00124
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00120	0.00121	0.00121
	(A1 * A2 * B1 * !C1 * !Y)	-0.00134	-0.00134	-0.00133
	(A1 * A2 * B1 * !C1 * !Y)	0.00120	0.00121	0.00121
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00125	-0.00127	-0.00126
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00121	0.00122	0.00121
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00125	-0.00127	-0.00126
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00118	0.00118	0.00118
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00125	-0.00127	-0.00126
	(A1 * A2 * !B1 * !C1 * !Y)	0.00118	0.00118	0.00118
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00135	-0.00135	-0.00134
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00156	0.00156	0.00155
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00124	-0.00126	-0.00125
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00163	0.00163	0.00162
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00117	-0.00120	-0.00118
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00170	0.00170	0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00117	-0.00120	-0.00118
	(A1 * !A2 * !B1 * !C1 * Y)	0.00170	0.00170	0.00169
	(!A1 * B1 * C1 * C2 * !Y)	-0.00135	-0.00135	-0.00134
	(!A1 * B1 * C1 * C2 * !Y)	0.00156	0.00156	0.00155
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00117	-0.00120	-0.00118
	(!A1 * !B1 * C1 * !C2 * Y)	0.00170	0.00170	0.00169
	(!A1 * !B1 * !C1 * Y)	-0.00117	-0.00120	-0.00118
	(!A1 * !B1 * !C1 * Y)	0.00170	0.00170	0.00169

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A1 * B1 * B2 * C2 * !Y)	0.00081	0.00082	0.00081
	(A1 * B1 * B2 * C2 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * B1 * B2 * !C2 * !Y)	0.00077	0.00078	0.00077
	(A1 * B1 * B2 * !C2 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00077	0.00077	0.00077
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * C2 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * !B1 * C2 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * !C2 * !Y)	0.00077	0.00077	0.00077
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00055	-0.00055	-0.00055
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00029	0.00029	0.00029
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00102	-0.00102	-0.00103
	(A1 * !A2 * !B1 * !C2 * Y)	0.00029	0.00029	0.00029
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00102	-0.00102	-0.00103
	(!A1 * B1 * B2 * C2 * !Y)	0.00081	0.00082	0.00081
	(!A1 * B1 * B2 * C2 * !Y)	-0.00055	-0.00055	-0.00055
	(!A1 * B1 * B2 * !C2 * !Y)	0.00077	0.00077	0.00077
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00055	-0.00055	-0.00055
	(!A1 * B1 * !B2 * !C2 * Y)	0.00029	0.00029	0.00029
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00102	-0.00102	-0.00103
	(!A1 * !B1 * !C2 * Y)	0.00029	0.00029	0.00029
	(!A1 * !B1 * !C2 * Y)	-0.00102	-0.00102	-0.00103

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00142	0.00143	0.00142
	(A1 * B1 * B2 * C2 * !Y)	-0.00108	-0.00108	-0.00108
	(A1 * B1 * B2 * !C2 * !Y)	0.00133	0.00134	0.00134
	(A1 * B1 * B2 * !C2 * !Y)	-0.00107	-0.00108	-0.00107
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00142	0.00143	0.00142
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00108	-0.00108	-0.00108
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00133	0.00134	0.00133
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00108	-0.00108	-0.00107
	(A1 * A2 * !B1 * C2 * !Y)	0.00142	0.00143	0.00142
	(A1 * A2 * !B1 * C2 * !Y)	-0.00108	-0.00108	-0.00108
	(A1 * A2 * !B1 * !C2 * !Y)	0.00133	0.00134	0.00133
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00107	-0.00108	-0.00107
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00053	0.00053	0.00051
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00189	-0.00189	-0.00191
	(A1 * !A2 * !B1 * !C2 * Y)	0.00053	0.00053	0.00051
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00189	-0.00189	-0.00191
	(!A1 * B1 * B2 * C2 * !Y)	0.00142	0.00143	0.00142
	(!A1 * B1 * B2 * C2 * !Y)	-0.00108	-0.00108	-0.00108
	(!A1 * B1 * B2 * !C2 * !Y)	0.00133	0.00134	0.00133
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00108	-0.00108	-0.00108
	(!A1 * B1 * !B2 * !C2 * Y)	0.00053	0.00053	0.00051
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00189	-0.00189	-0.00191
	(!A1 * !B1 * !C2 * Y)	0.00053	0.00053	0.00051
	(!A1 * !B1 * !C2 * Y)	-0.00189	-0.00189	-0.00191

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C2 * !Y)**	-0.00076	-0.00077	-0.00081
	(A1 * B1 * B2 * C2 * !Y)	0.00060	0.00060	0.00056
	(A1 * B1 * B2 * !C2 * !Y)	-0.00076	-0.00078	-0.00077
	(A1 * B1 * B2 * !C2 * !Y)	0.00055	0.00055	0.00055
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00063	-0.00064	-0.00078
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00070	0.00070	0.00059
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00076	-0.00077	-0.00077
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00055	0.00055	0.00055
	(A1 * A2 * !B1 * C2 * !Y)	-0.00063	-0.00064	-0.00078
	(A1 * A2 * !B1 * C2 * !Y)	0.00070	0.00070	0.00059
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00076	-0.00077	-0.00077
	(A1 * A2 * !B1 * !C2 * !Y)	0.00055	0.00055	0.00055
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00029	-0.00028	-0.00028
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00104	0.00103	0.00103
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00029	-0.00028	-0.00028
	(A1 * !A2 * !B1 * !C2 * Y)	0.00104	0.00103	0.00103
	(!A1 * B1 * B2 * C2 * !Y)	-0.00076	-0.00076	-0.00081
	(!A1 * B1 * B2 * C2 * !Y)	0.00061	0.00060	0.00056
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00076	-0.00077	-0.00077
	(!A1 * B1 * B2 * !C2 * !Y)	0.00055	0.00055	0.00055
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00029	-0.00028	-0.00028
	(!A1 * B1 * !B2 * !C2 * Y)	0.00104	0.00103	0.00103
	(!A1 * !B1 * !C2 * Y)	-0.00029	-0.00028	-0.00028
	(!A1 * !B1 * !C2 * Y)	0.00104	0.00103	0.00103

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00134	-0.00135	-0.00142
	(A1 * B1 * B2 * C2 * !Y)	0.00117	0.00116	0.00109
	(A1 * B1 * B2 * !C2 * !Y)	-0.00131	-0.00134	-0.00134
	(A1 * B1 * B2 * !C2 * !Y)	0.00107	0.00108	0.00107
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00108	-0.00111	-0.00136
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00133	0.00133	0.00114
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00131	-0.00134	-0.00133
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00108	0.00108	0.00107
	(A1 * A2 * !B1 * C2 * !Y)	-0.00108	-0.00111	-0.00136
	(A1 * A2 * !B1 * C2 * !Y)	0.00134	0.00133	0.00114
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00131	-0.00134	-0.00133
	(A1 * A2 * !B1 * !C2 * !Y)	0.00108	0.00108	0.00107
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00050	-0.00050	-0.00050
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00191	0.00192	0.00191
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00050	-0.00050	-0.00050
	(A1 * !A2 * !B1 * !C2 * Y)	0.00191	0.00192	0.00191
	(!A1 * B1 * B2 * C2 * !Y)	-0.00131	-0.00133	-0.00142
	(!A1 * B1 * B2 * C2 * !Y)	0.00117	0.00117	0.00110
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00131	-0.00134	-0.00133
	(!A1 * B1 * B2 * !C2 * !Y)	0.00108	0.00108	0.00108
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * B1 * !B2 * !C2 * Y)	0.00191	0.00192	0.00191
	(!A1 * !B1 * !C2 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * !B1 * !C2 * Y)	0.00191	0.00192	0.00191

Passive power(pJ) for C2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * !Y)**	0.00086	0.00085	0.00085
	(A1 * B1 * B2 * C1 * !Y)	-0.00057	-0.00056	-0.00056
	(A1 * B1 * B2 * !C1 * !Y)	0.00081	0.00082	0.00081
	(A1 * B1 * B2 * !C1 * !Y)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00086	0.00085	0.00085
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00057	-0.00056	-0.00056
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * !B1 * C1 * !Y)	0.00086	0.00085	0.00085
	(A1 * A2 * !B1 * C1 * !Y)	-0.00057	-0.00056	-0.00056
	(A1 * A2 * !B1 * !C1 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00056	-0.00056	-0.00056
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00061	0.00062	0.00061
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00096	-0.00097	-0.00096
	(A1 * !A2 * !B1 * !C1 * Y)	0.00061	0.00062	0.00061
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00096	-0.00097	-0.00096
	(!A1 * B1 * B2 * C1 * !Y)	0.00086	0.00085	0.00085
	(!A1 * B1 * B2 * C1 * !Y)	-0.00057	-0.00056	-0.00056
	(!A1 * B1 * B2 * !C1 * !Y)	0.00080	0.00082	0.00081
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00056	-0.00056	-0.00056
	(!A1 * B1 * !B2 * !C1 * Y)	0.00061	0.00062	0.00061
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00096	-0.00097	-0.00096
	(!A1 * !B1 * !C1 * Y)	0.00061	0.00062	0.00061
	(!A1 * !B1 * !C1 * Y)	-0.00096	-0.00097	-0.00096

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00170	0.00171	0.00170
	(A1 * B1 * B2 * C1 * !Y)	-0.00112	-0.00112	-0.00111
	(A1 * B1 * B2 * !C1 * !Y)	0.00162	0.00163	0.00162
	(A1 * B1 * B2 * !C1 * !Y)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00170	0.00172	0.00170
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00111	-0.00112	-0.00111
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00162	0.00163	0.00162
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * !B1 * C1 * !Y)	0.00170	0.00172	0.00170
	(A1 * A2 * !B1 * C1 * !Y)	-0.00112	-0.00112	-0.00111
	(A1 * A2 * !B1 * !C1 * !Y)	0.00163	0.00163	0.00162
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00111	-0.00111	-0.00111
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00120	0.00123	0.00121
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00191	-0.00193	-0.00192
	(A1 * !A2 * !B1 * !C1 * Y)	0.00121	0.00123	0.00121
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00192	-0.00193	-0.00192
	(!A1 * B1 * B2 * C1 * !Y)	0.00170	0.00172	0.00170
	(!A1 * B1 * B2 * C1 * !Y)	-0.00112	-0.00113	-0.00111
	(!A1 * B1 * B2 * !C1 * !Y)	0.00163	0.00163	0.00162
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00111	-0.00112	-0.00111
	(!A1 * B1 * !B2 * !C1 * Y)	0.00120	0.00123	0.00121
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00192	-0.00193	-0.00192
	(!A1 * !B1 * !C1 * Y)	0.00121	0.00123	0.00121
	(!A1 * !B1 * !C1 * Y)	-0.00192	-0.00193	-0.00192

Passive power(pJ) for C2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * !Y)**	-0.00080	-0.00081	-0.00085
	(A1 * B1 * B2 * C1 * !Y)	0.00060	0.00060	0.00057
	(A1 * B1 * B2 * !C1 * !Y)	-0.00080	-0.00082	-0.00081
	(A1 * B1 * B2 * !C1 * !Y)	0.00056	0.00056	0.00056
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00066	-0.00067	-0.00082
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00071	0.00070	0.00059
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00080	-0.00082	-0.00081
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00056	0.00056	0.00056
	(A1 * A2 * !B1 * C1 * !Y)	-0.00066	-0.00067	-0.00081
	(A1 * A2 * !B1 * C1 * !Y)	0.00071	0.00070	0.00059
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00080	-0.00082	-0.00081
	(A1 * A2 * !B1 * !C1 * !Y)	0.00056	0.00056	0.00056
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00060	-0.00062	-0.00061
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00096	0.00097	0.00096
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00060	-0.00062	-0.00061
	(A1 * !A2 * !B1 * !C1 * Y)	0.00096	0.00097	0.00096
	(!A1 * B1 * B2 * C1 * !Y)	-0.00080	-0.00080	-0.00085
	(!A1 * B1 * B2 * C1 * !Y)	0.00061	0.00061	0.00057
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00080	-0.00082	-0.00081
	(!A1 * B1 * B2 * !C1 * !Y)	0.00056	0.00056	0.00056
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00060	-0.00062	-0.00061
	(!A1 * B1 * !B2 * !C1 * Y)	0.00096	0.00097	0.00096
	(!A1 * !B1 * !C1 * Y)	-0.00060	-0.00062	-0.00061
	(!A1 * !B1 * !C1 * Y)	0.00096	0.00097	0.00096

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00161	-0.00162	-0.00170
	(A1 * B1 * B2 * C1 * !Y)	0.00120	0.00119	0.00113
	(A1 * B1 * B2 * !C1 * !Y)	-0.00160	-0.00163	-0.00162
	(A1 * B1 * B2 * !C1 * !Y)	0.00111	0.00112	0.00111
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00137	-0.00138	-0.00164
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00138	0.00137	0.00117
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00160	-0.00163	-0.00162
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00111	0.00112	0.00111
	(A1 * A2 * !B1 * C1 * !Y)	-0.00137	-0.00138	-0.00164
	(A1 * A2 * !B1 * C1 * !Y)	0.00138	0.00137	0.00117
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00160	-0.00163	-0.00162
	(A1 * A2 * !B1 * !C1 * !Y)	0.00111	0.00112	0.00111
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00119	-0.00123	-0.00121
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00192	0.00193	0.00192
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00119	-0.00123	-0.00121
	(A1 * !A2 * !B1 * !C1 * Y)	0.00192	0.00193	0.00192
	(!A1 * B1 * B2 * C1 * !Y)	-0.00159	-0.00161	-0.00169
	(!A1 * B1 * B2 * C1 * !Y)	0.00122	0.00121	0.00113
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00160	-0.00163	-0.00162
	(!A1 * B1 * B2 * !C1 * !Y)	0.00111	0.00112	0.00111
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00119	-0.00123	-0.00121
	(!A1 * B1 * !B2 * !C1 * Y)	0.00192	0.00193	0.00192
	(!A1 * !B1 * !C1 * Y)	-0.00119	-0.00123	-0.00121
	(!A1 * !B1 * !C1 * Y)	0.00192	0.00193	0.00192

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT						OUTPUT
A1	A2	B1	B2	C1	C2	X
0	x	0	x	0	x	0
0	x	0	x	1	0	0
0	x	x	x	1	1	1
0	x	1	0	0	x	0
0	x	1	0	1	0	0
x	x	1	1	x	x	1
1	0	0	x	0	x	0
1	0	0	x	1	0	0
1	0	x	x	1	1	1
1	0	1	0	0	x	0
1	0	1	0	1	0	0
1	1	x	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222o_1	15.98400
sky130_fd_sc_hs__a222o_2	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	X
sky130_fd_sc_hs__a222o_1	0.00225	0.00231	0.00236	0.00225	0.00239	0.00242	0.18843
sky130_fd_sc_hs__a222o_2	0.00230	0.00214	0.00229	0.00223	0.00236	0.00247	0.35849

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.00014	0.00020
sky130_fd_sc_hs__a222o_2	0.00000	0.00018	0.00025

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (RR)	0.33725	1.78257	10.10740
	A2->X (RR)	0.34531	1.77838	10.22730
	B1->X (RR)	0.32656	1.76109	10.03460
	B2->X (RR)	0.33255	1.75629	10.15110
	C1->X (RR)	0.31493	1.73433	9.94282
	C2->X (RR)	0.32149	1.73143	10.05470
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.36194	1.67463	10.37790
	A2->X (RR)	0.37239	1.65738	10.46810
	B1->X (RR)	0.34393	1.64106	10.31430
	B2->X (RR)	0.35111	1.63169	10.40320
	C1->X (RR)	0.33212	1.62043	10.24600
	C2->X (RR)	0.34042	1.61200	10.33130

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	2.26113	3.45824	9.80646
	A2->X (FF)	2.44248	3.65264	10.00270
	B1->X (FF)	2.16213	3.30818	9.71161
	B2->X (FF)	2.30751	3.47359	9.88840
	C1->X (FF)	1.78440	2.81813	8.79374
	C2->X (FF)	1.94124	2.99272	8.96282
sky130_fd_sc_hs__a222o_2	A1->X (FF)	2.70379	3.94544	10.40140
	A2->X (FF)	2.86226	4.12880	10.58720
	B1->X (FF)	2.63070	3.82340	10.34680
	B2->X (FF)	2.74523	3.95606	10.48080
	C1->X (FF)	2.27817	3.35506	9.42796
	C2->X (FF)	2.47249	3.55987	9.62133

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00682	0.00678	0.00668
	A1	0.00334	0.00331	0.00321
	A2	0.00723	0.00719	0.00710
	A2	0.00336	0.00332	0.00323
	B1	0.00606	0.00605	0.00596
	B1	0.00268	0.00269	0.00261
	B2	0.00638	0.00640	0.00633
	B2	0.00273	0.00276	0.00270
	C1	0.00503	0.00500	0.00492
	C1	0.00180	0.00177	0.00169
	C2	0.00538	0.00538	0.00531
	C2	0.00182	0.00182	0.00176
sky130_fd_sc_hs__a222o_2	A1	0.00832	0.00838	0.00837
	A1	0.00494	0.00502	0.00502
	A2	0.00869	0.00880	0.00882
	A2	0.00491	0.00503	0.00506
	B1	0.00749	0.00757	0.00755
	B1	0.00423	0.00432	0.00430
	B2	0.00784	0.00796	0.00795
	B2	0.00422	0.00435	0.00435
	C1	0.00665	0.00670	0.00664
	C1	0.00351	0.00357	0.00350
	C2	0.00705	0.00713	0.00707
	C2	0.00349	0.00358	0.00352

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00291	0.00290	0.00267
	A1	0.00674	0.00673	0.00671
	A2	0.00306	0.00306	0.00287
	A2	0.00726	0.00725	0.00721
	B1	0.00289	0.00287	0.00256
	B1	0.00641	0.00638	0.00635
	B2	0.00307	0.00309	0.00286
	B2	0.00683	0.00684	0.00681
	C1	0.00286	0.00282	0.00280
	C1	0.00602	0.00598	0.00594
	C2	0.00304	0.00304	0.00297
	C2	0.00649	0.00649	0.00643
sky130_fd_sc_hs__a222o_2	A1	0.00396	0.00402	0.00404
	A1	0.00767	0.00772	0.00774
	A2	0.00428	0.00443	0.00453
	A2	0.00834	0.00848	0.00855
	B1	0.00415	0.00425	0.00429
	B1	0.00752	0.00762	0.00768
	B2	0.00430	0.00445	0.00454
	B2	0.00801	0.00814	0.00820
	C1	0.00410	0.00419	0.00325
	C1	0.00715	0.00724	0.00725
	C2	0.00428	0.00438	0.00442
	C2	0.00771	0.00781	0.00782

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a222o_1	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00067	0.00067	0.00067
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00081	-0.00082	-0.00082
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00067	0.00067	0.00067
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00081	-0.00082	-0.00082
	(A2 * B1 * B2 * !C1 * X)	0.00067	0.00067	0.00067
	(A2 * B1 * B2 * !C1 * X)	-0.00081	-0.00082	-0.00082
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00067	0.00068	0.00067
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00079	-0.00080	-0.00080
	(A2 * !B1 * C1 * C2 * X)	0.00067	0.00068	0.00067
	(A2 * !B1 * C1 * C2 * X)	-0.00079	-0.00080	-0.00080
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00063	0.00063	0.00063
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00086	-0.00086	-0.00086
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00063	0.00063	0.00063
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00086	-0.00086	-0.00086
	(!A2 * B1 * B2 * !C1 * X)	0.00063	0.00063	0.00063
	(!A2 * B1 * B2 * !C1 * X)	-0.00086	-0.00086	-0.00086
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00062	0.00063	0.00063
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00085	-0.00086	-0.00086
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00028	0.00028	0.00027
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00100	-0.00101	-0.00101
	(!A2 * B1 * !B2 * !C1 * !X)	0.00028	0.00028	0.00027
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00100	-0.00101	-0.00101
	(!A2 * !B1 * C1 * C2 * X)	0.00063	0.00063	0.00063
	(!A2 * !B1 * C1 * C2 * X)	-0.00086	-0.00086	-0.00086
	(!A2 * !B1 * C1 * !C2 * !X)	0.00028	0.00028	0.00027
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00100	-0.00101	-0.00101
	(!A2 * !B1 * !C1 * !X)	0.00028	0.00028	0.00027
	(!A2 * !B1 * !C1 * !X)	-0.00100	-0.00101	-0.00101

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00073	0.00073	0.00073
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00081	-0.00082	-0.00082
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00073	0.00073	0.00073
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00081	-0.00082	-0.00082
	(A2 * B1 * B2 * !C1 * X)	0.00073	0.00073	0.00073
	(A2 * B1 * B2 * !C1 * X)	-0.00081	-0.00082	-0.00082
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00072	0.00073	0.00073
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00077	-0.00079	-0.00079
	(A2 * !B1 * C1 * C2 * X)	0.00072	0.00073	0.00073
	(A2 * !B1 * C1 * C2 * X)	-0.00077	-0.00079	-0.00079
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00069	0.00069	0.00069
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00084	-0.00085	-0.00084
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00069	0.00069	0.00069
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00084	-0.00085	-0.00084
	(!A2 * B1 * B2 * !C1 * X)	0.00069	0.00069	0.00069
	(!A2 * B1 * B2 * !C1 * X)	-0.00084	-0.00085	-0.00084
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00068	0.00069	0.00069
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00084	-0.00085	-0.00085
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00032	0.00032	0.00029
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00102	-0.00102	-0.00105
	(!A2 * B1 * !B2 * !C1 * !X)	0.00032	0.00032	0.00029
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00102	-0.00102	-0.00105
	(!A2 * !B1 * C1 * C2 * X)	0.00069	0.00069	0.00069
	(!A2 * !B1 * C1 * C2 * X)	-0.00085	-0.00085	-0.00085
	(!A2 * !B1 * C1 * !C2 * !X)	0.00032	0.00032	0.00029
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00102	-0.00102	-0.00105
	(!A2 * !B1 * !C1 * !X)	0.00032	0.00032	0.00029
	(!A2 * !B1 * !C1 * !X)	-0.00102	-0.00102	-0.00105

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A2 * B1 * B2 * C1 * C2 * X)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * C1 * C2 * X)	0.00082	0.00082	0.00082
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00082	0.00082	0.00082
	(A2 * B1 * B2 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * B2 * !C1 * X)	0.00082	0.00082	0.00082
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00080	0.00080	0.00080
	(A2 * !B1 * C1 * C2 * X)	-0.00067	-0.00067	-0.00067
	(A2 * !B1 * C1 * C2 * X)	0.00080	0.00080	0.00080
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00062	-0.00063	-0.00063
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00087	0.00087	0.00086
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00062	-0.00063	-0.00063
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00086	0.00087	0.00086
	(!A2 * B1 * B2 * !C1 * X)	-0.00062	-0.00063	-0.00063
	(!A2 * B1 * B2 * !C1 * X)	0.00086	0.00087	0.00086
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00062	-0.00063	-0.00063
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00086	0.00087	0.00086
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00027	-0.00026	-0.00026
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00103	0.00102	0.00101
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00027	-0.00026	-0.00026
	(!A2 * B1 * !B2 * !C1 * !X)	0.00103	0.00102	0.00101
	(!A2 * !B1 * C1 * C2 * X)	-0.00062	-0.00063	-0.00063
	(!A2 * !B1 * C1 * C2 * X)	0.00086	0.00087	0.00086
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00027	-0.00026	-0.00026
	(!A2 * !B1 * C1 * !C2 * !X)	0.00103	0.00102	0.00101
	(!A2 * !B1 * !C1 * !X)	-0.00027	-0.00026	-0.00026
	(!A2 * !B1 * !C1 * !X)	0.00103	0.00102	0.00101

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00072	-0.00073	-0.00072
	(A2 * B1 * B2 * C1 * C2 * X)	0.00082	0.00082	0.00082
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00072	-0.00073	-0.00072
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00082	0.00082	0.00082
	(A2 * B1 * B2 * !C1 * X)	-0.00072	-0.00073	-0.00072
	(A2 * B1 * B2 * !C1 * X)	0.00082	0.00082	0.00082
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00072	-0.00073	-0.00073
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00079	0.00079	0.00079
	(A2 * !B1 * C1 * C2 * X)	-0.00072	-0.00073	-0.00073
	(A2 * !B1 * C1 * C2 * X)	0.00079	0.00079	0.00079
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00068	-0.00069	-0.00069
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00085	0.00085	0.00084
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00068	-0.00069	-0.00069
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00085	0.00085	0.00084
	(!A2 * B1 * B2 * !C1 * X)	-0.00068	-0.00069	-0.00069
	(!A2 * B1 * B2 * !C1 * X)	0.00085	0.00085	0.00084
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00068	-0.00069	-0.00069
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00085	0.00086	0.00085
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00029	-0.00029	-0.00028
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00106	0.00106	0.00105
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00029	-0.00029	-0.00028
	(!A2 * B1 * !B2 * !C1 * !X)	0.00106	0.00106	0.00105
	(!A2 * !B1 * C1 * C2 * X)	-0.00068	-0.00069	-0.00069
	(!A2 * !B1 * C1 * C2 * X)	0.00085	0.00086	0.00085
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00029	-0.00029	-0.00028
	(!A2 * !B1 * C1 * !C2 * !X)	0.00106	0.00106	0.00105
	(!A2 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00028
	(!A2 * !B1 * !C1 * !X)	0.00106	0.00106	0.00105

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * B1 * B2 * C1 * C2 * X)	0.00076	0.00076	0.00076
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00078	-0.00079	-0.00079
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00076	0.00076	0.00076
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00078	-0.00079	-0.00079
	(A1 * B1 * B2 * !C1 * X)	0.00076	0.00076	0.00076
	(A1 * B1 * B2 * !C1 * X)	-0.00078	-0.00079	-0.00079
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00076	0.00077	0.00076
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00076	-0.00077	-0.00077
	(A1 * !B1 * C1 * C2 * X)	0.00076	0.00077	0.00076
	(A1 * !B1 * C1 * C2 * X)	-0.00076	-0.00077	-0.00077
	(!A1 * B1 * B2 * X)	0.00072	0.00072	0.00072
	(!A1 * B1 * B2 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00072	0.00072	0.00072
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00082	-0.00083	-0.00082
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00060	0.00060	0.00060
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00094	-0.00095	-0.00094
	(!A1 * B1 * !B2 * !C1 * !X)	0.00060	0.00060	0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00094	-0.00095	-0.00094
	(!A1 * !B1 * C1 * !C2 * !X)	0.00060	0.00060	0.00060
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00094	-0.00095	-0.00094
	(!A1 * !B1 * !C1 * !X)	0.00060	0.00060	0.00060
	(!A1 * !B1 * !C1 * !X)	-0.00094	-0.00095	-0.00094

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00071	0.00071	0.00071
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00081	-0.00083	-0.00082
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00071	0.00071	0.00071
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00081	-0.00083	-0.00082
	(A1 * B1 * B2 * !C1 * X)	0.00071	0.00071	0.00071
	(A1 * B1 * B2 * !C1 * X)	-0.00081	-0.00083	-0.00082
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00071	0.00071	0.00071
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00078	-0.00079	-0.00079
	(A1 * !B1 * C1 * C2 * X)	0.00071	0.00071	0.00071
	(A1 * !B1 * C1 * C2 * X)	-0.00078	-0.00080	-0.00079
	(!A1 * B1 * B2 * X)	0.00066	0.00067	0.00066
	(!A1 * B1 * B2 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00067	0.00067	0.00066
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00085	-0.00085	-0.00084
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00066	0.00066	0.00066
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * B1 * !B2 * !C1 * !X)	0.00066	0.00066	0.00066
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !B1 * C1 * !C2 * !X)	0.00066	0.00066	0.00066
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !B1 * !C1 * !X)	0.00066	0.00065	0.00066
	(!A1 * !B1 * !C1 * !X)	-0.00085	-0.00085	-0.00085

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

	(A1 * B1 * B2 * C1 * C2 * X)	-0.00076	-0.00076	-0.00076
	(A1 * B1 * B2 * C1 * C2 * X)	0.00079	0.00079	0.00079
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00076	-0.00076	-0.00076
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00079	0.00079	0.00079
	(A1 * B1 * B2 * !C1 * X)	-0.00076	-0.00076	-0.00076
	(A1 * B1 * B2 * !C1 * X)	0.00079	0.00079	0.00079
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00076	-0.00076	-0.00076
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00077	0.00077	0.00077
	(A1 * !B1 * C1 * C2 * X)	-0.00076	-0.00076	-0.00076
	(A1 * !B1 * C1 * C2 * X)	0.00077	0.00077	0.00077
	(!A1 * B1 * B2 * X)	-0.00070	-0.00072	-0.00072
sky130_fd_sc_hs__a222o_1	**(!A1 * B1 * B2 * X)**	0.00082	0.00083	0.00082
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00070	-0.00072	-0.00072
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00082	0.00083	0.00082
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00094	0.00095	0.00094
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	0.00094	0.00095	0.00094
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * !B1 * C1 * !C2 * !X)	0.00094	0.00095	0.00094
	(!A1 * !B1 * !C1 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * !B1 * !C1 * !X)	0.00094	0.00095	0.00094

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00070	-0.00071	-0.00070
	(A1 * B1 * B2 * C1 * C2 * X)	0.00082	0.00083	0.00082
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00070	-0.00071	-0.00070
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00082	0.00083	0.00082
	(A1 * B1 * B2 * !C1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * B1 * B2 * !C1 * X)	0.00082	0.00083	0.00082
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00071	-0.00071	-0.00071
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00079	0.00079	0.00079
	(A1 * !B1 * C1 * C2 * X)	-0.00071	-0.00071	-0.00071
	(A1 * !B1 * C1 * C2 * X)	0.00079	0.00080	0.00079
	(!A1 * B1 * B2 * X)	-0.00065	-0.00067	-0.00066
	(!A1 * B1 * B2 * X)	0.00085	0.00085	0.00084
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00065	-0.00067	-0.00066
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00085	0.00085	0.00084
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00064	-0.00066	-0.00066
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00085	0.00086	0.00085
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00064	-0.00066	-0.00066
	(!A1 * B1 * !B2 * !C1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00064	-0.00066	-0.00066
	(!A1 * !B1 * C1 * !C2 * !X)	0.00085	0.00086	0.00085
	(!A1 * !B1 * !C1 * !X)	-0.00064	-0.00065	-0.00066
	(!A1 * !B1 * !C1 * !X)	0.00085	0.00086	0.00085

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222o_1	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00070	0.00070	0.00070
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00066	-0.00066	-0.00065
	(A1 * A2 * B2 * !C1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * B2 * !C1 * X)	-0.00066	-0.00066	-0.00065
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * !B2 * !C1 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * !B2 * !C1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00070	0.00070	0.00070
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00084	-0.00085	-0.00085
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00065	0.00065	0.00065
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00088	-0.00089	-0.00089
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00028	0.00028	0.00028
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00105	-0.00105	-0.00106
	(A1 * !A2 * !B2 * !C1 * !X)	0.00028	0.00028	0.00028
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00105	-0.00105	-0.00106
	(!A1 * B2 * C1 * C2 * X)	0.00070	0.00070	0.00070
	(!A1 * B2 * C1 * C2 * X)	-0.00084	-0.00085	-0.00085
	(!A1 * !B2 * C1 * C2 * X)	0.00065	0.00065	0.00065
	(!A1 * !B2 * C1 * C2 * X)	-0.00088	-0.00088	-0.00089
	(!A1 * !B2 * C1 * !C2 * !X)	0.00028	0.00028	0.00028
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00105	-0.00105	-0.00106
	(!A1 * !B2 * !C1 * !X)	0.00028	0.00028	0.00028
	(!A1 * !B2 * !C1 * !X)	-0.00105	-0.00105	-0.00106

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00068	0.00068	0.00068
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00064	-0.00064	-0.00063
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00068	0.00068	0.00067
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B2 * !C1 * X)	0.00068	0.00068	0.00067
	(A1 * A2 * B2 * !C1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00063	-0.00062	-0.00062
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00060	-0.00061	-0.00060
	(A1 * A2 * !B2 * !C1 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * !B2 * !C1 * X)	-0.00060	-0.00061	-0.00060
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00068	0.00068	0.00067
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00078	-0.00079	-0.00078
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00062	0.00063	0.00062
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00027	0.00027	0.00027
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00097	-0.00098	-0.00098
	(A1 * !A2 * !B2 * !C1 * !X)	0.00027	0.00027	0.00027
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00097	-0.00098	-0.00098
	(!A1 * B2 * C1 * C2 * X)	0.00068	0.00068	0.00067
	(!A1 * B2 * C1 * C2 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * !B2 * C1 * C2 * X)	0.00062	0.00063	0.00062
	(!A1 * !B2 * C1 * C2 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * !B2 * C1 * !C2 * !X)	0.00028	0.00028	0.00027
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00097	-0.00098	-0.00098
	(!A1 * !B2 * !C1 * !X)	0.00028	0.00028	0.00027
	(!A1 * !B2 * !C1 * !X)	-0.00097	-0.00098	-0.00098

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * A2 * B2 * C1 * C2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * B2 * C1 * C2 * X)	0.00068	0.00068	0.00068
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00066	0.00066	0.00067
	(A1 * A2 * B2 * !C1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * B2 * !C1 * X)	0.00066	0.00066	0.00067
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00065	-0.00066	-0.00066
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00067	0.00067	0.00067
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00064	-0.00066	-0.00066
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00065	0.00066	0.00065
	(A1 * A2 * !B2 * !C1 * X)	-0.00064	-0.00066	-0.00066
	(A1 * A2 * !B2 * !C1 * X)	0.00065	0.00066	0.00065
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00085	0.00085	0.00085
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00064	-0.00065	-0.00065
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00028	-0.00027	-0.00027
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00107	0.00106	0.00106
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00028	-0.00027	-0.00027
	(A1 * !A2 * !B2 * !C1 * !X)	0.00107	0.00106	0.00106
	(!A1 * B2 * C1 * C2 * X)	-0.00070	-0.00070	-0.00070
	(!A1 * B2 * C1 * C2 * X)	0.00085	0.00085	0.00085
	(!A1 * !B2 * C1 * C2 * X)	-0.00064	-0.00065	-0.00065
	(!A1 * !B2 * C1 * C2 * X)	0.00089	0.00090	0.00089
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00028	-0.00027	-0.00027
	(!A1 * !B2 * C1 * !C2 * !X)	0.00107	0.00106	0.00106
	(!A1 * !B2 * !C1 * !X)	-0.00028	-0.00027	-0.00027
	(!A1 * !B2 * !C1 * !X)	0.00107	0.00106	0.00106

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00067	-0.00068	-0.00067
	(A1 * A2 * B2 * C1 * C2 * X)	0.00064	0.00064	0.00063
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00066	-0.00067	-0.00067
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00063	0.00063	0.00062
	(A1 * A2 * B2 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B2 * !C1 * X)	0.00063	0.00063	0.00062
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00062	-0.00063	-0.00063
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00063	0.00062	0.00062
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00062	-0.00063	-0.00063
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00060	0.00061	0.00060
	(A1 * A2 * !B2 * !C1 * X)	-0.00062	-0.00063	-0.00063
	(A1 * A2 * !B2 * !C1 * X)	0.00060	0.00061	0.00060
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00068	-0.00068	-0.00067
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00078	0.00079	0.00078
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00061	-0.00063	-0.00062
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00027	-0.00026	-0.00026
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00099	0.00099	0.00098
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00027	-0.00026	-0.00026
	(A1 * !A2 * !B2 * !C1 * !X)	0.00099	0.00099	0.00098
	(!A1 * B2 * C1 * C2 * X)	-0.00068	-0.00068	-0.00067
	(!A1 * B2 * C1 * C2 * X)	0.00079	0.00079	0.00078
	(!A1 * !B2 * C1 * C2 * X)	-0.00061	-0.00063	-0.00062
	(!A1 * !B2 * C1 * C2 * X)	0.00083	0.00084	0.00083
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00027	-0.00027	-0.00027
	(!A1 * !B2 * C1 * !C2 * !X)	0.00099	0.00099	0.00098
	(!A1 * !B2 * !C1 * !X)	-0.00027	-0.00027	-0.00027
	(!A1 * !B2 * !C1 * !X)	0.00099	0.00098	0.00098

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * A2 * B1 * C1 * C2 * X)	0.00068	0.00068	0.00067
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00068	0.00067	0.00067
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * B1 * !C1 * X)	0.00068	0.00067	0.00067
	(A1 * A2 * B1 * !C1 * X)	-0.00063	-0.00062	-0.00062
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00063	0.00064	0.00063
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00063	0.00064	0.00063
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00061	-0.00062	-0.00062
	(A1 * A2 * !B1 * !C1 * X)	0.00063	0.00064	0.00063
	(A1 * A2 * !B1 * !C1 * X)	-0.00061	-0.00062	-0.00062
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00068	0.00068	0.00067
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00080	-0.00081	-0.00080
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00063	0.00063	0.00063
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00059	0.00060	0.00059
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * !B1 * !C1 * !X)	0.00059	0.00060	0.00059
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00088	-0.00087
	(!A1 * B1 * C1 * C2 * X)	0.00068	0.00068	0.00067
	(!A1 * B1 * C1 * C2 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * !B1 * C1 * !C2 * !X)	0.00059	0.00060	0.00059
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00087	-0.00088	-0.00087
	(!A1 * !B1 * !C1 * !X)	0.00059	0.00060	0.00059
	(!A1 * !B1 * !C1 * !X)	-0.00087	-0.00088	-0.00087

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	0.00069	0.00069	0.00069
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00064	-0.00064	-0.00063
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00069	0.00069	0.00068
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * B1 * !C1 * X)	0.00069	0.00069	0.00068
	(A1 * A2 * B1 * !C1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00064	0.00065	0.00064
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00064	0.00065	0.00064
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00060	-0.00061	-0.00060
	(A1 * A2 * !B1 * !C1 * X)	0.00064	0.00065	0.00064
	(A1 * A2 * !B1 * !C1 * X)	-0.00060	-0.00061	-0.00060
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00069	0.00069	0.00068
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00078	-0.00079	-0.00078
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00063	0.00064	0.00064
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00062	0.00062	0.00062
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !B1 * !C1 * !X)	0.00062	0.00062	0.00062
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * B1 * C1 * C2 * X)	0.00069	0.00069	0.00068
	(!A1 * B1 * C1 * C2 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * !B1 * C1 * !C2 * !X)	0.00064	0.00064	0.00064
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1 * !C1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !B1 * !C1 * !X)	-0.00083	-0.00083	-0.00083

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * A2 * B1 * C1 * C2 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B1 * C1 * C2 * X)	0.00064	0.00065	0.00064
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * B1 * !C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B1 * !C1 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00062	-0.00064	-0.00063
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00063	0.00064	0.00063
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00062	-0.00064	-0.00063
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00061	0.00062	0.00062
	(A1 * A2 * !B1 * !C1 * X)	-0.00062	-0.00064	-0.00063
	(A1 * A2 * !B1 * !C1 * X)	0.00061	0.00062	0.00062
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00067	-0.00068	-0.00067
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00061	-0.00063	-0.00063
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00084	0.00085	0.00084
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00058	-0.00060	-0.00059
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00087	0.00088	0.00087
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00058	-0.00060	-0.00059
	(A1 * !A2 * !B1 * !C1 * !X)	0.00087	0.00088	0.00087
	(!A1 * B1 * C1 * C2 * X)	-0.00067	-0.00068	-0.00067
	(!A1 * B1 * C1 * C2 * X)	0.00080	0.00081	0.00080
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00058	-0.00060	-0.00059
	(!A1 * !B1 * C1 * !C2 * !X)	0.00087	0.00088	0.00087
	(!A1 * !B1 * !C1 * !X)	-0.00058	-0.00060	-0.00059
	(!A1 * !B1 * !C1 * !X)	0.00087	0.00088	0.00087

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00068	-0.00068	-0.00068
	(A1 * A2 * B1 * C1 * C2 * X)	0.00064	0.00064	0.00063
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00067	-0.00068	-0.00068
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00063	0.00063	0.00062
	(A1 * A2 * B1 * !C1 * X)	-0.00067	-0.00068	-0.00068
	(A1 * A2 * B1 * !C1 * X)	0.00063	0.00063	0.00062
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00063	-0.00065	-0.00064
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00062	0.00062	0.00062
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00063	-0.00065	-0.00064
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00060	0.00061	0.00060
	(A1 * A2 * !B1 * !C1 * X)	-0.00063	-0.00065	-0.00064
	(A1 * A2 * !B1 * !C1 * X)	0.00060	0.00061	0.00060
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00069	-0.00069	-0.00068
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00078	0.00079	0.00078
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00062	-0.00064	-0.00064
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00061	-0.00062	-0.00062
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00061	-0.00062	-0.00062
	(A1 * !A2 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * B1 * C1 * C2 * X)	-0.00069	-0.00069	-0.00068
	(!A1 * B1 * C1 * C2 * X)	0.00078	0.00079	0.00078
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00063	-0.00064	-0.00064
	(!A1 * !B1 * C1 * !C2 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !C1 * !X)	-0.00063	-0.00064	-0.00064
	(!A1 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * B1 * B2 * C2 * X)	0.00082	0.00083	0.00083
	(A1 * B1 * B2 * C2 * X)	-0.00058	-0.00058	-0.00058
	(A1 * B1 * B2 * !C2 * X)	0.00078	0.00078	0.00078
	(A1 * B1 * B2 * !C2 * X)	-0.00057	-0.00058	-0.00058
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00059	-0.00058	-0.00058
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00078	0.00078	0.00078
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !B1 * C2 * X)	0.00082	0.00083	0.00083
	(A1 * A2 * !B1 * C2 * X)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !B1 * !C2 * X)	0.00078	0.00078	0.00078
	(A1 * A2 * !B1 * !C2 * X)	-0.00058	-0.00058	-0.00058
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00030	0.00030	0.00029
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00106	-0.00107	-0.00107
	(A1 * !A2 * !B1 * !C2 * !X)	0.00030	0.00030	0.00029
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00106	-0.00107	-0.00107
	(!A1 * B1 * B2 * C2 * X)	0.00082	0.00083	0.00083
	(!A1 * B1 * B2 * C2 * X)	-0.00058	-0.00058	-0.00058
	(!A1 * B1 * B2 * !C2 * X)	0.00078	0.00078	0.00078
	(!A1 * B1 * B2 * !C2 * X)	-0.00058	-0.00058	-0.00058
	(!A1 * B1 * !B2 * !C2 * !X)	0.00030	0.00030	0.00029
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00106	-0.00107	-0.00107
	(!A1 * !B1 * !C2 * !X)	0.00030	0.00030	0.00029
	(!A1 * !B1 * !C2 * !X)	-0.00106	-0.00107	-0.00107

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00081	0.00081	0.00080
	(A1 * B1 * B2 * C2 * X)	-0.00055	-0.00055	-0.00055
	(A1 * B1 * B2 * !C2 * X)	0.00076	0.00076	0.00076
	(A1 * B1 * B2 * !C2 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00081	0.00081	0.00080
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00076	0.00076	0.00076
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * C2 * X)	0.00081	0.00081	0.00080
	(A1 * A2 * !B1 * C2 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !B1 * !C2 * X)	0.00076	0.00076	0.00076
	(A1 * A2 * !B1 * !C2 * X)	-0.00055	-0.00055	-0.00055
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00030	0.00030	0.00029
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00101	-0.00101	-0.00101
	(A1 * !A2 * !B1 * !C2 * !X)	0.00030	0.00030	0.00029
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00101	-0.00101	-0.00101
	(!A1 * B1 * B2 * C2 * X)	0.00081	0.00081	0.00080
	(!A1 * B1 * B2 * C2 * X)	-0.00056	-0.00055	-0.00055
	(!A1 * B1 * B2 * !C2 * X)	0.00076	0.00076	0.00076
	(!A1 * B1 * B2 * !C2 * X)	-0.00055	-0.00055	-0.00055
	(!A1 * B1 * !B2 * !C2 * !X)	0.00030	0.00030	0.00029
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00101	-0.00101	-0.00101
	(!A1 * !B1 * !C2 * !X)	0.00030	0.00030	0.00029
	(!A1 * !B1 * !C2 * !X)	-0.00101	-0.00101	-0.00101

Passive power(pJ) for C1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C2 * X)**	-0.00077	-0.00078	-0.00082
	(A1 * B1 * B2 * C2 * X)	0.00063	0.00063	0.00059
	(A1 * B1 * B2 * !C2 * X)	-0.00077	-0.00078	-0.00078
	(A1 * B1 * B2 * !C2 * X)	0.00057	0.00058	0.00058
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00064	-0.00065	-0.00079
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00073	0.00072	0.00061
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00077	-0.00078	-0.00078
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00058	0.00058	0.00058
	(A1 * A2 * !B1 * C2 * X)	-0.00064	-0.00065	-0.00079
	(A1 * A2 * !B1 * C2 * X)	0.00073	0.00072	0.00061
	(A1 * A2 * !B1 * !C2 * X)	-0.00077	-0.00078	-0.00078
	(A1 * A2 * !B1 * !C2 * X)	0.00058	0.00058	0.00058
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00030	-0.00029	-0.00029
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00108	0.00107	0.00107
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00030	-0.00029	-0.00029
	(A1 * !A2 * !B1 * !C2 * !X)	0.00108	0.00107	0.00107
	(!A1 * B1 * B2 * C2 * X)	-0.00076	-0.00077	-0.00082
	(!A1 * B1 * B2 * C2 * X)	0.00065	0.00064	0.00059
	(!A1 * B1 * B2 * !C2 * X)	-0.00077	-0.00078	-0.00078
	(!A1 * B1 * B2 * !C2 * X)	0.00058	0.00058	0.00058
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00030	-0.00029	-0.00029
	(!A1 * B1 * !B2 * !C2 * !X)	0.00108	0.00107	0.00107
	(!A1 * !B1 * !C2 * !X)	-0.00030	-0.00029	-0.00029
	(!A1 * !B1 * !C2 * !X)	0.00108	0.00107	0.00107

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00075	-0.00076	-0.00080
	(A1 * B1 * B2 * C2 * X)	0.00059	0.00059	0.00055
	(A1 * B1 * B2 * !C2 * X)	-0.00075	-0.00076	-0.00076
	(A1 * B1 * B2 * !C2 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00063	-0.00064	-0.00077
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00069	0.00068	0.00058
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00075	-0.00076	-0.00076
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * !B1 * C2 * X)	-0.00063	-0.00064	-0.00077
	(A1 * A2 * !B1 * C2 * X)	0.00069	0.00068	0.00058
	(A1 * A2 * !B1 * !C2 * X)	-0.00075	-0.00076	-0.00076
	(A1 * A2 * !B1 * !C2 * X)	0.00055	0.00055	0.00055
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00029	-0.00029	-0.00029
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00103	0.00102	0.00101
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00029	-0.00029	-0.00029
	(A1 * !A2 * !B1 * !C2 * !X)	0.00103	0.00102	0.00101
	(!A1 * B1 * B2 * C2 * X)	-0.00075	-0.00075	-0.00080
	(!A1 * B1 * B2 * C2 * X)	0.00060	0.00060	0.00056
	(!A1 * B1 * B2 * !C2 * X)	-0.00075	-0.00076	-0.00076
	(!A1 * B1 * B2 * !C2 * X)	0.00055	0.00055	0.00055
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00029	-0.00029	-0.00029
	(!A1 * B1 * !B2 * !C2 * !X)	0.00103	0.00102	0.00101
	(!A1 * !B1 * !C2 * !X)	-0.00029	-0.00029	-0.00029
	(!A1 * !B1 * !C2 * !X)	0.00103	0.00102	0.00101

Passive power(pJ) for C2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * X)**	0.00082	0.00083	0.00082
	(A1 * B1 * B2 * C1 * X)	-0.00056	-0.00056	-0.00056
	(A1 * B1 * B2 * !C1 * X)	0.00078	0.00079	0.00078
	(A1 * B1 * B2 * !C1 * X)	-0.00055	-0.00056	-0.00056
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00084	0.00083	0.00082
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00055	-0.00056	-0.00056
	(A1 * A2 * !B1 * C1 * X)	0.00084	0.00083	0.00082
	(A1 * A2 * !B1 * C1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * A2 * !B1 * !C1 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !B1 * !C1 * X)	-0.00055	-0.00056	-0.00056
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00061	0.00061	0.00061
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00094	-0.00094	-0.00093
	(A1 * !A2 * !B1 * !C1 * !X)	0.00061	0.00060	0.00061
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00094	-0.00093	-0.00093
	(!A1 * B1 * B2 * C1 * X)	0.00084	0.00083	0.00082
	(!A1 * B1 * B2 * C1 * X)	-0.00057	-0.00056	-0.00056
	(!A1 * B1 * B2 * !C1 * X)	0.00078	0.00079	0.00078
	(!A1 * B1 * B2 * !C1 * X)	-0.00056	-0.00056	-0.00056
	(!A1 * B1 * !B2 * !C1 * !X)	0.00061	0.00061	0.00061
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00094	-0.00094	-0.00093
	(!A1 * !B1 * !C1 * !X)	0.00061	0.00060	0.00061
	(!A1 * !B1 * !C1 * !X)	-0.00094	-0.00093	-0.00093

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00086	0.00086	0.00085
	(A1 * B1 * B2 * C1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * B1 * B2 * !C1 * X)	0.00081	0.00082	0.00081
	(A1 * B1 * B2 * !C1 * X)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00086	0.00086	0.00085
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * !B1 * C1 * X)	0.00086	0.00086	0.00085
	(A1 * A2 * !B1 * C1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * A2 * !B1 * !C1 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * !B1 * !C1 * X)	-0.00056	-0.00056	-0.00056
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00059	0.00060	0.00060
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00098	-0.00099	-0.00098
	(A1 * !A2 * !B1 * !C1 * !X)	0.00059	0.00060	0.00060
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1 * B1 * B2 * C1 * X)	0.00086	0.00086	0.00085
	(!A1 * B1 * B2 * C1 * X)	-0.00057	-0.00056	-0.00056
	(!A1 * B1 * B2 * !C1 * X)	0.00081	0.00082	0.00081
	(!A1 * B1 * B2 * !C1 * X)	-0.00056	-0.00056	-0.00056
	(!A1 * B1 * !B2 * !C1 * !X)	0.00059	0.00060	0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1 * !B1 * !C1 * !X)	0.00059	0.00060	0.00060
	(!A1 * !B1 * !C1 * !X)	-0.00098	-0.00099	-0.00098

Passive power(pJ) for C2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * X)**	-0.00077	-0.00077	-0.00082
	(A1 * B1 * B2 * C1 * X)	0.00061	0.00061	0.00057
	(A1 * B1 * B2 * !C1 * X)	-0.00077	-0.00079	-0.00078
	(A1 * B1 * B2 * !C1 * X)	0.00055	0.00056	0.00056
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00063	-0.00065	-0.00079
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00071	0.00070	0.00059
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00077	-0.00079	-0.00078
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00055	0.00056	0.00056
	(A1 * A2 * !B1 * C1 * X)	-0.00063	-0.00065	-0.00079
	(A1 * A2 * !B1 * C1 * X)	0.00071	0.00070	0.00059
	(A1 * A2 * !B1 * !C1 * X)	-0.00077	-0.00079	-0.00078
	(A1 * A2 * !B1 * !C1 * X)	0.00055	0.00056	0.00056
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00060	-0.00061	-0.00061
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00094	0.00094	0.00093
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00060	-0.00060	-0.00061
	(A1 * !A2 * !B1 * !C1 * !X)	0.00094	0.00094	0.00093
	(!A1 * B1 * B2 * C1 * X)	-0.00075	-0.00076	-0.00082
	(!A1 * B1 * B2 * C1 * X)	0.00063	0.00062	0.00057
	(!A1 * B1 * B2 * !C1 * X)	-0.00077	-0.00079	-0.00078
	(!A1 * B1 * B2 * !C1 * X)	0.00056	0.00056	0.00056
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00060	-0.00061	-0.00061
	(!A1 * B1 * !B2 * !C1 * !X)	0.00094	0.00094	0.00093
	(!A1 * !B1 * !C1 * !X)	-0.00060	-0.00060	-0.00061
	(!A1 * !B1 * !C1 * !X)	0.00094	0.00094	0.00093

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00081	-0.00082	-0.00085
	(A1 * B1 * B2 * C1 * X)	0.00060	0.00060	0.00057
	(A1 * B1 * B2 * !C1 * X)	-0.00080	-0.00082	-0.00081
	(A1 * B1 * B2 * !C1 * X)	0.00056	0.00056	0.00056
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00068	-0.00069	-0.00082
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00070	0.00069	0.00059
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00080	-0.00082	-0.00081
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00056	0.00056	0.00056
	(A1 * A2 * !B1 * C1 * X)	-0.00068	-0.00069	-0.00082
	(A1 * A2 * !B1 * C1 * X)	0.00070	0.00069	0.00059
	(A1 * A2 * !B1 * !C1 * X)	-0.00080	-0.00082	-0.00081
	(A1 * A2 * !B1 * !C1 * X)	0.00056	0.00056	0.00056
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00059	-0.00060	-0.00060
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00098	0.00099	0.00098
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00059	-0.00060	-0.00060
	(A1 * !A2 * !B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * B1 * B2 * C1 * X)	-0.00080	-0.00081	-0.00085
	(!A1 * B1 * B2 * C1 * X)	0.00061	0.00061	0.00057
	(!A1 * B1 * B2 * !C1 * X)	-0.00080	-0.00082	-0.00081
	(!A1 * B1 * B2 * !C1 * X)	0.00056	0.00056	0.00056
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * !C1 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * !B1 * !C1 * !X)	0.00098	0.00099	0.00098

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	B2	Y
0	x	0	x	1
0	x	1	0	1
x	x	1	1	0
1	0	0	x	1
1	0	1	0	1
1	1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22oi_1	9.59040
sky130_fd_sc_hs__a22oi_2	15.98400
sky130_fd_sc_hs__a22oi_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__a22oi_1	0.00247	0.00240	0.00261	0.00259	0.07375
sky130_fd_sc_hs__a22oi_2	0.00543	0.00465	0.00527	0.00469	0.14068
sky130_fd_sc_hs__a22oi_4	0.00942	0.00908	0.00969	0.00936	0.27690

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.00008	0.00011
sky130_fd_sc_hs__a22oi_2	0.00000	0.00016	0.00022
sky130_fd_sc_hs__a22oi_4	0.00000	0.00033	0.00044

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (FR)	0.68483	2.80229	14.26450
	A2->Y (FR)	0.80600	2.93831	14.38950
	B1->Y (FR)	0.54474	2.55557	13.58810
	B2->Y (FR)	0.65885	2.68464	13.75380
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.69863	2.54402	14.18940
	A2->Y (FR)	0.81448	2.68332	14.40940
	B1->Y (FR)	0.53808	2.27874	13.52370
	B2->Y (FR)	0.66674	2.43714	13.75970
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.61823	2.25951	14.15340
	A2->Y (FR)	0.75921	2.42290	14.37320
	B1->Y (FR)	0.47822	2.00412	13.51770
	B2->Y (FR)	0.61975	2.18412	13.77930

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.08241	0.79043	4.73028
	A2->Y (RF)	0.08947	0.78579	4.68914
	B1->Y (RF)	0.07487	0.76887	4.70516
	B2->Y (RF)	0.08165	0.76533	4.67607
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.08464	0.75671	4.73997
	A2->Y (RF)	0.09124	0.75680	4.72259
	B1->Y (RF)	0.07450	0.72398	4.69433
	B2->Y (RF)	0.08296	0.73033	4.68128
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.08096	0.72744	4.86705
	A2->Y (RF)	0.08955	0.71774	4.72288
	B1->Y (RF)	0.07136	0.68910	4.83107
	B2->Y (RF)	0.07991	0.68584	4.67641

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00024	0.00017	0.00016
	A1	0.00330	0.00322	0.00321
	A2	0.00048	0.00043	0.00042
	A2	0.00401	0.00395	0.00379
	B1	0.00030	0.00021	0.00020
	B1	0.00297	0.00288	0.00287
	B2	0.00045	0.00037	0.00036
	B2	0.00359	0.00351	0.00350
sky130_fd_sc_hs__a22oi_2	A1	0.00095	0.00076	0.00075
	A1	0.00748	0.00729	0.00727
	A2	0.00151	0.00138	0.00136
	A2	0.00850	0.00836	0.00833
	B1	0.00074	0.00054	0.00053
	B1	0.00630	0.00604	0.00607
	B2	0.00149	0.00133	0.00131
	B2	0.00761	0.00745	0.00744
sky130_fd_sc_hs__a22oi_4	A1	0.00092	0.00058	0.00056
	A1	0.01314	0.01275	0.01274
	A2	0.00212	0.00188	0.00182
	A2	0.01600	0.01571	0.01513
	B1	0.00081	0.00040	0.00041
	B1	0.01140	0.01098	0.01096
	B2	0.00205	0.00173	0.00169
	B2	0.01422	0.01389	0.01387

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00367	0.00362	0.00353
	A1	0.00083	0.00077	0.00070
	A2	0.00414	0.00409	0.00401
	A2	0.00080	0.00075	0.00067
	B1	0.00266	0.00265	0.00263
	B1	-0.00004	-0.00006	-0.00008
	B2	0.00316	0.00316	0.00315
	B2	-0.00004	-0.00006	-0.00007
sky130_fd_sc_hs__a22oi_2	A1	0.00759	0.00746	0.00732
	A1	0.00147	0.00133	0.00120
	A2	0.00818	0.00807	0.00793
	A2	0.00150	0.00140	0.00128
	B1	0.00562	0.00559	0.00557
	B1	0.00002	-0.00005	-0.00005
	B2	0.00631	0.00628	0.00627
	B2	0.00003	-0.00001	-0.00002
sky130_fd_sc_hs__a22oi_4	A1	0.01423	0.01398	0.01373
	A1	0.00277	0.00252	0.00231
	A2	0.01604	0.01584	0.01555
	A2	0.00276	0.00254	0.00232
	B1	0.01052	0.01040	0.01046
	B1	-0.00020	-0.00032	-0.00029
	B2	0.01237	0.01230	0.01231
	B2	-0.00014	-0.00026	-0.00022

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A2 * B1 * B2 * !Y)	0.00076	0.00076	0.00075
	(A2 * B1 * B2 * !Y)	-0.00087	-0.00088	-0.00087
	(!A2 * B1 * B2 * !Y)	0.00070	0.00071	0.00070
	(!A2 * B1 * B2 * !Y)	-0.00091	-0.00092	-0.00091
	(!A2 * B1 * !B2 * Y)	0.00032	0.00032	0.00031
	(!A2 * B1 * !B2 * Y)	-0.00105	-0.00106	-0.00107
	(!A2 * !B1 * Y)	0.00032	0.00032	0.00031
	(!A2 * !B1 * Y)	-0.00105	-0.00106	-0.00107
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00167	0.00167	0.00165
	(A2 * B1 * B2 * !Y)	-0.00185	-0.00188	-0.00186
	(!A2 * B1 * B2 * !Y)	0.00154	0.00155	0.00154
	(!A2 * B1 * B2 * !Y)	-0.00196	-0.00198	-0.00197
	(!A2 * B1 * !B2 * Y)	0.00064	0.00063	0.00062
	(!A2 * B1 * !B2 * Y)	-0.00239	-0.00239	-0.00242
	(!A2 * !B1 * Y)	0.00064	0.00064	0.00062
	(!A2 * !B1 * Y)	-0.00239	-0.00239	-0.00242
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00308	0.00307	0.00305
	(A2 * B1 * B2 * !Y)	-0.00350	-0.00357	-0.00352
	(!A2 * B1 * B2 * !Y)	0.00282	0.00284	0.00282
	(!A2 * B1 * B2 * !Y)	-0.00370	-0.00372	-0.00370
	(!A2 * B1 * !B2 * Y)	0.00122	0.00122	0.00117
	(!A2 * B1 * !B2 * Y)	-0.00432	-0.00433	-0.00442
	(!A2 * !B1 * Y)	0.00123	0.00122	0.00117
	(!A2 * !B1 * Y)	-0.00431	-0.00433	-0.00442

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A2 * B1 * B2 * !Y)	-0.00076	-0.00075	-0.00075
	(A2 * B1 * B2 * !Y)	0.00088	0.00088	0.00087
	(!A2 * B1 * B2 * !Y)	-0.00069	-0.00071	-0.00070
	(!A2 * B1 * B2 * !Y)	0.00092	0.00092	0.00091
	(!A2 * B1 * !B2 * Y)	-0.00030	-0.00030	-0.00030
	(!A2 * B1 * !B2 * Y)	0.00108	0.00108	0.00107
	(!A2 * !B1 * Y)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * Y)	0.00108	0.00108	0.00107
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00166	-0.00167	-0.00165
	(A2 * B1 * B2 * !Y)	0.00186	0.00188	0.00186
	(!A2 * B1 * B2 * !Y)	-0.00152	-0.00155	-0.00154
	(!A2 * B1 * B2 * !Y)	0.00198	0.00198	0.00197
	(!A2 * B1 * !B2 * Y)	-0.00061	-0.00061	-0.00060
	(!A2 * B1 * !B2 * Y)	0.00245	0.00245	0.00242
	(!A2 * !B1 * Y)	-0.00061	-0.00061	-0.00060
	(!A2 * !B1 * Y)	0.00245	0.00245	0.00242
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00305	-0.00307	-0.00305
	(A2 * B1 * B2 * !Y)	0.00352	0.00357	0.00352
	(!A2 * B1 * B2 * !Y)	-0.00277	-0.00284	-0.00282
	(!A2 * B1 * B2 * !Y)	0.00373	0.00372	0.00371
	(!A2 * B1 * !B2 * Y)	-0.00114	-0.00114	-0.00114
	(!A2 * B1 * !B2 * Y)	0.00441	0.00444	0.00442
	(!A2 * !B1 * Y)	-0.00114	-0.00115	-0.00114
	(!A2 * !B1 * Y)	0.00441	0.00444	0.00442

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * B1 * B2 * !Y)	0.00080	0.00080	0.00080
	(A1 * B1 * B2 * !Y)	-0.00090	-0.00092	-0.00091
	(!A1 * B1 * B2 * !Y)	0.00075	0.00075	0.00075
	(!A1 * B1 * B2 * !Y)	-0.00095	-0.00095	-0.00095
	(!A1 * B1 * !B2 * Y)	0.00075	0.00075	0.00075
	(!A1 * B1 * !B2 * Y)	-0.00095	-0.00096	-0.00095
	(!A1 * !B1 * Y)	0.00074	0.00075	0.00075
	(!A1 * !B1 * Y)	-0.00095	-0.00096	-0.00095
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00152	0.00152	0.00151
	(A1 * B1 * B2 * !Y)	-0.00170	-0.00174	-0.00171
	(!A1 * B1 * B2 * !Y)	0.00139	0.00141	0.00140
	(!A1 * B1 * B2 * !Y)	-0.00179	-0.00181	-0.00180
	(!A1 * B1 * !B2 * Y)	0.00135	0.00135	0.00134
	(!A1 * B1 * !B2 * Y)	-0.00185	-0.00186	-0.00186
	(!A1 * !B1 * Y)	0.00135	0.00135	0.00134
	(!A1 * !B1 * Y)	-0.00185	-0.00186	-0.00186
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00310	0.00309	0.00307
	(A1 * B1 * B2 * !Y)	-0.00351	-0.00356	-0.00354
	(!A1 * B1 * B2 * !Y)	0.00283	0.00285	0.00284
	(!A1 * B1 * B2 * !Y)	-0.00370	-0.00373	-0.00371
	(!A1 * B1 * !B2 * Y)	0.00284	0.00284	0.00283
	(!A1 * B1 * !B2 * Y)	-0.00371	-0.00373	-0.00372
	(!A1 * !B1 * Y)	0.00285	0.00285	0.00283
	(!A1 * !B1 * Y)	-0.00371	-0.00374	-0.00372

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * B1 * B2 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * B2 * !Y)	0.00091	0.00092	0.00091
	(!A1 * B1 * B2 * !Y)	-0.00074	-0.00075	-0.00075
	(!A1 * B1 * B2 * !Y)	0.00095	0.00096	0.00095
	(!A1 * B1 * !B2 * Y)	-0.00074	-0.00075	-0.00075
	(!A1 * B1 * !B2 * Y)	0.00095	0.00096	0.00096
	(!A1 * !B1 * Y)	-0.00074	-0.00075	-0.00075
	(!A1 * !B1 * Y)	0.00095	0.00096	0.00096
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * B1 * B2 * !Y)	0.00171	0.00174	0.00171
	(!A1 * B1 * B2 * !Y)	-0.00137	-0.00141	-0.00140
	(!A1 * B1 * B2 * !Y)	0.00179	0.00182	0.00180
	(!A1 * B1 * !B2 * Y)	-0.00131	-0.00135	-0.00134
	(!A1 * B1 * !B2 * Y)	0.00185	0.00187	0.00186
	(!A1 * !B1 * Y)	-0.00131	-0.00135	-0.00134
	(!A1 * !B1 * Y)	0.00185	0.00187	0.00186
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00308	-0.00309	-0.00307
	(A1 * B1 * B2 * !Y)	0.00356	0.00356	0.00354
	(!A1 * B1 * B2 * !Y)	-0.00277	-0.00285	-0.00284
	(!A1 * B1 * B2 * !Y)	0.00370	0.00375	0.00372
	(!A1 * B1 * !B2 * Y)	-0.00277	-0.00284	-0.00283
	(!A1 * B1 * !B2 * Y)	0.00371	0.00376	0.00373
	(!A1 * !B1 * Y)	-0.00277	-0.00285	-0.00283
	(!A1 * !B1 * Y)	0.00371	0.00376	0.00373

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * A2 * B2 * !Y)	0.00088	0.00088	0.00088
	(A1 * A2 * B2 * !Y)	-0.00060	-0.00060	-0.00060
	(A1 * A2 * !B2 * !Y)	0.00082	0.00083	0.00082
	(A1 * A2 * !B2 * !Y)	-0.00060	-0.00060	-0.00060
	(A1 * !A2 * !B2 * Y)	0.00029	0.00029	0.00029
	(A1 * !A2 * !B2 * Y)	-0.00111	-0.00111	-0.00112
	(!A1 * !B2 * Y)	0.00029	0.00029	0.00029
	(!A1 * !B2 * Y)	-0.00111	-0.00111	-0.00112
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00188	0.00189	0.00188
	(A1 * A2 * B2 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * A2 * !B2 * !Y)	0.00176	0.00177	0.00176
	(A1 * A2 * !B2 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !B2 * Y)	0.00068	0.00067	0.00066
	(A1 * !A2 * !B2 * Y)	-0.00221	-0.00221	-0.00224
	(!A1 * !B2 * Y)	0.00068	0.00067	0.00066
	(!A1 * !B2 * Y)	-0.00221	-0.00221	-0.00224
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00350	0.00349	0.00347
	(A1 * A2 * B2 * !Y)	-0.00239	-0.00236	-0.00235
	(A1 * A2 * !B2 * !Y)	0.00326	0.00330	0.00327
	(A1 * A2 * !B2 * !Y)	-0.00235	-0.00235	-0.00234
	(A1 * !A2 * !B2 * Y)	0.00121	0.00121	0.00116
	(A1 * !A2 * !B2 * Y)	-0.00432	-0.00435	-0.00444
	(!A1 * !B2 * Y)	0.00121	0.00121	0.00116
	(!A1 * !B2 * Y)	-0.00432	-0.00435	-0.00444

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * A2 * B2 * !Y)	-0.00081	-0.00082	-0.00087
	(A1 * A2 * B2 * !Y)	0.00066	0.00066	0.00061
	(A1 * A2 * !B2 * !Y)	-0.00081	-0.00083	-0.00082
	(A1 * A2 * !B2 * !Y)	0.00060	0.00060	0.00060
	(A1 * !A2 * !B2 * Y)	-0.00028	-0.00028	-0.00028
	(A1 * !A2 * !B2 * Y)	0.00112	0.00113	0.00112
	(!A1 * !B2 * Y)	-0.00028	-0.00028	-0.00028
	(!A1 * !B2 * Y)	0.00112	0.00113	0.00112
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00176	-0.00178	-0.00188
	(A1 * A2 * B2 * !Y)	0.00127	0.00127	0.00119
	(A1 * A2 * !B2 * !Y)	-0.00173	-0.00177	-0.00176
	(A1 * A2 * !B2 * !Y)	0.00116	0.00117	0.00116
	(A1 * !A2 * !B2 * Y)	-0.00064	-0.00065	-0.00064
	(A1 * !A2 * !B2 * Y)	0.00223	0.00226	0.00224
	(!A1 * !B2 * Y)	-0.00064	-0.00065	-0.00064
	(!A1 * !B2 * Y)	0.00223	0.00226	0.00224
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00324	-0.00328	-0.00346
	(A1 * A2 * B2 * !Y)	0.00256	0.00255	0.00239
	(A1 * A2 * !B2 * !Y)	-0.00320	-0.00330	-0.00327
	(A1 * A2 * !B2 * !Y)	0.00235	0.00235	0.00234
	(A1 * !A2 * !B2 * Y)	-0.00113	-0.00114	-0.00113
	(A1 * !A2 * !B2 * Y)	0.00443	0.00447	0.00444
	(!A1 * !B2 * Y)	-0.00113	-0.00114	-0.00113
	(!A1 * !B2 * Y)	0.00443	0.00447	0.00444

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * A2 * B1 * !Y)	0.00096	0.00096	0.00096
	(A1 * A2 * B1 * !Y)	-0.00061	-0.00061	-0.00060
	(A1 * A2 * !B1 * !Y)	0.00091	0.00092	0.00091
	(A1 * A2 * !B1 * !Y)	-0.00060	-0.00060	-0.00060
	(A1 * !A2 * !B1 * Y)	0.00075	0.00075	0.00075
	(A1 * !A2 * !B1 * Y)	-0.00099	-0.00099	-0.00099
	(!A1 * !B1 * Y)	0.00075	0.00075	0.00075
	(!A1 * !B1 * Y)	-0.00099	-0.00099	-0.00099
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00165	0.00166	0.00165
	(A1 * A2 * B1 * !Y)	-0.00117	-0.00118	-0.00117
	(A1 * A2 * !B1 * !Y)	0.00155	0.00156	0.00155
	(A1 * A2 * !B1 * !Y)	-0.00117	-0.00117	-0.00117
	(A1 * !A2 * !B1 * Y)	0.00134	0.00134	0.00134
	(A1 * !A2 * !B1 * Y)	-0.00184	-0.00184	-0.00183
	(!A1 * !B1 * Y)	0.00134	0.00135	0.00134
	(!A1 * !B1 * Y)	-0.00184	-0.00184	-0.00183
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00347	0.00350	0.00347
	(A1 * A2 * B1 * !Y)	-0.00236	-0.00238	-0.00235
	(A1 * A2 * !B1 * !Y)	0.00325	0.00328	0.00326
	(A1 * A2 * !B1 * !Y)	-0.00233	-0.00236	-0.00235
	(A1 * !A2 * !B1 * Y)	0.00282	0.00284	0.00282
	(A1 * !A2 * !B1 * Y)	-0.00368	-0.00371	-0.00370
	(!A1 * !B1 * Y)	0.00282	0.00286	0.00282
	(!A1 * !B1 * Y)	-0.00368	-0.00372	-0.00370

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * A2 * B1 * !Y)	-0.00089	-0.00090	-0.00096
	(A1 * A2 * B1 * !Y)	0.00067	0.00066	0.00061
	(A1 * A2 * !B1 * !Y)	-0.00090	-0.00092	-0.00091
	(A1 * A2 * !B1 * !Y)	0.00060	0.00060	0.00060
	(A1 * !A2 * !B1 * Y)	-0.00074	-0.00075	-0.00075
	(A1 * !A2 * !B1 * Y)	0.00099	0.00099	0.00099
	(!A1 * !B1 * Y)	-0.00074	-0.00075	-0.00075
	(!A1 * !B1 * Y)	0.00099	0.00099	0.00099
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00152	-0.00154	-0.00164
	(A1 * A2 * B1 * !Y)	0.00127	0.00128	0.00119
	(A1 * A2 * !B1 * !Y)	-0.00153	-0.00156	-0.00155
	(A1 * A2 * !B1 * !Y)	0.00117	0.00117	0.00117
	(A1 * !A2 * !B1 * Y)	-0.00132	-0.00134	-0.00134
	(A1 * !A2 * !B1 * Y)	0.00184	0.00185	0.00184
	(!A1 * !B1 * Y)	-0.00132	-0.00135	-0.00134
	(!A1 * !B1 * Y)	0.00184	0.00185	0.00184
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00323	-0.00327	-0.00346
	(A1 * A2 * B1 * !Y)	0.00256	0.00255	0.00239
	(A1 * A2 * !B1 * !Y)	-0.00319	-0.00328	-0.00326
	(A1 * A2 * !B1 * !Y)	0.00233	0.00236	0.00235
	(A1 * !A2 * !B1 * Y)	-0.00276	-0.00284	-0.00282
	(A1 * !A2 * !B1 * Y)	0.00368	0.00372	0.00370
	(!A1 * !B1 * Y)	-0.00276	-0.00286	-0.00282
	(!A1 * !B1 * Y)	0.00368	0.00372	0.00370

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	B2	X
0	x	0	x	0
0	x	1	0	0
x	x	1	1	1
1	0	0	x	0
1	0	1	0	0
1	1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22o_1	11.18880
sky130_fd_sc_hs__a22o_2	12.78720
sky130_fd_sc_hs__a22o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__a22o_1	0.00243	0.00218	0.00239	0.00242	0.18645
sky130_fd_sc_hs__a22o_2	0.00253	0.00229	0.00253	0.00242	0.37144
sky130_fd_sc_hs__a22o_4	0.00421	0.00444	0.00432	0.00474	0.74449

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	0.00012	0.00015
sky130_fd_sc_hs__a22o_2	0.00000	0.00016	0.00019
sky130_fd_sc_hs__a22o_4	0.00000	0.00032	0.00038

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (RR)	0.30399	1.71252	9.81158
	A2->X (RR)	0.31280	1.71490	10.00080
	B1->X (RR)	0.28825	1.68114	9.74461
	B2->X (RR)	0.29606	1.68852	9.89509
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.28993	1.53555	9.95089
	A2->X (RR)	0.29941	1.52686	10.07390
	B1->X (RR)	0.27328	1.50522	9.88752
	B2->X (RR)	0.27983	1.50145	9.99586
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.28392	1.38674	10.01980
	A2->X (RR)	0.29199	1.38760	10.15680
	B1->X (RR)	0.26879	1.35784	9.92900
	B2->X (RR)	0.27754	1.36147	10.06760

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.97592	2.07510	8.32386
	A2->X (FF)	1.07970	2.18952	8.50530
	B1->X (FF)	0.88205	1.88017	7.71995
	B2->X (FF)	0.97113	1.96991	7.85185
sky130_fd_sc_hs__a22o_2	A1->X (FF)	1.27455	2.39278	8.81319
	A2->X (FF)	1.40837	2.54685	9.00602
	B1->X (FF)	1.19339	2.20674	8.27927
	B2->X (FF)	1.28973	2.31017	8.40529
sky130_fd_sc_hs__a22o_4	A1->X (FF)	1.21373	2.31856	8.81545
	A2->X (FF)	1.30193	2.41716	8.94186
	B1->X (FF)	1.09857	2.09586	8.23996
	B2->X (FF)	1.18365	2.17964	8.34325

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00522	0.00519	0.00512
	A1	0.00254	0.00251	0.00245
	A2	0.00566	0.00568	0.00564
	A2	0.00254	0.00255	0.00252
	B1	0.00438	0.00433	0.00427
	B1	0.00186	0.00181	0.00175
	B2	0.00477	0.00476	0.00473
	B2	0.00182	0.00180	0.00177
sky130_fd_sc_hs__a22o_2	A1	0.00669	0.00673	0.00671
	A1	0.00383	0.00388	0.00385
	A2	0.00711	0.00720	0.00722
	A2	0.00379	0.00388	0.00390
	B1	0.00581	0.00585	0.00581
	B1	0.00311	0.00315	0.00312
	B2	0.00622	0.00629	0.00629
	B2	0.00309	0.00317	0.00317
sky130_fd_sc_hs__a22o_4	A1	0.01289	0.01297	0.01299
	A1	0.00780	0.00790	0.00793
	A2	0.01387	0.01403	0.01409
	A2	0.00780	0.00796	0.00803
	B1	0.01105	0.01108	0.01106
	B1	0.00641	0.00644	0.00643
	B2	0.01189	0.01198	0.01198
	B2	0.00629	0.00638	0.00638

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00196	0.00193	0.00190
	A1	0.00480	0.00477	0.00472
	A2	0.00220	0.00224	0.00222
	A2	0.00542	0.00546	0.00541
	B1	0.00215	0.00212	0.00219
	B1	0.00461	0.00459	0.00453
	B2	0.00230	0.00230	0.00265
	B2	0.00516	0.00516	0.00510
sky130_fd_sc_hs__a22o_2	A1	0.00327	0.00334	0.00334
	A1	0.00629	0.00635	0.00634
	A2	0.00368	0.00384	0.00380
	A2	0.00710	0.00725	0.00724
	B1	0.00351	0.00358	0.00370
	B1	0.00614	0.00621	0.00620
	B2	0.00321	0.00333	0.00412
	B2	0.00672	0.00684	0.00682
sky130_fd_sc_hs__a22o_4	A1	0.00630	0.00655	0.00664
	A1	0.01173	0.01197	0.01203
	A2	0.00636	0.00669	0.00613
	A2	0.01270	0.01301	0.01307
	B1	0.00582	0.00599	0.00769
	B1	0.01080	0.01100	0.01104
	B2	0.00662	0.00685	0.00728
	B2	0.01208	0.01229	0.01233

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A2 * B1 * B2 * X)	0.00080	0.00080	0.00080
	(A2 * B1 * B2 * X)	-0.00078	-0.00079	-0.00078
	(!A2 * B1 * B2 * X)	0.00075	0.00075	0.00075
	(!A2 * B1 * B2 * X)	-0.00081	-0.00082	-0.00082
	(!A2 * B1 * !B2 * !X)	0.00031	0.00031	0.00029
	(!A2 * B1 * !B2 * !X)	-0.00105	-0.00106	-0.00108
	(!A2 * !B1 * !X)	0.00031	0.00031	0.00029
	(!A2 * !B1 * !X)	-0.00105	-0.00106	-0.00108
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00088	0.00089	0.00088
	(A2 * B1 * B2 * X)	-0.00077	-0.00078	-0.00077
	(!A2 * B1 * B2 * X)	0.00083	0.00084	0.00083
	(!A2 * B1 * B2 * X)	-0.00081	-0.00081	-0.00081
	(!A2 * B1 * !B2 * !X)	0.00035	0.00034	0.00032
	(!A2 * B1 * !B2 * !X)	-0.00105	-0.00106	-0.00109
	(!A2 * !B1 * !X)	0.00035	0.00035	0.00032
	(!A2 * !B1 * !X)	-0.00105	-0.00106	-0.00109
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00128	0.00127	0.00127
	(A2 * B1 * B2 * X)	-0.00160	-0.00163	-0.00162
	(!A2 * B1 * B2 * X)	0.00117	0.00118	0.00117
	(!A2 * B1 * B2 * X)	-0.00171	-0.00172	-0.00171
	(!A2 * B1 * !B2 * !X)	0.00049	0.00049	0.00047
	(!A2 * B1 * !B2 * !X)	-0.00198	-0.00199	-0.00201
	(!A2 * !B1 * !X)	0.00049	0.00049	0.00047
	(!A2 * !B1 * !X)	-0.00197	-0.00199	-0.00201

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A2 * B1 * B2 * X)	-0.00080	-0.00080	-0.00080
	(A2 * B1 * B2 * X)	0.00079	0.00079	0.00078
	(!A2 * B1 * B2 * X)	-0.00074	-0.00075	-0.00075
	(!A2 * B1 * B2 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * !B2 * !X)	-0.00029	-0.00028	-0.00028
	(!A2 * B1 * !B2 * !X)	0.00109	0.00109	0.00108
	(!A2 * !B1 * !X)	-0.00029	-0.00028	-0.00028
	(!A2 * !B1 * !X)	0.00109	0.00109	0.00108
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00088	-0.00088	-0.00088
	(A2 * B1 * B2 * X)	0.00078	0.00078	0.00077
	(!A2 * B1 * B2 * X)	-0.00082	-0.00084	-0.00083
	(!A2 * B1 * B2 * X)	0.00082	0.00081	0.00081
	(!A2 * B1 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * B1 * !B2 * !X)	0.00110	0.00110	0.00109
	(!A2 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !X)	0.00110	0.00110	0.00109
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00127	-0.00127	-0.00127
	(A2 * B1 * B2 * X)	0.00163	0.00163	0.00162
	(!A2 * B1 * B2 * X)	-0.00115	-0.00118	-0.00117
	(!A2 * B1 * B2 * X)	0.00171	0.00173	0.00171
	(!A2 * B1 * !B2 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * B1 * !B2 * !X)	0.00203	0.00202	0.00201
	(!A2 * !B1 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * !B1 * !X)	0.00203	0.00202	0.00201

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * B1 * B2 * X)	0.00079	0.00079	0.00078
	(A1 * B1 * B2 * X)	-0.00078	-0.00080	-0.00078
	(!A1 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(!A1 * B1 * B2 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * B1 * !B2 * !X)	0.00073	0.00073	0.00073
	(!A1 * B1 * !B2 * !X)	-0.00082	-0.00083	-0.00082
	(!A1 * !B1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !B1 * !X)	-0.00082	-0.00083	-0.00082
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00081	0.00081	0.00080
	(A1 * B1 * B2 * X)	-0.00081	-0.00082	-0.00082
	(!A1 * B1 * B2 * X)	0.00076	0.00076	0.00075
	(!A1 * B1 * B2 * X)	-0.00085	-0.00085	-0.00085
	(!A1 * B1 * !B2 * !X)	0.00075	0.00075	0.00075
	(!A1 * B1 * !B2 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !B1 * !X)	0.00075	0.00075	0.00075
	(!A1 * !B1 * !X)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00159	0.00158	0.00157
	(A1 * B1 * B2 * X)	-0.00158	-0.00160	-0.00159
	(!A1 * B1 * B2 * X)	0.00148	0.00149	0.00148
	(!A1 * B1 * B2 * X)	-0.00166	-0.00167	-0.00167
	(!A1 * B1 * !B2 * !X)	0.00144	0.00145	0.00144
	(!A1 * B1 * !B2 * !X)	-0.00170	-0.00171	-0.00171
	(!A1 * !B1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !B1 * !X)	-0.00170	-0.00171	-0.00171

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * B1 * B2 * X)	-0.00079	-0.00079	-0.00078
	(A1 * B1 * B2 * X)	0.00079	0.00080	0.00078
	(!A1 * B1 * B2 * X)	-0.00072	-0.00074	-0.00073
	(!A1 * B1 * B2 * X)	0.00082	0.00083	0.00082
	(!A1 * B1 * !B2 * !X)	-0.00072	-0.00073	-0.00073
	(!A1 * B1 * !B2 * !X)	0.00083	0.00083	0.00082
	(!A1 * !B1 * !X)	-0.00072	-0.00073	-0.00073
	(!A1 * !B1 * !X)	0.00083	0.00083	0.00082
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00080	-0.00081	-0.00080
	(A1 * B1 * B2 * X)	0.00082	0.00082	0.00082
	(!A1 * B1 * B2 * X)	-0.00074	-0.00076	-0.00075
	(!A1 * B1 * B2 * X)	0.00085	0.00085	0.00085
	(!A1 * B1 * !B2 * !X)	-0.00074	-0.00075	-0.00075
	(!A1 * B1 * !B2 * !X)	0.00086	0.00086	0.00085
	(!A1 * !B1 * !X)	-0.00074	-0.00075	-0.00075
	(!A1 * !B1 * !X)	0.00086	0.00086	0.00085
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00157	-0.00158	-0.00157
	(A1 * B1 * B2 * X)	0.00159	0.00160	0.00159
	(!A1 * B1 * B2 * X)	-0.00146	-0.00149	-0.00148
	(!A1 * B1 * B2 * X)	0.00166	0.00168	0.00167
	(!A1 * B1 * !B2 * !X)	-0.00142	-0.00145	-0.00144
	(!A1 * B1 * !B2 * !X)	0.00170	0.00171	0.00171
	(!A1 * !B1 * !X)	-0.00142	-0.00145	-0.00144
	(!A1 * !B1 * !X)	0.00170	0.00171	0.00171

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B2 * X)	0.00076	0.00077	0.00076
	(A1 * A2 * B2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * !B2 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * !B2 * X)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * !B2 * !X)	0.00027	0.00027	0.00026
	(A1 * !A2 * !B2 * !X)	-0.00098	-0.00098	-0.00099
	(!A1 * !B2 * !X)	0.00028	0.00028	0.00027
	(!A1 * !B2 * !X)	-0.00098	-0.00098	-0.00098
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00086	0.00086	0.00086
	(A1 * A2 * B2 * X)	-0.00054	-0.00054	-0.00053
	(A1 * A2 * !B2 * X)	0.00081	0.00080	0.00081
	(A1 * A2 * !B2 * X)	-0.00053	-0.00053	-0.00053
	(A1 * !A2 * !B2 * !X)	0.00030	0.00030	0.00029
	(A1 * !A2 * !B2 * !X)	-0.00100	-0.00101	-0.00101
	(!A1 * !B2 * !X)	0.00030	0.00030	0.00029
	(!A1 * !B2 * !X)	-0.00100	-0.00101	-0.00101
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00141	0.00142	0.00141
	(A1 * A2 * B2 * X)	-0.00106	-0.00107	-0.00106
	(A1 * A2 * !B2 * X)	0.00132	0.00133	0.00133
	(A1 * A2 * !B2 * X)	-0.00106	-0.00107	-0.00106
	(A1 * !A2 * !B2 * !X)	0.00051	0.00051	0.00049
	(A1 * !A2 * !B2 * !X)	-0.00188	-0.00189	-0.00191
	(!A1 * !B2 * !X)	0.00051	0.00051	0.00049
	(!A1 * !B2 * !X)	-0.00188	-0.00189	-0.00191

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B2 * X)	-0.00071	-0.00072	-0.00076
	(A1 * A2 * B2 * X)	0.00059	0.00059	0.00055
	(A1 * A2 * !B2 * X)	-0.00071	-0.00072	-0.00072
	(A1 * A2 * !B2 * X)	0.00054	0.00054	0.00054
	(A1 * !A2 * !B2 * !X)	-0.00027	-0.00026	-0.00026
	(A1 * !A2 * !B2 * !X)	0.00099	0.00099	0.00099
	(!A1 * !B2 * !X)	-0.00028	-0.00027	-0.00027
	(!A1 * !B2 * !X)	0.00099	0.00099	0.00098
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00081	-0.00081	-0.00086
	(A1 * A2 * B2 * X)	0.00059	0.00058	0.00054
	(A1 * A2 * !B2 * X)	-0.00079	-0.00080	-0.00081
	(A1 * A2 * !B2 * X)	0.00053	0.00054	0.00053
	(A1 * !A2 * !B2 * !X)	-0.00029	-0.00029	-0.00028
	(A1 * !A2 * !B2 * !X)	0.00102	0.00101	0.00101
	(!A1 * !B2 * !X)	-0.00030	-0.00029	-0.00029
	(!A1 * !B2 * !X)	0.00102	0.00101	0.00101
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00129	-0.00130	-0.00141
	(A1 * A2 * B2 * X)	0.00118	0.00117	0.00108
	(A1 * A2 * !B2 * X)	-0.00130	-0.00133	-0.00133
	(A1 * A2 * !B2 * X)	0.00106	0.00107	0.00106
	(A1 * !A2 * !B2 * !X)	-0.00049	-0.00048	-0.00048
	(A1 * !A2 * !B2 * !X)	0.00193	0.00192	0.00191
	(!A1 * !B2 * !X)	-0.00049	-0.00048	-0.00048
	(!A1 * !B2 * !X)	0.00193	0.00192	0.00191

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B1 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * B1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !B1 * X)	0.00076	0.00077	0.00076
	(A1 * A2 * !B1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * !A2 * !B1 * !X)	0.00064	0.00065	0.00064
	(A1 * !A2 * !B1 * !X)	-0.00087	-0.00088	-0.00087
	(!A1 * !B1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !B1 * !X)	-0.00087	-0.00087	-0.00087
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00085	0.00085	0.00084
	(A1 * A2 * B1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * A2 * !B1 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * !B1 * X)	-0.00055	-0.00056	-0.00055
	(A1 * !A2 * !B1 * !X)	0.00071	0.00072	0.00071
	(A1 * !A2 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * !B1 * !X)	0.00073	0.00074	0.00073
	(!A1 * !B1 * !X)	-0.00083	-0.00083	-0.00083
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00157	0.00155	0.00155
	(A1 * A2 * B1 * X)	-0.00118	-0.00116	-0.00116
	(A1 * A2 * !B1 * X)	0.00148	0.00148	0.00147
	(A1 * A2 * !B1 * X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * !B1 * !X)	-0.00191	-0.00192	-0.00191
	(!A1 * !B1 * !X)	0.00115	0.00116	0.00115
	(!A1 * !B1 * !X)	-0.00191	-0.00192	-0.00191

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B1 * X)	-0.00075	-0.00076	-0.00080
	(A1 * A2 * B1 * X)	0.00063	0.00063	0.00059
	(A1 * A2 * !B1 * X)	-0.00075	-0.00077	-0.00076
	(A1 * A2 * !B1 * X)	0.00058	0.00058	0.00058
	(A1 * !A2 * !B1 * !X)	-0.00063	-0.00065	-0.00064
	(A1 * !A2 * !B1 * !X)	0.00087	0.00088	0.00087
	(!A1 * !B1 * !X)	-0.00067	-0.00069	-0.00068
	(!A1 * !B1 * !X)	0.00087	0.00087	0.00087
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00080	-0.00080	-0.00084
	(A1 * A2 * B1 * X)	0.00060	0.00060	0.00057
	(A1 * A2 * !B1 * X)	-0.00078	-0.00080	-0.00079
	(A1 * A2 * !B1 * X)	0.00055	0.00056	0.00055
	(A1 * !A2 * !B1 * !X)	-0.00070	-0.00072	-0.00071
	(A1 * !A2 * !B1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !X)	-0.00072	-0.00074	-0.00073
	(!A1 * !B1 * !X)	0.00083	0.00083	0.00083
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00146	-0.00147	-0.00154
	(A1 * A2 * B1 * X)	0.00125	0.00124	0.00117
	(A1 * A2 * !B1 * X)	-0.00145	-0.00148	-0.00147
	(A1 * A2 * !B1 * X)	0.00115	0.00116	0.00115
	(A1 * !A2 * !B1 * !X)	-0.00112	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !X)	0.00191	0.00192	0.00191
	(!A1 * !B1 * !X)	-0.00112	-0.00116	-0.00115
	(!A1 * !B1 * !X)	0.00191	0.00192	0.00191

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1_N	A2_N	B1	B2	Y
0	0	x	x	0
x	1	0	x	1
x	1	1	0	1
x	1	1	1	0
1	x	0	x	1
1	x	1	0	1
1	x	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2oi_1	11.18880
sky130_fd_sc_hs__a2bb2oi_2	17.58240
sky130_fd_sc_hs__a2bb2oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__a2bb2oi_1	0.00208	0.00229	0.00237	0.00260	0.07290
sky130_fd_sc_hs__a2bb2oi_2	0.00228	0.00242	0.00458	0.00473	0.14727
sky130_fd_sc_hs__a2bb2oi_4	0.00355	0.00385	0.00908	0.00948	0.28554

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.00011	0.00014
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.00018	0.00022
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.00033	0.00045

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2bb2oi_1	A1_N->Y (RR)	0.61090	2.37589	10.33140
	A2_N->Y (RR)	0.60334	2.35448	10.25050
	B1->Y (FR)	0.63350	2.76975	14.28800
	B2->Y (FR)	0.51143	2.61039	13.99140
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.52411	2.03159	10.35290
	A2_N->Y (RR)	0.51836	2.02070	10.30530
	B1->Y (FR)	0.57405	2.44576	14.32510
	B2->Y (FR)	0.42842	2.28607	14.10230
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.53725	1.89366	10.67380
	A2_N->Y (RR)	0.52789	1.86601	10.57710
	B1->Y (FR)	0.54832	2.20646	14.29280
	B2->Y (FR)	0.40607	2.04815	14.01900

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2bb2oi_1	A1_N->Y (FF)	0.74318	1.76071	7.41066
	A2_N->Y (FF)	0.69915	1.62017	6.84248
	B1->Y (RF)	0.08069	0.76704	4.64956
	B2->Y (RF)	0.07510	0.76892	4.68554
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	1.00572	2.04311	7.91842
	A2_N->Y (FF)	0.96162	1.89870	7.40685
	B1->Y (RF)	0.07987	0.74040	4.76524
	B2->Y (RF)	0.07009	0.73581	4.82448
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.95168	1.96707	7.82767
	A2_N->Y (FF)	0.86089	1.77657	7.24473
	B1->Y (RF)	0.07822	0.69783	4.73626
	B2->Y (RF)	0.07013	0.70300	4.88401

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00455	0.00447	0.00439
	A1_N	0.00299	0.00289	0.00282
	A2_N	0.00406	0.00393	0.00384
	A2_N	0.00270	0.00256	0.00247
	B1	0.00070	0.00065	0.00064
	B1	0.00309	0.00303	0.00303
	B2	0.00038	0.00034	0.00033
	B2	0.00247	0.00241	0.00241
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00691	0.00681	0.00674
	A1_N	0.00574	0.00564	0.00556
	A2_N	0.00628	0.00616	0.00606
	A2_N	0.00540	0.00528	0.00518
	B1	0.00154	0.00144	0.00143
	B1	0.00631	0.00619	0.00618
	B2	0.00075	0.00068	0.00068
	B2	0.00469	0.00460	0.00461
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01230	0.01215	0.01204
	A1_N	0.01093	0.01078	0.01066
	A2_N	0.01123	0.01100	0.01090
	A2_N	0.01019	0.00997	0.00984
	B1	0.00286	0.00265	0.00265
	B1	0.01248	0.01225	0.01223
	B2	0.00148	0.00133	0.00136
	B2	0.00948	0.00929	0.00933

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00249	0.00253	0.00255
	A1_N	0.00403	0.00407	0.00407
	A2_N	0.00250	0.00249	0.00247
	A2_N	0.00382	0.00381	0.00379
	B1	0.00276	0.00272	0.00266
	B1	0.00037	0.00032	0.00027
	B2	0.00241	0.00236	0.00230
	B2	0.00038	0.00031	0.00026
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00403	0.00419	0.00422
	A1_N	0.00513	0.00530	0.00531
	A2_N	0.00417	0.00427	0.00447
	A2_N	0.00496	0.00506	0.00507
	B1	0.00514	0.00505	0.00495
	B1	0.00038	0.00027	0.00017
	B2	0.00425	0.00413	0.00403
	B2	0.00041	0.00027	0.00018
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.00843	0.00876	0.00939
	A1_N	0.00969	0.01002	0.01012
	A2_N	0.00820	0.00844	0.00863
	A2_N	0.00907	0.00932	0.00939
	B1	0.01023	0.01003	0.00984
	B1	0.00064	0.00039	0.00023
	B2	0.00845	0.00819	0.00801
	B2	0.00067	0.00037	0.00023

Passive power(pJ) for A1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00060	0.00060	0.00060
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00083	-0.00084	-0.00083
	(!A2_N * B1 * B2 * !Y)	0.00291	0.00284	0.00273
	(!A2_N * B1 * B2 * !Y)	0.00076	0.00068	0.00059
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00081	0.00081	0.00081
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00079	-0.00080	-0.00080
	(!A2_N * B1 * B2 * !Y)	0.00388	0.00382	0.00367
	(!A2_N * B1 * B2 * !Y)	0.00150	0.00143	0.00131
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00087	0.00087	0.00086
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00161	-0.00164	-0.00163
	(!A2_N * B1 * B2 * !Y)	0.00649	0.00634	0.00601
	(!A2_N * B1 * B2 * !Y)	0.00269	0.00253	0.00225

Passive power(pJ) for A1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00060	-0.00060	-0.00059
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00084	0.00084	0.00083
	(!A2_N * B1 * B2 * !Y)	0.00089	0.00084	0.00084
	(!A2_N * B1 * B2 * !Y)	0.00303	0.00298	0.00297
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00081	-0.00081	-0.00081
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00080	0.00080	0.00080
	(!A2_N * B1 * B2 * !Y)	0.00149	0.00142	0.00142
	(!A2_N * B1 * B2 * !Y)	0.00385	0.00379	0.00378
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00086	-0.00086	-0.00086
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00164	0.00164	0.00163
	(!A2_N * B1 * B2 * !Y)	0.00334	0.00325	0.00325
	(!A2_N * B1 * B2 * !Y)	0.00710	0.00700	0.00700

Passive power(pJ) for A2_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00072	0.00072	0.00072
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00056	-0.00056	-0.00055
	(!A1_N * B1 * B2 * !Y)	0.00246	0.00235	0.00225
	(!A1_N * B1 * B2 * !Y)	0.00050	0.00039	0.00030
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00082	0.00082	0.00082
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00055	-0.00055	-0.00055
	(!A1_N * B1 * B2 * !Y)	0.00332	0.00323	0.00308
	(!A1_N * B1 * B2 * !Y)	0.00123	0.00112	0.00099
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00119	0.00121	0.00120
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00112	-0.00113	-0.00112
	(!A1_N * B1 * B2 * !Y)	0.00543	0.00526	0.00500
	(!A1_N * B1 * B2 * !Y)	0.00193	0.00175	0.00152

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00071	-0.00071	-0.00072
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00057	0.00057	0.00056
	(!A1_N * B1 * B2 * !Y)	0.00089	0.00082	0.00079
	(!A1_N * B1 * B2 * !Y)	0.00284	0.00277	0.00274
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00081	-0.00081	-0.00082
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00057	0.00057	0.00056
	(!A1_N * B1 * B2 * !Y)	0.00162	0.00152	0.00150
	(!A1_N * B1 * B2 * !Y)	0.00370	0.00360	0.00357
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00115	-0.00116	-0.00120
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00117	0.00117	0.00113
	(!A1_N * B1 * B2 * !Y)	0.00312	0.00298	0.00295
	(!A1_N * B1 * B2 * !Y)	0.00656	0.00645	0.00640

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00075	0.00076	0.00075
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00091	-0.00092	-0.00091
	(!A1_N * !A2_N * B2 * !Y)	0.00081	0.00081	0.00080
	(!A1_N * !A2_N * B2 * !Y)	-0.00088	-0.00089	-0.00089
	(!A1_N * !A2_N * !B2 * !Y)	0.00075	0.00076	0.00075
	(!A1_N * !A2_N * !B2 * !Y)	-0.00091	-0.00092	-0.00091
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00144	0.00144	0.00143
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00185	-0.00187	-0.00186
	(!A1_N * !A2_N * B2 * !Y)	0.00156	0.00156	0.00154
	(!A1_N * !A2_N * B2 * !Y)	-0.00179	-0.00181	-0.00180
	(!A1_N * !A2_N * !B2 * !Y)	0.00144	0.00144	0.00143
	(!A1_N * !A2_N * !B2 * !Y)	-0.00184	-0.00186	-0.00186
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00286	0.00286	0.00284
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00372	-0.00374	-0.00373
	(!A1_N * !A2_N * B2 * !Y)	0.00308	0.00311	0.00309
	(!A1_N * !A2_N * B2 * !Y)	-0.00353	-0.00362	-0.00360
	(!A1_N * !A2_N * !B2 * !Y)	0.00287	0.00288	0.00285
	(!A1_N * !A2_N * !B2 * !Y)	-0.00371	-0.00374	-0.00372

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00074	-0.00076	-0.00075
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00092	0.00092	0.00092
	(!A1_N * !A2_N * B2 * !Y)	-0.00080	-0.00081	-0.00080
	(!A1_N * !A2_N * B2 * !Y)	0.00089	0.00089	0.00089
	(!A1_N * !A2_N * !B2 * !Y)	-0.00074	-0.00076	-0.00075
	(!A1_N * !A2_N * !B2 * !Y)	0.00091	0.00092	0.00092
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00140	-0.00144	-0.00143
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00185	0.00188	0.00186
	(!A1_N * !A2_N * B2 * !Y)	-0.00155	-0.00155	-0.00154
	(!A1_N * !A2_N * B2 * !Y)	0.00181	0.00181	0.00180
	(!A1_N * !A2_N * !B2 * !Y)	-0.00140	-0.00144	-0.00143
	(!A1_N * !A2_N * !B2 * !Y)	0.00184	0.00188	0.00186
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00278	-0.00286	-0.00284
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00372	0.00377	0.00374
	(!A1_N * !A2_N * B2 * !Y)	-0.00308	-0.00310	-0.00309
	(!A1_N * !A2_N * B2 * !Y)	0.00362	0.00362	0.00360
	(!A1_N * !A2_N * !B2 * !Y)	-0.00279	-0.00288	-0.00285
	(!A1_N * !A2_N * !B2 * !Y)	0.00371	0.00376	0.00373

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00039	0.00039	0.00038
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00109	-0.00110	-0.00111
	(!A1_N * !A2_N * B1 * !Y)	0.00081	0.00080	0.00080
	(!A1_N * !A2_N * B1 * !Y)	-0.00095	-0.00096	-0.00096
	(!A1_N * !A2_N * !B1 * !Y)	0.00075	0.00075	0.00075
	(!A1_N * !A2_N * !B1 * !Y)	-0.00099	-0.00099	-0.00098
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00066	0.00066	0.00063
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00213	-0.00213	-0.00218
	(!A1_N * !A2_N * B1 * !Y)	0.00156	0.00155	0.00154
	(!A1_N * !A2_N * B1 * !Y)	-0.00178	-0.00180	-0.00178
	(!A1_N * !A2_N * !B1 * !Y)	0.00143	0.00145	0.00144
	(!A1_N * !A2_N * !B1 * !Y)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00124	0.00124	0.00119
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00435	-0.00437	-0.00446
	(!A1_N * !A2_N * B1 * !Y)	0.00310	0.00308	0.00306
	(!A1_N * !A2_N * B1 * !Y)	-0.00359	-0.00364	-0.00361
	(!A1_N * !A2_N * !B1 * !Y)	0.00284	0.00287	0.00285
	(!A1_N * !A2_N * !B1 * !Y)	-0.00373	-0.00372	-0.00374

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00037	-0.00038	-0.00037
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00111	0.00113	0.00111
	(!A1_N * !A2_N * B1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A1_N * !A2_N * B1 * !Y)	0.00096	0.00096	0.00096
	(!A1_N * !A2_N * !B1 * !Y)	-0.00073	-0.00075	-0.00075
	(!A1_N * !A2_N * !B1 * !Y)	0.00099	0.00100	0.00099
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00061	-0.00062	-0.00061
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00218	0.00221	0.00218
	(!A1_N * !A2_N * B1 * !Y)	-0.00155	-0.00155	-0.00154
	(!A1_N * !A2_N * B1 * !Y)	0.00180	0.00180	0.00178
	(!A1_N * !A2_N * !B1 * !Y)	-0.00141	-0.00145	-0.00144
	(!A1_N * !A2_N * !B1 * !Y)	0.00184	0.00186	0.00184
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00116	-0.00118	-0.00116
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00446	0.00451	0.00446
	(!A1_N * !A2_N * B1 * !Y)	-0.00306	-0.00308	-0.00306
	(!A1_N * !A2_N * B1 * !Y)	0.00359	0.00364	0.00361
	(!A1_N * !A2_N * !B1 * !Y)	-0.00279	-0.00287	-0.00285
	(!A1_N * !A2_N * !B1 * !Y)	0.00374	0.00372	0.00375

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1_N	A2_N	B1	B2	X
0	0	x	x	1
x	1	0	x	0
x	1	1	0	0
x	1	1	1	1
1	x	0	x	0
1	x	1	0	0
1	x	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2o_1	14.38560
sky130_fd_sc_hs__a2bb2o_2	15.98400
sky130_fd_sc_hs__a2bb2o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__a2bb2o_1	0.00204	0.00215	0.00223	0.00217	0.18660
sky130_fd_sc_hs__a2bb2o_2	0.00216	0.00225	0.00234	0.00253	0.35904
sky130_fd_sc_hs__a2bb2o_4	0.00236	0.00255	0.00415	0.00424	0.72963

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.00015	0.00018
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.00019	0.00022
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.00031	0.00035

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2bb2o_1	A1_N->X (FR)	0.97523	2.70491	13.91950
	A2_N->X (FR)	0.91797	2.55253	13.29870
	B1->X (RR)	0.28263	1.67394	9.86032
	B2->X (RR)	0.27503	1.65786	9.64269
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.96628	2.51960	13.96290
	A2_N->X (FR)	0.91653	2.37278	13.35080
	B1->X (RR)	0.26363	1.49138	9.99094
	B2->X (RR)	0.25886	1.48913	9.82531
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	1.22406	2.63425	14.43420
	A2_N->X (FR)	1.17322	2.49052	13.93980
	B1->X (RR)	0.28404	1.37375	10.08250
	B2->X (RR)	0.27382	1.36567	9.89796

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2bb2o_1	A1_N->X (RF)	0.93666	1.65842	4.52263
	A2_N->X (RF)	0.92581	1.63704	4.44312
	B1->X (FF)	0.95305	2.05995	8.28805
	B2->X (FF)	0.83488	1.93254	8.10073
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	1.22807	1.98486	4.92225
	A2_N->X (RF)	1.21897	1.96256	4.83899
	B1->X (FF)	1.24590	2.38650	8.78547
	B2->X (FF)	1.12989	2.25234	8.62891
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	1.12163	1.84394	4.82263
	A2_N->X (RF)	1.10876	1.82379	4.74540
	B1->X (FF)	1.18599	2.28378	8.74178
	B2->X (FF)	1.04909	2.13737	8.55025

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.00443	0.00450	0.00445
	A1_N	0.00582	0.00590	0.00584
	A2_N	0.00440	0.00442	0.00436
	A2_N	0.00554	0.00556	0.00551
	B1	0.00469	0.00469	0.00465
	B1	0.00228	0.00228	0.00225
	B2	0.00423	0.00420	0.00415
	B2	0.00228	0.00225	0.00221
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00580	0.00600	0.00605
	A1_N	0.00733	0.00754	0.00757
	A2_N	0.00586	0.00599	0.00599
	A2_N	0.00707	0.00720	0.00722
	B1	0.00616	0.00624	0.00626
	B1	0.00376	0.00383	0.00423
	B2	0.00580	0.00584	0.00582
	B2	0.00376	0.00379	0.00379
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.00946	0.00981	0.01004
	A1_N	0.01065	0.01100	0.01126
	A2_N	0.00941	0.00973	0.00991
	A2_N	0.01034	0.01066	0.01084
	B1	0.01116	0.01133	0.01142
	B1	0.00672	0.00688	0.00697
	B2	0.01037	0.01047	0.01050
	B2	0.00672	0.00682	0.00686

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.00609	0.00601	0.00588
	A1_N	0.00468	0.00461	0.00447
	A2_N	0.00555	0.00547	0.00536
	A2_N	0.00437	0.00429	0.00417
	B1	0.00235	0.00240	0.00242
	B1	0.00475	0.00479	0.00477
	B2	0.00224	0.00226	0.00230
	B2	0.00422	0.00423	0.00421
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00740	0.00748	0.00738
	A1_N	0.00585	0.00593	0.00584
	A2_N	0.00686	0.00691	0.00684
	A2_N	0.00560	0.00565	0.00558
	B1	0.00361	0.00378	0.00380
	B1	0.00602	0.00618	0.00619
	B2	0.00343	0.00355	0.00357
	B2	0.00550	0.00563	0.00564
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01263	0.01293	0.01292
	A1_N	0.01136	0.01166	0.01163
	A2_N	0.01205	0.01237	0.01237
	A2_N	0.01102	0.01133	0.01131
	B1	0.00760	0.00794	0.00803
	B1	0.01202	0.01236	0.01241
	B2	0.00708	0.00737	0.00745
	B2	0.01080	0.01109	0.01115

Passive power(pJ) for A1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00065	0.00065	0.00064
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00077	-0.00079	-0.00078
	(!A2_N * B1 * B2 * X)	0.00278	0.00271	0.00260
	(!A2_N * B1 * B2 * X)	0.00072	0.00065	0.00056
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00067	0.00067	0.00067
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00082	-0.00084	-0.00083
	(!A2_N * B1 * B2 * X)	0.00285	0.00278	0.00266
	(!A2_N * B1 * B2 * X)	0.00067	0.00059	0.00050
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00076	0.00077	0.00076
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00088	-0.00089	-0.00089
	(!A2_N * B1 * B2 * X)	0.00386	0.00379	0.00363
	(!A2_N * B1 * B2 * X)	0.00141	0.00132	0.00120

Passive power(pJ) for A1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00065	-0.00064	-0.00064
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00079	0.00079	0.00078
	(!A2_N * B1 * B2 * X)	0.00088	0.00084	0.00083
	(!A2_N * B1 * B2 * X)	0.00292	0.00288	0.00288
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00084	0.00084	0.00083
	(!A2_N * B1 * B2 * X)	0.00082	0.00078	0.00077
	(!A2_N * B1 * B2 * X)	0.00299	0.00294	0.00294
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00090	0.00089	0.00089
	(!A2_N * B1 * B2 * X)	0.00076	0.00070	0.00069
	(!A2_N * B1 * B2 * X)	0.00319	0.00313	0.00312

Passive power(pJ) for A2_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00072	0.00072	0.00072
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00053	-0.00053	-0.00053
	(!A1_N * B1 * B2 * X)	0.00228	0.00218	0.00208
	(!A1_N * B1 * B2 * X)	0.00044	0.00034	0.00026
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00073	0.00073	0.00072
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00053	-0.00053	-0.00053
	(!A1_N * B1 * B2 * X)	0.00233	0.00222	0.00212
	(!A1_N * B1 * B2 * X)	0.00044	0.00032	0.00023
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00087	0.00087	0.00087
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00059	-0.00060	-0.00059
	(!A1_N * B1 * B2 * X)	0.00334	0.00323	0.00309
	(!A1_N * B1 * B2 * X)	0.00113	0.00101	0.00089

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00070	-0.00071	-0.00072
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00054	0.00055	0.00053
	(!A1_N * B1 * B2 * X)	0.00088	0.00082	0.00080
	(!A1_N * B1 * B2 * X)	0.00271	0.00264	0.00262
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00071	-0.00072	-0.00072
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00054	0.00054	0.00053
	(!A1_N * B1 * B2 * X)	0.00087	0.00080	0.00077
	(!A1_N * B1 * B2 * X)	0.00276	0.00269	0.00266
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00086	-0.00086	-0.00087
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00061	0.00061	0.00060
	(!A1_N * B1 * B2 * X)	0.00077	0.00068	0.00065
	(!A1_N * B1 * B2 * X)	0.00297	0.00288	0.00285

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00080	0.00080	0.00079
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00084	-0.00084	-0.00084
	(!A1_N * !A2_N * B2 * X)	0.00083	0.00084	0.00083
	(!A1_N * !A2_N * B2 * X)	-0.00080	-0.00082	-0.00082
	(!A1_N * !A2_N * !B2 * X)	0.00080	0.00080	0.00079
	(!A1_N * !A2_N * !B2 * X)	-0.00084	-0.00084	-0.00084
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00076	0.00076	0.00075
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00086	-0.00086	-0.00085
	(!A1_N * !A2_N * B2 * X)	0.00082	0.00081	0.00081
	(!A1_N * !A2_N * B2 * X)	-0.00082	-0.00083	-0.00082
	(!A1_N * !A2_N * !B2 * X)	0.00076	0.00076	0.00075
	(!A1_N * !A2_N * !B2 * X)	-0.00086	-0.00086	-0.00085
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00125	0.00125	0.00125
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00172	-0.00172	-0.00172
	(!A1_N * !A2_N * B2 * X)	0.00136	0.00136	0.00135
	(!A1_N * !A2_N * B2 * X)	-0.00165	-0.00167	-0.00166
	(!A1_N * !A2_N * !B2 * X)	0.00126	0.00126	0.00125
	(!A1_N * !A2_N * !B2 * X)	-0.00171	-0.00172	-0.00171

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00079	-0.00080	-0.00079
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00084	0.00084	0.00084
	(!A1_N * !A2_N * B2 * X)	-0.00083	-0.00084	-0.00083
	(!A1_N * !A2_N * B2 * X)	0.00082	0.00083	0.00082
	(!A1_N * !A2_N * !B2 * X)	-0.00079	-0.00080	-0.00079
	(!A1_N * !A2_N * !B2 * X)	0.00084	0.00085	0.00084
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00074	-0.00076	-0.00075
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00086	0.00086	0.00086
	(!A1_N * !A2_N * B2 * X)	-0.00081	-0.00081	-0.00081
	(!A1_N * !A2_N * B2 * X)	0.00083	0.00083	0.00082
	(!A1_N * !A2_N * !B2 * X)	-0.00074	-0.00076	-0.00075
	(!A1_N * !A2_N * !B2 * X)	0.00086	0.00086	0.00086
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00123	-0.00125	-0.00125
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00173	0.00173	0.00172
	(!A1_N * !A2_N * B2 * X)	-0.00135	-0.00135	-0.00135
	(!A1_N * !A2_N * B2 * X)	0.00167	0.00167	0.00166
	(!A1_N * !A2_N * !B2 * X)	-0.00123	-0.00126	-0.00125
	(!A1_N * !A2_N * !B2 * X)	0.00172	0.00173	0.00171

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00035	0.00035	0.00034
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00095	-0.00096	-0.00097
	(!A1_N * !A2_N * B1 * X)	0.00064	0.00064	0.00063
	(!A1_N * !A2_N * B1 * X)	-0.00089	-0.00090	-0.00090
	(!A1_N * !A2_N * !B1 * X)	0.00059	0.00060	0.00059
	(!A1_N * !A2_N * !B1 * X)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00035	0.00035	0.00034
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00105	-0.00106	-0.00107
	(!A1_N * !A2_N * B1 * X)	0.00080	0.00080	0.00079
	(!A1_N * !A2_N * B1 * X)	-0.00088	-0.00089	-0.00088
	(!A1_N * !A2_N * !B1 * X)	0.00074	0.00074	0.00074
	(!A1_N * !A2_N * !B1 * X)	-0.00091	-0.00092	-0.00092
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00060	0.00060	0.00057
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00194	-0.00195	-0.00198
	(!A1_N * !A2_N * B1 * X)	0.00136	0.00136	0.00135
	(!A1_N * !A2_N * B1 * X)	-0.00165	-0.00167	-0.00166
	(!A1_N * !A2_N * !B1 * X)	0.00125	0.00126	0.00125
	(!A1_N * !A2_N * !B1 * X)	-0.00171	-0.00172	-0.00171

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00034	-0.00034	-0.00033
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00099	0.00098	0.00098
	(!A1_N * !A2_N * B1 * X)	-0.00063	-0.00064	-0.00063
	(!A1_N * !A2_N * B1 * X)	0.00090	0.00090	0.00090
	(!A1_N * !A2_N * !B1 * X)	-0.00059	-0.00060	-0.00059
	(!A1_N * !A2_N * !B1 * X)	0.00093	0.00093	0.00092
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00034	-0.00034	-0.00034
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00108	0.00107	0.00107
	(!A1_N * !A2_N * B1 * X)	-0.00080	-0.00080	-0.00079
	(!A1_N * !A2_N * B1 * X)	0.00089	0.00089	0.00088
	(!A1_N * !A2_N * !B1 * X)	-0.00072	-0.00074	-0.00074
	(!A1_N * !A2_N * !B1 * X)	0.00091	0.00093	0.00092
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00056	-0.00056	-0.00056
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00198	0.00199	0.00198
	(!A1_N * !A2_N * B1 * X)	-0.00135	-0.00135	-0.00135
	(!A1_N * !A2_N * B1 * X)	0.00167	0.00167	0.00166
	(!A1_N * !A2_N * !B1 * X)	-0.00122	-0.00126	-0.00125
	(!A1_N * !A2_N * !B1 * X)	0.00171	0.00173	0.00171

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	C1	Y
0	x	x	0	0	1
0	x	x	x	1	0
x	x	x	1	x	0
1	0	x	0	0	1
1	0	x	x	1	0
1	1	0	0	0	1
1	1	0	x	1	0
1	1	1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311oi_1	11.18880
sky130_fd_sc_hs__a311oi_2	19.18080
sky130_fd_sc_hs__a311oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__a311oi_1	0.00258	0.00261	0.00253	0.00273	0.00262	0.04337
sky130_fd_sc_hs__a311oi_2	0.00488	0.00459	0.00442	0.00389	0.00385	0.08670
sky130_fd_sc_hs__a311oi_4	0.00942	0.00896	0.00895	0.00726	0.00752	0.16760

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	0.00006	0.00015
sky130_fd_sc_hs__a311oi_2	0.00000	0.00010	0.00022
sky130_fd_sc_hs__a311oi_4	0.00000	0.00020	0.00045

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (FR)	1.10523	3.39844	14.19110
	A2->Y (FR)	1.35018	3.67059	14.54730
	A3->Y (FR)	1.49200	3.81816	14.65660
	B1->Y (FR)	1.39893	3.67428	14.61100
	C1->Y (FR)	1.20588	3.38158	13.79980
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.86917	2.90401	14.21330
	A2->Y (FR)	1.08396	3.13130	14.46840
	A3->Y (FR)	1.28614	3.35285	14.71380
	B1->Y (FR)	1.14856	3.16995	14.62450
	C1->Y (FR)	0.91308	2.83859	13.77280
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.78688	2.57079	14.06970
	A2->Y (FR)	1.01650	2.81083	14.38280
	A3->Y (FR)	1.23001	3.05535	14.69550
	B1->Y (FR)	1.07985	2.86073	14.60930
	C1->Y (FR)	0.86467	2.54922	13.78170

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.10386	0.81314	4.39606
	A2->Y (RF)	0.11950	0.82771	4.47421
	A3->Y (RF)	0.12420	0.78946	4.24511
	B1->Y (RF)	0.06889	0.66239	3.76802
	C1->Y (RF)	0.06681	0.65194	3.74856
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.08692	0.78173	4.56144
	A2->Y (RF)	0.10191	0.77810	4.52482
	A3->Y (RF)	0.11044	0.74991	4.28467
	B1->Y (RF)	0.07513	0.73748	4.48978
	C1->Y (RF)	0.07062	0.71873	4.45690
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.08390	0.74726	4.60934
	A2->Y (RF)	0.09986	0.74573	4.55628
	A3->Y (RF)	0.10792	0.71263	4.25925
	B1->Y (RF)	0.07071	0.69161	4.45511
	C1->Y (RF)	0.06892	0.68641	4.51499

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00041	0.00032	0.00030
	A1	0.00371	0.00360	0.00359
	A2	0.00073	0.00063	0.00061
	A2	0.00444	0.00433	0.00430
	A3	0.00086	0.00078	0.00076
	A3	0.00498	0.00490	0.00487
	B1	0.00093	0.00084	0.00082
	B1	0.00463	0.00455	0.00452
	C1	0.00089	0.00080	0.00078
	C1	0.00431	0.00422	0.00420
sky130_fd_sc_hs__a311oi_2	A1	0.00015	0.00001	-0.00001
	A1	0.00604	0.00588	0.00588
	A2	0.00076	0.00060	0.00058
	A2	0.00738	0.00722	0.00718
	A3	0.00143	0.00131	0.00128
	A3	0.00873	0.00859	0.00854
	B1	0.00195	0.00186	0.00183
	B1	0.00784	0.00773	0.00768
	C1	0.00191	0.00180	0.00177
	C1	0.00714	0.00702	0.00697

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00005	-0.00029	-0.00032
	A1	0.01142	0.01116	0.01114
	A2	0.00116	0.00083	0.00081
	A2	0.01415	0.01382	0.01376
	A3	0.00238	0.00212	0.00207
	A3	0.01688	0.01664	0.01651
	B1	0.00340	0.00325	0.00320
	B1	0.01493	0.01473	0.01465
	C1	0.00334	0.00312	0.00306
	C1	0.01366	0.01340	0.01333

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00390	0.00384	0.00373
	A1	0.00072	0.00066	0.00057
	A2	0.00435	0.00429	0.00418
	A2	0.00072	0.00066	0.00057
	A3	0.00478	0.00473	0.00461
	A3	0.00070	0.00064	0.00055
	B1	0.00405	0.00403	0.00395
	B1	0.00031	0.00026	0.00020
	C1	0.00345	0.00344	0.00341
	C1	-0.00005	-0.00007	-0.00010

sky130_fd_sc_hs__a311oi_2	**A1**	0.00679	0.00667	0.00641
	A1	0.00120	0.00106	0.00087
	A2	0.00762	0.00751	0.00724
	A2	0.00123	0.00110	0.00090
	A3	0.00840	0.00828	0.00800
	A3	0.00121	0.00109	0.00088
	B1	0.00616	0.00608	0.00595
	B1	0.00019	0.00009	-0.00002
	C1	0.00474	0.00471	0.00468
	C1	-0.00066	-0.00069	-0.00072
sky130_fd_sc_hs__a311oi_4	**A1**	0.01311	0.01282	0.01236
	A1	0.00220	0.00190	0.00154
	A2	0.01478	0.01452	0.01404
	A2	0.00219	0.00195	0.00157
	A3	0.01652	0.01628	0.01574
	A3	0.00217	0.00193	0.00155
	B1	0.01189	0.01171	0.01149
	B1	0.00018	-0.00002	-0.00021
	C1	0.00930	0.00923	0.00923
	C1	-0.00136	-0.00147	-0.00147

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A2 * A3 * B1 * C1 * !Y)**	0.00081	0.00081	0.00080
	(A2 * A3 * B1 * C1 * !Y)	-0.00085	-0.00087	-0.00086
	(A2 * A3 * B1 * !C1 * !Y)	0.00081	0.00080	0.00080
	(A2 * A3 * B1 * !C1 * !Y)	-0.00085	-0.00087	-0.00086
	(A2 * A3 * !B1 * C1 * !Y)	0.00080	0.00080	0.00080
	(A2 * A3 * !B1 * C1 * !Y)	-0.00082	-0.00083	-0.00083
	(A2 * !A3 * B1 * C1 * !Y)	0.00073	0.00073	0.00073
	(A2 * !A3 * B1 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * !A3 * B1 * !C1 * !Y)	0.00072	0.00073	0.00072
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * !A3 * !B1 * C1 * !Y)	0.00072	0.00073	0.00072
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * !A3 * !B1 * !C1 * Y)	0.00030	0.00031	0.00028
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00106	-0.00107	-0.00112
	(!A2 * B1 * C1 * !Y)	0.00075	0.00076	0.00075
	(!A2 * B1 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A2 * B1 * !C1 * !Y)	0.00075	0.00076	0.00075
	(!A2 * B1 * !C1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A2 * !B1 * C1 * !Y)	0.00075	0.00075	0.00075
	(!A2 * !B1 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A2 * !B1 * !C1 * Y)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !C1 * Y)	-0.00109	-0.00110	-0.00112

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00156	0.00156	0.00156
	(A2 * A3 * B1 * C1 * !Y)	-0.00178	-0.00181	-0.00180
	(A2 * A3 * B1 * !C1 * !Y)	0.00156	0.00156	0.00156
	(A2 * A3 * B1 * !C1 * !Y)	-0.00178	-0.00182	-0.00180
	(A2 * A3 * !B1 * C1 * !Y)	0.00156	0.00156	0.00156
	(A2 * A3 * !B1 * C1 * !Y)	-0.00171	-0.00174	-0.00173
	(A2 * !A3 * B1 * C1 * !Y)	0.00142	0.00142	0.00142
	(A2 * !A3 * B1 * C1 * !Y)	-0.00189	-0.00189	-0.00189
	(A2 * !A3 * B1 * !C1 * !Y)	0.00141	0.00141	0.00141
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00189	-0.00189	-0.00189
	(A2 * !A3 * !B1 * C1 * !Y)	0.00141	0.00141	0.00141
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00189	-0.00188	-0.00189
	(A2 * !A3 * !B1 * !C1 * Y)	0.00066	0.00066	0.00061
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00213	-0.00215	-0.00225
	(!A2 * B1 * C1 * !Y)	0.00146	0.00147	0.00146
	(!A2 * B1 * C1 * !Y)	-0.00188	-0.00189	-0.00189
	(!A2 * B1 * !C1 * !Y)	0.00146	0.00147	0.00146
	(!A2 * B1 * !C1 * !Y)	-0.00189	-0.00189	-0.00189
	(!A2 * !B1 * C1 * !Y)	0.00146	0.00146	0.00146
	(!A2 * !B1 * C1 * !Y)	-0.00189	-0.00189	-0.00189
	(!A2 * !B1 * !C1 * Y)	0.00064	0.00065	0.00062
	(!A2 * !B1 * !C1 * Y)	-0.00221	-0.00223	-0.00226

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00306	0.00306	0.00304
	(A2 * A3 * B1 * C1 * !Y)	-0.00354	-0.00360	-0.00356
	(A2 * A3 * B1 * !C1 * !Y)	0.00306	0.00306	0.00304
	(A2 * A3 * B1 * !C1 * !Y)	-0.00354	-0.00360	-0.00356
	(A2 * A3 * !B1 * C1 * !Y)	0.00306	0.00306	0.00305
	(A2 * A3 * !B1 * C1 * !Y)	-0.00338	-0.00345	-0.00342
	(A2 * !A3 * B1 * C1 * !Y)	0.00275	0.00276	0.00274
	(A2 * !A3 * B1 * C1 * !Y)	-0.00374	-0.00374	-0.00373
	(A2 * !A3 * B1 * !C1 * !Y)	0.00273	0.00275	0.00273
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00373	-0.00374	-0.00373
	(A2 * !A3 * !B1 * C1 * !Y)	0.00272	0.00273	0.00272
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00374	-0.00374	-0.00373
	(A2 * !A3 * !B1 * !C1 * Y)	0.00126	0.00125	0.00115
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00420	-0.00421	-0.00442
	(!A2 * B1 * C1 * !Y)	0.00284	0.00287	0.00285
	(!A2 * B1 * C1 * !Y)	-0.00373	-0.00375	-0.00373
	(!A2 * B1 * !C1 * !Y)	0.00285	0.00286	0.00284
	(!A2 * B1 * !C1 * !Y)	-0.00373	-0.00375	-0.00373
	(!A2 * !B1 * C1 * !Y)	0.00285	0.00287	0.00285
	(!A2 * !B1 * C1 * !Y)	-0.00374	-0.00375	-0.00373
	(!A2 * !B1 * !C1 * Y)	0.00124	0.00124	0.00119
	(!A2 * !B1 * !C1 * Y)	-0.00437	-0.00439	-0.00445

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A2 * A3 * B1 * C1 * !Y)**	-0.00081	-0.00081	-0.00080
	(A2 * A3 * B1 * C1 * !Y)	0.00087	0.00087	0.00086
	(A2 * A3 * B1 * !C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A2 * A3 * B1 * !C1 * !Y)	0.00086	0.00087	0.00086
	(A2 * A3 * !B1 * C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A2 * A3 * !B1 * C1 * !Y)	0.00084	0.00083	0.00083
	(A2 * !A3 * B1 * C1 * !Y)	-0.00071	-0.00073	-0.00073
	(A2 * !A3 * B1 * C1 * !Y)	0.00091	0.00091	0.00090
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00070	-0.00073	-0.00072
	(A2 * !A3 * B1 * !C1 * !Y)	0.00091	0.00091	0.00090
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00070	-0.00073	-0.00072
	(A2 * !A3 * !B1 * C1 * !Y)	0.00091	0.00091	0.00090
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00029	-0.00028	-0.00028
	(A2 * !A3 * !B1 * !C1 * Y)	0.00113	0.00112	0.00112
	(!A2 * B1 * C1 * !Y)	-0.00074	-0.00076	-0.00075
	(!A2 * B1 * C1 * !Y)	0.00090	0.00091	0.00090
	(!A2 * B1 * !C1 * !Y)	-0.00074	-0.00076	-0.00075
	(!A2 * B1 * !C1 * !Y)	0.00091	0.00091	0.00090
	(!A2 * !B1 * C1 * !Y)	-0.00074	-0.00075	-0.00075
	(!A2 * !B1 * C1 * !Y)	0.00091	0.00091	0.00090
	(!A2 * !B1 * !C1 * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * Y)	0.00113	0.00112	0.00112

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00155	-0.00156	-0.00155
	(A2 * A3 * B1 * C1 * !Y)	0.00178	0.00181	0.00180
	(A2 * A3 * B1 * !C1 * !Y)	-0.00155	-0.00156	-0.00155
	(A2 * A3 * B1 * !C1 * !Y)	0.00179	0.00182	0.00180
	(A2 * A3 * !B1 * C1 * !Y)	-0.00156	-0.00156	-0.00156
	(A2 * A3 * !B1 * C1 * !Y)	0.00172	0.00174	0.00173
	(A2 * !A3 * B1 * C1 * !Y)	-0.00137	-0.00142	-0.00142
	(A2 * !A3 * B1 * C1 * !Y)	0.00191	0.00191	0.00189
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00136	-0.00141	-0.00141
	(A2 * !A3 * B1 * !C1 * !Y)	0.00191	0.00191	0.00189
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00135	-0.00141	-0.00141
	(A2 * !A3 * !B1 * C1 * !Y)	0.00191	0.00188	0.00189
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00059	-0.00059	-0.00059
	(A2 * !A3 * !B1 * !C1 * Y)	0.00226	0.00227	0.00226
	(!A2 * B1 * C1 * !Y)	-0.00143	-0.00147	-0.00146
	(!A2 * B1 * C1 * !Y)	0.00188	0.00191	0.00189
	(!A2 * B1 * !C1 * !Y)	-0.00144	-0.00147	-0.00146
	(!A2 * B1 * !C1 * !Y)	0.00191	0.00189	0.00189
	(!A2 * !B1 * C1 * !Y)	-0.00144	-0.00146	-0.00146
	(!A2 * !B1 * C1 * !Y)	0.00191	0.00190	0.00189
	(!A2 * !B1 * !C1 * Y)	-0.00061	-0.00061	-0.00061
	(!A2 * !B1 * !C1 * Y)	0.00228	0.00227	0.00226

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00303	-0.00305	-0.00303
	(A2 * A3 * B1 * C1 * !Y)	0.00356	0.00360	0.00356
	(A2 * A3 * B1 * !C1 * !Y)	-0.00304	-0.00305	-0.00303
	(A2 * A3 * B1 * !C1 * !Y)	0.00356	0.00360	0.00356
	(A2 * A3 * !B1 * C1 * !Y)	-0.00304	-0.00306	-0.00304
	(A2 * A3 * !B1 * C1 * !Y)	0.00342	0.00345	0.00342
	(A2 * !A3 * B1 * C1 * !Y)	-0.00264	-0.00276	-0.00274
	(A2 * !A3 * B1 * C1 * !Y)	0.00376	0.00378	0.00374
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00261	-0.00275	-0.00273
	(A2 * !A3 * B1 * !C1 * !Y)	0.00376	0.00374	0.00374
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00259	-0.00273	-0.00272
	(A2 * !A3 * !B1 * C1 * !Y)	0.00375	0.00376	0.00374
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00114	-0.00114	-0.00113
	(A2 * !A3 * !B1 * !C1 * Y)	0.00446	0.00447	0.00445
	(!A2 * B1 * C1 * !Y)	-0.00280	-0.00287	-0.00285
	(!A2 * B1 * C1 * !Y)	0.00374	0.00378	0.00374
	(!A2 * B1 * !C1 * !Y)	-0.00278	-0.00286	-0.00284
	(!A2 * B1 * !C1 * !Y)	0.00373	0.00377	0.00374
	(!A2 * !B1 * C1 * !Y)	-0.00278	-0.00287	-0.00285
	(!A2 * !B1 * C1 * !Y)	0.00374	0.00376	0.00374
	(!A2 * !B1 * !C1 * Y)	-0.00117	-0.00116	-0.00116
	(!A2 * !B1 * !C1 * Y)	0.00447	0.00447	0.00445

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A3 * B1 * C1 * !Y)**	0.00085	0.00084	0.00084
	(A1 * A3 * B1 * C1 * !Y)	-0.00085	-0.00087	-0.00086
	(A1 * A3 * B1 * !C1 * !Y)	0.00085	0.00084	0.00084
	(A1 * A3 * B1 * !C1 * !Y)	-0.00085	-0.00087	-0.00086
	(A1 * A3 * !B1 * C1 * !Y)	0.00084	0.00084	0.00084
	(A1 * A3 * !B1 * C1 * !Y)	-0.00082	-0.00083	-0.00083
	(A1 * !A3 * B1 * C1 * !Y)	0.00078	0.00078	0.00078
	(A1 * !A3 * B1 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * B1 * !C1 * !Y)	0.00078	0.00078	0.00078
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * !B1 * C1 * !Y)	0.00078	0.00079	0.00078
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * !B1 * !C1 * Y)	0.00036	0.00037	0.00037
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00101	-0.00101	-0.00101
	(!A1 * A3 * B1 * !Y)	0.00078	0.00079	0.00079
	(!A1 * A3 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * !B1 * C1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * !B1 * !C1 * Y)	0.00068	0.00068	0.00068
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00101	-0.00101	-0.00101
	(!A1 * !A3 * B1 * !Y)	0.00053	0.00054	0.00053
	(!A1 * !A3 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00053	0.00054	0.00053
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00039	0.00039	0.00039
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00101	-0.00102	-0.00101

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00154	0.00154	0.00153
	(A1 * A3 * B1 * C1 * !Y)	-0.00176	-0.00178	-0.00177
	(A1 * A3 * B1 * !C1 * !Y)	0.00154	0.00154	0.00153
	(A1 * A3 * B1 * !C1 * !Y)	-0.00176	-0.00178	-0.00177
	(A1 * A3 * !B1 * C1 * !Y)	0.00154	0.00154	0.00153
	(A1 * A3 * !B1 * C1 * !Y)	-0.00168	-0.00172	-0.00170
	(A1 * !A3 * B1 * C1 * !Y)	0.00142	0.00143	0.00142
	(A1 * !A3 * B1 * C1 * !Y)	-0.00187	-0.00188	-0.00187
	(A1 * !A3 * B1 * !C1 * !Y)	0.00142	0.00142	0.00142
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00187	-0.00187	-0.00187
	(A1 * !A3 * !B1 * C1 * !Y)	0.00142	0.00143	0.00142
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00187	-0.00188	-0.00187
	(A1 * !A3 * !B1 * !C1 * Y)	0.00080	0.00081	0.00080
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00187	-0.00188	-0.00187
	(!A1 * A3 * B1 * !Y)	0.00143	0.00145	0.00144
	(!A1 * A3 * B1 * !Y)	-0.00185	-0.00187	-0.00187
	(!A1 * A3 * !B1 * C1 * !Y)	0.00144	0.00144	0.00144
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00187	-0.00187	-0.00187
	(!A1 * A3 * !B1 * !C1 * Y)	0.00143	0.00144	0.00143
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00188	-0.00188	-0.00187
	(!A1 * !A3 * B1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * !A3 * B1 * !Y)	-0.00187	-0.00188	-0.00187
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00186	-0.00188	-0.00187
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00188	-0.00189	-0.00188

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00307	0.00306	0.00305
	(A1 * A3 * B1 * C1 * !Y)	-0.00350	-0.00357	-0.00353
	(A1 * A3 * B1 * !C1 * !Y)	0.00306	0.00306	0.00305
	(A1 * A3 * B1 * !C1 * !Y)	-0.00350	-0.00357	-0.00353
	(A1 * A3 * !B1 * C1 * !Y)	0.00306	0.00306	0.00306
	(A1 * A3 * !B1 * C1 * !Y)	-0.00336	-0.00342	-0.00339
	(A1 * !A3 * B1 * C1 * !Y)	0.00280	0.00281	0.00280
	(A1 * !A3 * B1 * C1 * !Y)	-0.00370	-0.00371	-0.00370
	(A1 * !A3 * B1 * !C1 * !Y)	0.00280	0.00281	0.00280
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00370	-0.00371	-0.00370
	(A1 * !A3 * !B1 * C1 * !Y)	0.00280	0.00280	0.00280
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00371	-0.00370	-0.00370
	(A1 * !A3 * !B1 * !C1 * Y)	0.00155	0.00156	0.00155
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00371	-0.00372	-0.00370
	(!A1 * A3 * B1 * !Y)	0.00287	0.00287	0.00286
	(!A1 * A3 * B1 * !Y)	-0.00370	-0.00371	-0.00370
	(!A1 * A3 * !B1 * C1 * !Y)	0.00284	0.00288	0.00286
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00368	-0.00371	-0.00370
	(!A1 * A3 * !B1 * !C1 * Y)	0.00284	0.00287	0.00285
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00370	-0.00372	-0.00371
	(!A1 * !A3 * B1 * !Y)	0.00179	0.00181	0.00179
	(!A1 * !A3 * B1 * !Y)	-0.00369	-0.00372	-0.00370
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00180	0.00181	0.00179
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00370	-0.00372	-0.00370
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00164	0.00165	0.00164
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00372	-0.00374	-0.00372

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A3 * B1 * C1 * !Y)**	-0.00084	-0.00084	-0.00084
	(A1 * A3 * B1 * C1 * !Y)	0.00087	0.00087	0.00086
	(A1 * A3 * B1 * !C1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A3 * B1 * !C1 * !Y)	0.00087	0.00087	0.00086
	(A1 * A3 * !B1 * C1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A3 * !B1 * C1 * !Y)	0.00084	0.00083	0.00083
	(A1 * !A3 * B1 * C1 * !Y)	-0.00077	-0.00078	-0.00078
	(A1 * !A3 * B1 * C1 * !Y)	0.00090	0.00091	0.00090
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00077	-0.00078	-0.00078
	(A1 * !A3 * B1 * !C1 * !Y)	0.00090	0.00090	0.00090
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00076	-0.00079	-0.00078
	(A1 * !A3 * !B1 * C1 * !Y)	0.00090	0.00091	0.00090
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(A1 * !A3 * !B1 * !C1 * Y)	0.00105	0.00104	0.00102
	(!A1 * A3 * B1 * !Y)	-0.00078	-0.00079	-0.00079
	(!A1 * A3 * B1 * !Y)	0.00090	0.00091	0.00090
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00078	-0.00079	-0.00079
	(!A1 * A3 * !B1 * C1 * !Y)	0.00090	0.00091	0.00090
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00067	-0.00068	-0.00068
	(!A1 * A3 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !A3 * B1 * !Y)	-0.00053	-0.00054	-0.00053
	(!A1 * !A3 * B1 * !Y)	0.00091	0.00091	0.00090
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00053	-0.00054	-0.00053
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00091	0.00091	0.00090
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00039	-0.00039	-0.00039
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00101	0.00102	0.00101

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00153	-0.00153	-0.00153
	(A1 * A3 * B1 * C1 * !Y)	0.00179	0.00178	0.00177
	(A1 * A3 * B1 * !C1 * !Y)	-0.00153	-0.00153	-0.00153
	(A1 * A3 * B1 * !C1 * !Y)	0.00177	0.00178	0.00177
	(A1 * A3 * !B1 * C1 * !Y)	-0.00153	-0.00154	-0.00153
	(A1 * A3 * !B1 * C1 * !Y)	0.00170	0.00172	0.00170
	(A1 * !A3 * B1 * C1 * !Y)	-0.00140	-0.00143	-0.00142
	(A1 * !A3 * B1 * C1 * !Y)	0.00188	0.00188	0.00187
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00139	-0.00142	-0.00142
	(A1 * !A3 * B1 * !C1 * !Y)	0.00187	0.00188	0.00187
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00138	-0.00143	-0.00142
	(A1 * !A3 * !B1 * C1 * !Y)	0.00187	0.00188	0.00187
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00076	-0.00076	-0.00077
	(A1 * !A3 * !B1 * !C1 * Y)	0.00195	0.00193	0.00189
	(!A1 * A3 * B1 * !Y)	-0.00141	-0.00145	-0.00144
	(!A1 * A3 * B1 * !Y)	0.00187	0.00189	0.00187
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00141	-0.00144	-0.00144
	(!A1 * A3 * !B1 * C1 * !Y)	0.00187	0.00189	0.00187
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00140	-0.00144	-0.00143
	(!A1 * A3 * !B1 * !C1 * Y)	0.00188	0.00189	0.00188
	(!A1 * !A3 * B1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !A3 * B1 * !Y)	0.00189	0.00188	0.00187
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00189	0.00188	0.00187
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00085	-0.00086	-0.00085
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00188	0.00190	0.00189

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00304	-0.00306	-0.00304
	(A1 * A3 * B1 * C1 * !Y)	0.00352	0.00357	0.00353
	(A1 * A3 * B1 * !C1 * !Y)	-0.00304	-0.00306	-0.00304
	(A1 * A3 * B1 * !C1 * !Y)	0.00353	0.00357	0.00353
	(A1 * A3 * !B1 * C1 * !Y)	-0.00306	-0.00306	-0.00305
	(A1 * A3 * !B1 * C1 * !Y)	0.00342	0.00342	0.00339
	(A1 * !A3 * B1 * C1 * !Y)	-0.00274	-0.00281	-0.00280
	(A1 * !A3 * B1 * C1 * !Y)	0.00374	0.00373	0.00371
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00273	-0.00281	-0.00280
	(A1 * !A3 * B1 * !C1 * !Y)	0.00373	0.00373	0.00371
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00272	-0.00280	-0.00280
	(A1 * !A3 * !B1 * C1 * !Y)	0.00371	0.00373	0.00371
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00147	-0.00147	-0.00150
	(A1 * !A3 * !B1 * !C1 * Y)	0.00385	0.00382	0.00373
	(!A1 * A3 * B1 * !Y)	-0.00280	-0.00287	-0.00286
	(!A1 * A3 * B1 * !Y)	0.00370	0.00375	0.00371
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00280	-0.00288	-0.00286
	(!A1 * A3 * !B1 * C1 * !Y)	0.00370	0.00374	0.00371
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00279	-0.00287	-0.00285
	(!A1 * A3 * !B1 * !C1 * Y)	0.00371	0.00375	0.00371
	(!A1 * !A3 * B1 * !Y)	-0.00179	-0.00181	-0.00179
	(!A1 * !A3 * B1 * !Y)	0.00375	0.00373	0.00371
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00180	-0.00181	-0.00179
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00375	0.00373	0.00371
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00373	0.00376	0.00374

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A2 * B1 * C1 * !Y)**	0.00090	0.00090	0.00089
	(A1 * A2 * B1 * C1 * !Y)	-0.00086	-0.00087	-0.00087
	(A1 * A2 * B1 * !C1 * !Y)	0.00090	0.00090	0.00089
	(A1 * A2 * B1 * !C1 * !Y)	-0.00086	-0.00087	-0.00087
	(A1 * A2 * !B1 * C1 * !Y)	0.00089	0.00089	0.00089
	(A1 * A2 * !B1 * C1 * !Y)	-0.00083	-0.00084	-0.00084
	(A1 * !A2 * !B1 * !C1 * Y)	0.00075	0.00076	0.00075
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00099	-0.00100	-0.00099
	(!A2 * B1 * !Y)	0.00083	0.00084	0.00084
	(!A2 * B1 * !Y)	-0.00090	-0.00091	-0.00090
	(!A2 * !B1 * C1 * !Y)	0.00083	0.00084	0.00084
	(!A2 * !B1 * C1 * !Y)	-0.00090	-0.00091	-0.00090
	(!A1 * A2 * B1 * !Y)	0.00082	0.00082	0.00082
	(!A1 * A2 * B1 * !Y)	-0.00091	-0.00091	-0.00090
	(!A1 * A2 * !B1 * C1 * !Y)	0.00082	0.00082	0.00082
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00091	-0.00091	-0.00090
	(!A1 * A2 * !B1 * !C1 * Y)	0.00073	0.00074	0.00073
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00099	-0.00100	-0.00099
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00075	0.00076	0.00075
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00099	-0.00100	-0.00099

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00151	0.00151	0.00150
	(A1 * A2 * B1 * C1 * !Y)	-0.00172	-0.00175	-0.00173
	(A1 * A2 * B1 * !C1 * !Y)	0.00151	0.00151	0.00150
	(A1 * A2 * B1 * !C1 * !Y)	-0.00172	-0.00175	-0.00173
	(A1 * A2 * !B1 * C1 * !Y)	0.00150	0.00150	0.00150
	(A1 * A2 * !B1 * C1 * !Y)	-0.00165	-0.00168	-0.00167
	(A1 * !A2 * !B1 * !C1 * Y)	0.00140	0.00140	0.00140
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00182	-0.00182	-0.00182
	(!A2 * B1 * !Y)	0.00139	0.00141	0.00140
	(!A2 * B1 * !Y)	-0.00181	-0.00183	-0.00182
	(!A2 * !B1 * C1 * !Y)	0.00141	0.00141	0.00140
	(!A2 * !B1 * C1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * B1 * !Y)	0.00136	0.00136	0.00136
	(!A1 * A2 * B1 * !Y)	-0.00182	-0.00182	-0.00182
	(!A1 * A2 * !B1 * C1 * !Y)	0.00136	0.00136	0.00136
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00182	-0.00182	-0.00182
	(!A1 * A2 * !B1 * !C1 * Y)	0.00135	0.00136	0.00135
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00182	-0.00183	-0.00182
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00140	0.00141	0.00140
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00308	0.00305	0.00304
	(A1 * A2 * B1 * C1 * !Y)	-0.00350	-0.00354	-0.00351
	(A1 * A2 * B1 * !C1 * !Y)	0.00306	0.00305	0.00304
	(A1 * A2 * B1 * !C1 * !Y)	-0.00348	-0.00353	-0.00351
	(A1 * A2 * !B1 * C1 * !Y)	0.00307	0.00305	0.00305
	(A1 * A2 * !B1 * C1 * !Y)	-0.00336	-0.00340	-0.00338
	(A1 * !A2 * !B1 * !C1 * Y)	0.00282	0.00283	0.00281
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00367	-0.00370	-0.00368
	(!A2 * B1 * !Y)	0.00280	0.00283	0.00281
	(!A2 * B1 * !Y)	-0.00366	-0.00369	-0.00368
	(!A2 * !B1 * C1 * !Y)	0.00280	0.00280	0.00281
	(!A2 * !B1 * C1 * !Y)	-0.00366	-0.00367	-0.00368
	(!A1 * A2 * B1 * !Y)	0.00273	0.00275	0.00273
	(!A1 * A2 * B1 * !Y)	-0.00365	-0.00369	-0.00368
	(!A1 * A2 * !B1 * C1 * !Y)	0.00274	0.00275	0.00273
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00365	-0.00369	-0.00368
	(!A1 * A2 * !B1 * !C1 * Y)	0.00273	0.00273	0.00272
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00366	-0.00369	-0.00368
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00282	0.00283	0.00281
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00367	-0.00370	-0.00368

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A2 * B1 * C1 * !Y)**	-0.00089	-0.00090	-0.00089
	(A1 * A2 * B1 * C1 * !Y)	0.00087	0.00087	0.00087
	(A1 * A2 * B1 * !C1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * B1 * !C1 * !Y)	0.00087	0.00087	0.00087
	(A1 * A2 * !B1 * C1 * !Y)	-0.00089	-0.00089	-0.00089
	(A1 * A2 * !B1 * C1 * !Y)	0.00084	0.00084	0.00084
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00074	-0.00076	-0.00075
	(A1 * !A2 * !B1 * !C1 * Y)	0.00099	0.00100	0.00099
	(!A2 * B1 * !Y)	-0.00082	-0.00084	-0.00084
	(!A2 * B1 * !Y)	0.00091	0.00091	0.00091
	(!A2 * !B1 * C1 * !Y)	-0.00082	-0.00084	-0.00084
	(!A2 * !B1 * C1 * !Y)	0.00091	0.00091	0.00091
	(!A1 * A2 * B1 * !Y)	-0.00080	-0.00082	-0.00082
	(!A1 * A2 * B1 * !Y)	0.00091	0.00091	0.00091
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00080	-0.00082	-0.00082
	(!A1 * A2 * !B1 * C1 * !Y)	0.00091	0.00091	0.00091
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00071	-0.00074	-0.00073
	(!A1 * A2 * !B1 * !C1 * Y)	0.00100	0.00100	0.00099
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00074	-0.00076	-0.00075
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00099	0.00100	0.00099

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00150	-0.00150	-0.00149
	(A1 * A2 * B1 * C1 * !Y)	0.00174	0.00175	0.00173
	(A1 * A2 * B1 * !C1 * !Y)	-0.00150	-0.00150	-0.00149
	(A1 * A2 * B1 * !C1 * !Y)	0.00174	0.00175	0.00173
	(A1 * A2 * !B1 * C1 * !Y)	-0.00150	-0.00150	-0.00150
	(A1 * A2 * !B1 * C1 * !Y)	0.00169	0.00168	0.00167
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00138	-0.00140	-0.00140
	(A1 * !A2 * !B1 * !C1 * Y)	0.00183	0.00184	0.00182
	(!A2 * B1 * !Y)	-0.00138	-0.00141	-0.00140
	(!A2 * B1 * !Y)	0.00184	0.00184	0.00182
	(!A2 * !B1 * C1 * !Y)	-0.00138	-0.00141	-0.00140
	(!A2 * !B1 * C1 * !Y)	0.00183	0.00184	0.00182
	(!A1 * A2 * B1 * !Y)	-0.00132	-0.00136	-0.00136
	(!A1 * A2 * B1 * !Y)	0.00183	0.00184	0.00182
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00132	-0.00136	-0.00136
	(!A1 * A2 * !B1 * C1 * !Y)	0.00183	0.00183	0.00182
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00132	-0.00136	-0.00135
	(!A1 * A2 * !B1 * !C1 * Y)	0.00184	0.00184	0.00182
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00138	-0.00141	-0.00140
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00183	0.00184	0.00182

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00304	-0.00304	-0.00303
	(A1 * A2 * B1 * C1 * !Y)	0.00354	0.00354	0.00351
	(A1 * A2 * B1 * !C1 * !Y)	-0.00304	-0.00304	-0.00303
	(A1 * A2 * B1 * !C1 * !Y)	0.00353	0.00353	0.00351
	(A1 * A2 * !B1 * C1 * !Y)	-0.00305	-0.00305	-0.00304
	(A1 * A2 * !B1 * C1 * !Y)	0.00341	0.00340	0.00338
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00274	-0.00283	-0.00281
	(A1 * !A2 * !B1 * !C1 * Y)	0.00367	0.00372	0.00369
	(!A2 * B1 * !Y)	-0.00274	-0.00283	-0.00281
	(!A2 * B1 * !Y)	0.00366	0.00372	0.00369
	(!A2 * !B1 * C1 * !Y)	-0.00274	-0.00280	-0.00281
	(!A2 * !B1 * C1 * !Y)	0.00366	0.00372	0.00369
	(!A1 * A2 * B1 * !Y)	-0.00262	-0.00275	-0.00273
	(!A1 * A2 * B1 * !Y)	0.00365	0.00371	0.00369
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00262	-0.00275	-0.00273
	(!A1 * A2 * !B1 * C1 * !Y)	0.00365	0.00371	0.00369
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00262	-0.00273	-0.00272
	(!A1 * A2 * !B1 * !C1 * Y)	0.00366	0.00372	0.00369
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00274	-0.00283	-0.00281
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00367	0.00372	0.00369

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311oi_1	**(A1 * A2 * A3 * C1 * !Y)**	0.00086	0.00087	0.00086
	(A1 * A2 * A3 * C1 * !Y)	-0.00070	-0.00069	-0.00069
	(A1 * A2 * A3 * !C1 * !Y)	0.00086	0.00086	0.00085
	(A1 * A2 * A3 * !C1 * !Y)	-0.00064	-0.00065	-0.00065
	(A1 * A2 * !A3 * C1 * !Y)	0.00085	0.00086	0.00085
	(A1 * A2 * !A3 * C1 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * C1 * !Y)	0.00085	0.00086	0.00085
	(A1 * !A2 * C1 * !Y)	-0.00086	-0.00087	-0.00086
	(!A1 * C1 * !Y)	0.00085	0.00086	0.00085
	(!A1 * C1 * !Y)	-0.00086	-0.00087	-0.00086
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00087	0.00088	0.00087
	(A1 * A2 * A3 * C1 * !Y)	-0.00144	-0.00144	-0.00143
	(A1 * A2 * A3 * !C1 * !Y)	0.00088	0.00087	0.00086
	(A1 * A2 * A3 * !C1 * !Y)	-0.00137	-0.00135	-0.00135
	(A1 * A2 * !A3 * C1 * !Y)	0.00088	0.00088	0.00086
	(A1 * A2 * !A3 * C1 * !Y)	-0.00177	-0.00180	-0.00179
	(A1 * !A2 * C1 * !Y)	0.00088	0.00088	0.00086
	(A1 * !A2 * C1 * !Y)	-0.00177	-0.00180	-0.00179
	(!A1 * C1 * !Y)	0.00087	0.00088	0.00086
	(!A1 * C1 * !Y)	-0.00177	-0.00180	-0.00179
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00167	0.00169	0.00167
	(A1 * A2 * A3 * C1 * !Y)	-0.00281	-0.00281	-0.00280
	(A1 * A2 * A3 * !C1 * !Y)	0.00169	0.00167	0.00165
	(A1 * A2 * A3 * !C1 * !Y)	-0.00268	-0.00265	-0.00264
	(A1 * A2 * !A3 * C1 * !Y)	0.00168	0.00168	0.00165
	(A1 * A2 * !A3 * C1 * !Y)	-0.00349	-0.00354	-0.00352
	(A1 * !A2 * C1 * !Y)	0.00168	0.00168	0.00165
	(A1 * !A2 * C1 * !Y)	-0.00348	-0.00354	-0.00352
	(!A1 * C1 * !Y)	0.00168	0.00168	0.00165
	(!A1 * C1 * !Y)	-0.00348	-0.00354	-0.00352

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	(A1 * A2 * A3 * C1 * !Y)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * A3 * C1 * !Y)	0.00070	0.00069	0.00069
	(A1 * A2 * A3 * !C1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * A3 * !C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * A2 * !A3 * C1 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * !A3 * C1 * !Y)	0.00087	0.00087	0.00086
	(A1 * !A2 * C1 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * C1 * !Y)	0.00086	0.00087	0.00086
	(!A1 * C1 * !Y)	-0.00085	-0.00085	-0.00085
	(!A1 * C1 * !Y)	0.00087	0.00087	0.00086
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * A3 * C1 * !Y)	0.00144	0.00144	0.00143
	(A1 * A2 * A3 * !C1 * !Y)	-0.00082	-0.00083	-0.00083
	(A1 * A2 * A3 * !C1 * !Y)	0.00138	0.00139	0.00140
	(A1 * A2 * !A3 * C1 * !Y)	-0.00087	-0.00087	-0.00086
	(A1 * A2 * !A3 * C1 * !Y)	0.00179	0.00180	0.00179
	(A1 * !A2 * C1 * !Y)	-0.00087	-0.00087	-0.00086
	(A1 * !A2 * C1 * !Y)	0.00180	0.00180	0.00179
	(!A1 * C1 * !Y)	-0.00087	-0.00087	-0.00086
	(!A1 * C1 * !Y)	0.00180	0.00180	0.00179

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00166	-0.00166	-0.00166
	(A1 * A2 * A3 * C1 * !Y)	0.00281	0.00281	0.00280
	(A1 * A2 * A3 * !C1 * !Y)	-0.00157	-0.00159	-0.00158
	(A1 * A2 * A3 * !C1 * !Y)	0.00272	0.00274	0.00274
	(A1 * A2 * !A3 * C1 * !Y)	-0.00167	-0.00167	-0.00165
	(A1 * A2 * !A3 * C1 * !Y)	0.00352	0.00354	0.00352
	(A1 * !A2 * C1 * !Y)	-0.00167	-0.00167	-0.00165
	(A1 * !A2 * C1 * !Y)	0.00353	0.00354	0.00352
	(!A1 * C1 * !Y)	-0.00167	-0.00167	-0.00165
	(!A1 * C1 * !Y)	0.00353	0.00354	0.00352

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	(A1 * A2 * B1 * !Y)	0.00091	0.00092	0.00091
	(A1 * A2 * B1 * !Y)	-0.00060	-0.00061	-0.00060
	(A1 * A2 * A3 * !B1 * !Y)	0.00091	0.00092	0.00091
	(A1 * A2 * A3 * !B1 * !Y)	-0.00060	-0.00061	-0.00060
	(A1 * !A2 * B1 * !Y)	0.00091	0.00092	0.00091
	(A1 * !A2 * B1 * !Y)	-0.00061	-0.00061	-0.00061
	(!A1 * B1 * !Y)	0.00092	0.00092	0.00091
	(!A1 * B1 * !Y)	-0.00061	-0.00061	-0.00061
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00104	0.00104	0.00104
	(A1 * A2 * B1 * !Y)	-0.00118	-0.00119	-0.00118
	(A1 * A2 * A3 * !B1 * !Y)	0.00104	0.00104	0.00104
	(A1 * A2 * A3 * !B1 * !Y)	-0.00118	-0.00119	-0.00118
	(A1 * !A2 * B1 * !Y)	0.00104	0.00104	0.00104
	(A1 * !A2 * B1 * !Y)	-0.00119	-0.00119	-0.00118
	(!A1 * B1 * !Y)	0.00104	0.00104	0.00104
	(!A1 * B1 * !Y)	-0.00119	-0.00119	-0.00118
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00206	0.00207	0.00206
	(A1 * A2 * B1 * !Y)	-0.00235	-0.00236	-0.00235
	(A1 * A2 * A3 * !B1 * !Y)	0.00207	0.00207	0.00206
	(A1 * A2 * A3 * !B1 * !Y)	-0.00236	-0.00236	-0.00235
	(A1 * !A2 * B1 * !Y)	0.00207	0.00207	0.00206
	(A1 * !A2 * B1 * !Y)	-0.00236	-0.00236	-0.00235
	(!A1 * B1 * !Y)	0.00208	0.00207	0.00206
	(!A1 * B1 * !Y)	-0.00237	-0.00236	-0.00235

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	(A1 * A2 * B1 * !Y)	-0.00090	-0.00090	-0.00091
	(A1 * A2 * B1 * !Y)	0.00062	0.00062	0.00061
	(A1 * A2 * A3 * !B1 * !Y)	-0.00078	-0.00078	-0.00089
	(A1 * A2 * A3 * !B1 * !Y)	0.00071	0.00071	0.00063
	(A1 * !A2 * B1 * !Y)	-0.00090	-0.00090	-0.00091
	(A1 * !A2 * B1 * !Y)	0.00062	0.00062	0.00061
	(!A1 * B1 * !Y)	-0.00090	-0.00090	-0.00091
	(!A1 * B1 * !Y)	0.00062	0.00062	0.00061
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00099	-0.00100	-0.00104
	(A1 * A2 * B1 * !Y)	0.00123	0.00123	0.00119
	(A1 * A2 * A3 * !B1 * !Y)	-0.00071	-0.00073	-0.00098
	(A1 * A2 * A3 * !B1 * !Y)	0.00143	0.00142	0.00124
	(A1 * !A2 * B1 * !Y)	-0.00099	-0.00100	-0.00104
	(A1 * !A2 * B1 * !Y)	0.00124	0.00124	0.00120
	(!A1 * B1 * !Y)	-0.00099	-0.00100	-0.00104
	(!A1 * B1 * !Y)	0.00124	0.00124	0.00120
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00200	-0.00202	-0.00206
	(A1 * A2 * B1 * !Y)	0.00242	0.00242	0.00237
	(A1 * A2 * A3 * !B1 * !Y)	-0.00145	-0.00148	-0.00195
	(A1 * A2 * A3 * !B1 * !Y)	0.00281	0.00279	0.00245
	(A1 * !A2 * B1 * !Y)	-0.00200	-0.00201	-0.00206
	(A1 * !A2 * B1 * !Y)	0.00244	0.00244	0.00237
	(!A1 * B1 * !Y)	-0.00200	-0.00201	-0.00206
	(!A1 * B1 * !Y)	0.00244	0.00244	0.00237

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	C1	X
0	x	x	0	0	0
0	x	x	x	1	1
x	x	x	1	x	1
1	0	x	0	0	0
1	0	x	x	1	1
1	1	0	0	0	0
1	1	0	x	1	1
1	1	1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311o_1	12.78720
sky130_fd_sc_hs__a311o_2	14.38560
sky130_fd_sc_hs__a311o_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__a311o_1	0.00234	0.00219	0.00221	0.00232	0.00244	0.18933
sky130_fd_sc_hs__a311o_2	0.00243	0.00241	0.00256	0.00264	0.00252	0.35872
sky130_fd_sc_hs__a311o_4	0.00436	0.00403	0.00431	0.00424	0.00431	0.68812

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311o_1	0.00000	0.00009	0.00019
sky130_fd_sc_hs__a311o_2	0.00000	0.00013	0.00023
sky130_fd_sc_hs__a311o_4	0.00000	0.00026	0.00046

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (RR)	0.33201	1.74169	9.85493
	A2->X (RR)	0.34643	1.76562	10.09340
	A3->X (RR)	0.35365	1.74347	10.08130
	B1->X (RR)	0.24397	1.63853	9.79678
	C1->X (RR)	0.24137	1.62653	9.74964
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.34690	1.61713	10.09600
	A2->X (RR)	0.36127	1.62754	10.26360
	A3->X (RR)	0.36973	1.60059	10.21960
	B1->X (RR)	0.23322	1.48258	9.95025
	C1->X (RR)	0.23061	1.47252	9.91225
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.39341	1.54106	10.23470
	A2->X (RR)	0.41592	1.56563	10.46410
	A3->X (RR)	0.42297	1.51540	10.34820
	B1->X (RR)	0.23680	1.34669	10.00700
	C1->X (RR)	0.23262	1.33282	9.97496

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	1.45320	2.60594	8.80834
	A2->X (FF)	1.65077	2.81114	9.04106
	A3->X (FF)	1.81772	2.98601	9.23204
	B1->X (FF)	1.69707	2.81602	9.14423
	C1->X (FF)	1.54578	2.55512	8.43855
sky130_fd_sc_hs__a311o_2	A1->X (FF)	2.07736	3.28166	9.63877
	A2->X (FF)	2.33014	3.54970	9.91701
	A3->X (FF)	2.53796	3.76688	10.13860
	B1->X (FF)	2.43032	3.60598	10.07860
	C1->X (FF)	2.24717	3.31448	9.33437
sky130_fd_sc_hs__a311o_4	A1->X (FF)	1.95727	3.09463	9.43376
	A2->X (FF)	2.21361	3.35831	9.71341
	A3->X (FF)	2.41049	3.56995	9.93810
	B1->X (FF)	2.29194	3.40365	9.86838
	C1->X (FF)	2.05362	3.05154	9.07863

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.00523	0.00519	0.00510
	A1	0.00244	0.00241	0.00233
	A2	0.00549	0.00546	0.00539
	A2	0.00244	0.00241	0.00235
	A3	0.00587	0.00583	0.00576
	A3	0.00243	0.00240	0.00232
	B1	0.00518	0.00514	0.00507
	B1	0.00203	0.00199	0.00192
	C1	0.00474	0.00468	0.00460
	C1	0.00172	0.00166	0.00159
sky130_fd_sc_hs__a311o_2	A1	0.00700	0.00704	0.00699
	A1	0.00394	0.00398	0.00394
	A2	0.00740	0.00746	0.00743
	A2	0.00394	0.00399	0.00397
	A3	0.00792	0.00798	0.00793
	A3	0.00395	0.00400	0.00397
	B1	0.00725	0.00730	0.00725
	B1	0.00358	0.00364	0.00359
	C1	0.00667	0.00671	0.00666
	C1	0.00325	0.00328	0.00324

sky130_fd_sc_hs__a311o_4	**A1**	0.01340	0.01348	0.01348
	A1	0.00819	0.00829	0.00831
	A2	0.01403	0.01417	0.01423
	A2	0.00815	0.00830	0.00838
	A3	0.01493	0.01511	0.01515
	A3	0.00820	0.00838	0.00846
	B1	0.01335	0.01339	0.01330
	B1	0.00728	0.00730	0.00798
	C1	0.01190	0.01192	0.01186
	C1	0.00628	0.00631	0.00698

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00183	0.00184	0.00183
	A1	0.00470	0.00471	0.00469
	A2	0.00216	0.00218	0.00218
	A2	0.00527	0.00527	0.00526
	A3	0.00234	0.00235	0.00233
	A3	0.00578	0.00578	0.00575
	B1	0.00227	0.00229	0.00217
	B1	0.00536	0.00538	0.00535
	C1	0.00218	0.00217	0.00217
	C1	0.00511	0.00512	0.00508

sky130_fd_sc_hs__a311o_2	**A1**	0.00333	0.00343	0.00284
	A1	0.00647	0.00656	0.00662
	A2	0.00361	0.00371	0.00372
	A2	0.00711	0.00720	0.00727
	A3	0.00376	0.00384	0.00367
	A3	0.00772	0.00779	0.00780
	B1	0.00378	0.00386	0.00359
	B1	0.00736	0.00745	0.00746
	C1	0.00374	0.00383	0.00387
	C1	0.00707	0.00715	0.00716
sky130_fd_sc_hs__a311o_4	**A1**	0.00669	0.00691	0.00548
	A1	0.01208	0.01228	0.01249
	A2	0.00756	0.00777	0.00747
	A2	0.01352	0.01372	0.01394
	A3	0.00773	0.00798	0.00712
	A3	0.01445	0.01469	0.01484
	B1	0.00783	0.00806	0.00715
	B1	0.01378	0.01399	0.01411
	C1	0.00778	0.00801	0.00747
	C1	0.01322	0.01342	0.01346

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A2 * A3 * B1 * C1 * X)**	0.00076	0.00075	0.00075
	(A2 * A3 * B1 * C1 * X)	-0.00078	-0.00080	-0.00079
	(A2 * A3 * B1 * !C1 * X)	0.00076	0.00075	0.00075
	(A2 * A3 * B1 * !C1 * X)	-0.00078	-0.00080	-0.00079
	(A2 * A3 * !B1 * C1 * X)	0.00075	0.00075	0.00075
	(A2 * A3 * !B1 * C1 * X)	-0.00075	-0.00077	-0.00076
	(A2 * !A3 * B1 * C1 * X)	0.00068	0.00069	0.00069
	(A2 * !A3 * B1 * C1 * X)	-0.00082	-0.00083	-0.00082
	(A2 * !A3 * B1 * !C1 * X)	0.00068	0.00069	0.00068
	(A2 * !A3 * B1 * !C1 * X)	-0.00082	-0.00083	-0.00082
	(A2 * !A3 * !B1 * C1 * X)	0.00069	0.00069	0.00068
	(A2 * !A3 * !B1 * C1 * X)	-0.00083	-0.00083	-0.00082
	(A2 * !A3 * !B1 * !C1 * !X)	0.00036	0.00035	0.00033
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00094	-0.00095	-0.00098
	(!A2 * B1 * C1 * X)	0.00070	0.00071	0.00070
	(!A2 * B1 * C1 * X)	-0.00082	-0.00083	-0.00082
	(!A2 * B1 * !C1 * X)	0.00070	0.00071	0.00071
	(!A2 * B1 * !C1 * X)	-0.00083	-0.00083	-0.00082
	(!A2 * !B1 * C1 * X)	0.00070	0.00071	0.00070
	(!A2 * !B1 * C1 * X)	-0.00082	-0.00083	-0.00082
	(!A2 * !B1 * !C1 * !X)	0.00035	0.00035	0.00034
	(!A2 * !B1 * !C1 * !X)	-0.00097	-0.00098	-0.00099

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00080	0.00080	0.00079
	(A2 * A3 * B1 * C1 * X)	-0.00078	-0.00079	-0.00078
	(A2 * A3 * B1 * !C1 * X)	0.00080	0.00080	0.00079
	(A2 * A3 * B1 * !C1 * X)	-0.00078	-0.00079	-0.00078
	(A2 * A3 * !B1 * C1 * X)	0.00079	0.00079	0.00079
	(A2 * A3 * !B1 * C1 * X)	-0.00075	-0.00076	-0.00076
	(A2 * !A3 * B1 * C1 * X)	0.00072	0.00072	0.00072
	(A2 * !A3 * B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(A2 * !A3 * B1 * !C1 * X)	0.00072	0.00072	0.00072
	(A2 * !A3 * B1 * !C1 * X)	-0.00082	-0.00082	-0.00082
	(A2 * !A3 * !B1 * C1 * X)	0.00072	0.00072	0.00072
	(A2 * !A3 * !B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(A2 * !A3 * !B1 * !C1 * !X)	0.00031	0.00031	0.00029
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00097	-0.00098	-0.00102
	(!A2 * B1 * C1 * X)	0.00074	0.00075	0.00075
	(!A2 * B1 * C1 * X)	-0.00081	-0.00082	-0.00082
	(!A2 * B1 * !C1 * X)	0.00074	0.00075	0.00075
	(!A2 * B1 * !C1 * X)	-0.00082	-0.00082	-0.00082
	(!A2 * !B1 * C1 * X)	0.00075	0.00075	0.00074
	(!A2 * !B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(!A2 * !B1 * !C1 * !X)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !C1 * !X)	-0.00100	-0.00101	-0.00103

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00136	0.00136	0.00135
	(A2 * A3 * B1 * C1 * X)	-0.00163	-0.00165	-0.00164
	(A2 * A3 * B1 * !C1 * X)	0.00136	0.00136	0.00135
	(A2 * A3 * B1 * !C1 * X)	-0.00163	-0.00165	-0.00164
	(A2 * A3 * !B1 * C1 * X)	0.00135	0.00135	0.00135
	(A2 * A3 * !B1 * C1 * X)	-0.00157	-0.00159	-0.00158
	(A2 * !A3 * B1 * C1 * X)	0.00121	0.00122	0.00122
	(A2 * !A3 * B1 * C1 * X)	-0.00172	-0.00172	-0.00172
	(A2 * !A3 * B1 * !C1 * X)	0.00121	0.00121	0.00121
	(A2 * !A3 * B1 * !C1 * X)	-0.00173	-0.00172	-0.00172
	(A2 * !A3 * !B1 * C1 * X)	0.00121	0.00121	0.00121
	(A2 * !A3 * !B1 * C1 * X)	-0.00172	-0.00173	-0.00172
	(A2 * !A3 * !B1 * !C1 * !X)	0.00058	0.00059	0.00052
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00192	-0.00193	-0.00203
	(!A2 * B1 * C1 * X)	0.00127	0.00128	0.00127
	(!A2 * B1 * C1 * X)	-0.00172	-0.00173	-0.00172
	(!A2 * B1 * !C1 * X)	0.00127	0.00127	0.00127
	(!A2 * B1 * !C1 * X)	-0.00171	-0.00173	-0.00172
	(!A2 * !B1 * C1 * X)	0.00127	0.00128	0.00127
	(!A2 * !B1 * C1 * X)	-0.00173	-0.00173	-0.00172
	(!A2 * !B1 * !C1 * !X)	0.00061	0.00061	0.00057
	(!A2 * !B1 * !C1 * !X)	-0.00197	-0.00198	-0.00203

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A2 * A3 * B1 * C1 * X)**	-0.00075	-0.00075	-0.00075
	(A2 * A3 * B1 * C1 * X)	0.00079	0.00080	0.00079
	(A2 * A3 * B1 * !C1 * X)	-0.00075	-0.00075	-0.00075
	(A2 * A3 * B1 * !C1 * X)	0.00079	0.00080	0.00079
	(A2 * A3 * !B1 * C1 * X)	-0.00074	-0.00075	-0.00075
	(A2 * A3 * !B1 * C1 * X)	0.00076	0.00077	0.00076
	(A2 * !A3 * B1 * C1 * X)	-0.00067	-0.00069	-0.00069
	(A2 * !A3 * B1 * C1 * X)	0.00083	0.00084	0.00083
	(A2 * !A3 * B1 * !C1 * X)	-0.00067	-0.00069	-0.00068
	(A2 * !A3 * B1 * !C1 * X)	0.00083	0.00084	0.00083
	(A2 * !A3 * !B1 * C1 * X)	-0.00066	-0.00069	-0.00068
	(A2 * !A3 * !B1 * C1 * X)	0.00083	0.00084	0.00083
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(A2 * !A3 * !B1 * !C1 * !X)	0.00099	0.00100	0.00099
	(!A2 * B1 * C1 * X)	-0.00070	-0.00071	-0.00070
	(!A2 * B1 * C1 * X)	0.00083	0.00084	0.00083
	(!A2 * B1 * !C1 * X)	-0.00070	-0.00071	-0.00071
	(!A2 * B1 * !C1 * X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * C1 * X)	-0.00070	-0.00071	-0.00070
	(!A2 * !B1 * C1 * X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * !C1 * !X)	0.00099	0.00100	0.00099

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00080	-0.00080	-0.00079
	(A2 * A3 * B1 * C1 * X)	0.00079	0.00079	0.00078
	(A2 * A3 * B1 * !C1 * X)	-0.00080	-0.00080	-0.00079
	(A2 * A3 * B1 * !C1 * X)	0.00079	0.00079	0.00078
	(A2 * A3 * !B1 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A2 * A3 * !B1 * C1 * X)	0.00076	0.00076	0.00076
	(A2 * !A3 * B1 * C1 * X)	-0.00070	-0.00072	-0.00072
	(A2 * !A3 * B1 * C1 * X)	0.00082	0.00083	0.00082
	(A2 * !A3 * B1 * !C1 * X)	-0.00070	-0.00072	-0.00072
	(A2 * !A3 * B1 * !C1 * X)	0.00083	0.00083	0.00082
	(A2 * !A3 * !B1 * C1 * X)	-0.00069	-0.00072	-0.00072
	(A2 * !A3 * !B1 * C1 * X)	0.00082	0.00083	0.00082
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(A2 * !A3 * !B1 * !C1 * !X)	0.00104	0.00103	0.00102
	(!A2 * B1 * C1 * X)	-0.00074	-0.00075	-0.00075
	(!A2 * B1 * C1 * X)	0.00083	0.00083	0.00082
	(!A2 * B1 * !C1 * X)	-0.00074	-0.00075	-0.00075
	(!A2 * B1 * !C1 * X)	0.00083	0.00083	0.00082
	(!A2 * !B1 * C1 * X)	-0.00074	-0.00075	-0.00074
	(!A2 * !B1 * C1 * X)	0.00083	0.00083	0.00082
	(!A2 * !B1 * !C1 * !X)	-0.00030	-0.00030	-0.00029
	(!A2 * !B1 * !C1 * !X)	0.00104	0.00103	0.00103

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00135	-0.00136	-0.00135
	(A2 * A3 * B1 * C1 * X)	0.00163	0.00165	0.00164
	(A2 * A3 * B1 * !C1 * X)	-0.00135	-0.00136	-0.00135
	(A2 * A3 * B1 * !C1 * X)	0.00163	0.00165	0.00164
	(A2 * A3 * !B1 * C1 * X)	-0.00134	-0.00135	-0.00135
	(A2 * A3 * !B1 * C1 * X)	0.00157	0.00159	0.00158
	(A2 * !A3 * B1 * C1 * X)	-0.00118	-0.00122	-0.00122
	(A2 * !A3 * B1 * C1 * X)	0.00174	0.00174	0.00172
	(A2 * !A3 * B1 * !C1 * X)	-0.00116	-0.00121	-0.00121
	(A2 * !A3 * B1 * !C1 * X)	0.00173	0.00174	0.00172
	(A2 * !A3 * !B1 * C1 * X)	-0.00116	-0.00121	-0.00121
	(A2 * !A3 * !B1 * C1 * X)	0.00172	0.00174	0.00172
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00052	-0.00052	-0.00052
	(A2 * !A3 * !B1 * !C1 * !X)	0.00204	0.00205	0.00204
	(!A2 * B1 * C1 * X)	-0.00125	-0.00128	-0.00127
	(!A2 * B1 * C1 * X)	0.00172	0.00174	0.00172
	(!A2 * B1 * !C1 * X)	-0.00125	-0.00127	-0.00127
	(!A2 * B1 * !C1 * X)	0.00173	0.00174	0.00172
	(!A2 * !B1 * C1 * X)	-0.00125	-0.00128	-0.00127
	(!A2 * !B1 * C1 * X)	0.00174	0.00174	0.00172
	(!A2 * !B1 * !C1 * !X)	-0.00055	-0.00056	-0.00055
	(!A2 * !B1 * !C1 * !X)	0.00203	0.00205	0.00204

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A3 * B1 * C1 * X)**	0.00065	0.00065	0.00064
	(A1 * A3 * B1 * C1 * X)	-0.00080	-0.00082	-0.00081
	(A1 * A3 * B1 * !C1 * X)	0.00065	0.00065	0.00064
	(A1 * A3 * B1 * !C1 * X)	-0.00080	-0.00082	-0.00081
	(A1 * A3 * !B1 * C1 * X)	0.00064	0.00064	0.00064
	(A1 * A3 * !B1 * C1 * X)	-0.00077	-0.00078	-0.00078
	(A1 * !A3 * B1 * C1 * X)	0.00060	0.00060	0.00060
	(A1 * !A3 * B1 * C1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A3 * B1 * !C1 * X)	0.00060	0.00060	0.00060
	(A1 * !A3 * B1 * !C1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A3 * !B1 * C1 * X)	0.00060	0.00060	0.00060
	(A1 * !A3 * !B1 * C1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A3 * !B1 * !C1 * !X)	0.00030	0.00030	0.00030
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * A3 * B1 * X)	0.00060	0.00060	0.00060
	(!A1 * A3 * B1 * X)	-0.00085	-0.00085	-0.00085
	(!A1 * A3 * !B1 * C1 * X)	0.00060	0.00060	0.00060
	(!A1 * A3 * !B1 * C1 * X)	-0.00085	-0.00085	-0.00085
	(!A1 * A3 * !B1 * !C1 * !X)	0.00056	0.00056	0.00056
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * !A3 * B1 * X)	0.00039	0.00040	0.00039
	(!A1 * !A3 * B1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * !A3 * !B1 * C1 * X)	0.00039	0.00040	0.00039
	(!A1 * !A3 * !B1 * C1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00032	0.00033	0.00032
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00089	-0.00090	-0.00089

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00079	0.00079	0.00079
	(A1 * A3 * B1 * C1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A3 * B1 * !C1 * X)	0.00079	0.00079	0.00079
	(A1 * A3 * B1 * !C1 * X)	-0.00077	-0.00079	-0.00078
	(A1 * A3 * !B1 * C1 * X)	0.00079	0.00078	0.00078
	(A1 * A3 * !B1 * C1 * X)	-0.00075	-0.00076	-0.00076
	(A1 * !A3 * B1 * C1 * X)	0.00073	0.00073	0.00073
	(A1 * !A3 * B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * !A3 * B1 * !C1 * X)	0.00073	0.00073	0.00073
	(A1 * !A3 * B1 * !C1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * !A3 * !B1 * C1 * X)	0.00073	0.00073	0.00073
	(A1 * !A3 * !B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * !A3 * !B1 * !C1 * !X)	0.00037	0.00037	0.00037
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * A3 * B1 * X)	0.00073	0.00074	0.00074
	(!A1 * A3 * B1 * X)	-0.00081	-0.00082	-0.00082
	(!A1 * A3 * !B1 * C1 * X)	0.00074	0.00074	0.00074
	(!A1 * A3 * !B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * A3 * !B1 * !C1 * !X)	0.00068	0.00068	0.00068
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * !A3 * B1 * X)	0.00048	0.00049	0.00048
	(!A1 * !A3 * B1 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A3 * !B1 * C1 * X)	0.00048	0.00049	0.00048
	(!A1 * !A3 * !B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00088	-0.00088	-0.00088

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00130	0.00129	0.00129
	(A1 * A3 * B1 * C1 * X)	-0.00161	-0.00164	-0.00162
	(A1 * A3 * B1 * !C1 * X)	0.00130	0.00129	0.00129
	(A1 * A3 * B1 * !C1 * X)	-0.00161	-0.00164	-0.00162
	(A1 * A3 * !B1 * C1 * X)	0.00129	0.00129	0.00128
	(A1 * A3 * !B1 * C1 * X)	-0.00156	-0.00159	-0.00158
	(A1 * !A3 * B1 * C1 * X)	0.00120	0.00121	0.00120
	(A1 * !A3 * B1 * C1 * X)	-0.00168	-0.00169	-0.00169
	(A1 * !A3 * B1 * !C1 * X)	0.00120	0.00121	0.00120
	(A1 * !A3 * B1 * !C1 * X)	-0.00169	-0.00169	-0.00169
	(A1 * !A3 * !B1 * C1 * X)	0.00120	0.00121	0.00120
	(A1 * !A3 * !B1 * C1 * X)	-0.00169	-0.00169	-0.00169
	(A1 * !A3 * !B1 * !C1 * !X)	0.00068	0.00069	0.00069
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * A3 * B1 * X)	0.00120	0.00121	0.00121
	(!A1 * A3 * B1 * X)	-0.00168	-0.00169	-0.00169
	(!A1 * A3 * !B1 * C1 * X)	0.00121	0.00121	0.00121
	(!A1 * A3 * !B1 * C1 * X)	-0.00168	-0.00169	-0.00169
	(!A1 * A3 * !B1 * !C1 * !X)	0.00120	0.00122	0.00121
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00168	-0.00170	-0.00169
	(!A1 * !A3 * B1 * X)	0.00082	0.00083	0.00082
	(!A1 * !A3 * B1 * X)	-0.00168	-0.00170	-0.00169
	(!A1 * !A3 * !B1 * C1 * X)	0.00082	0.00082	0.00082
	(!A1 * !A3 * !B1 * C1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00074	0.00074	0.00074
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00170	-0.00171	-0.00170

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A3 * B1 * C1 * X)**	-0.00064	-0.00065	-0.00064
	(A1 * A3 * B1 * C1 * X)	0.00082	0.00082	0.00081
	(A1 * A3 * B1 * !C1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A3 * B1 * !C1 * X)	0.00082	0.00082	0.00081
	(A1 * A3 * !B1 * C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * A3 * !B1 * C1 * X)	0.00079	0.00078	0.00078
	(A1 * !A3 * B1 * C1 * X)	-0.00059	-0.00060	-0.00060
	(A1 * !A3 * B1 * C1 * X)	0.00086	0.00086	0.00085
	(A1 * !A3 * B1 * !C1 * X)	-0.00059	-0.00060	-0.00060
	(A1 * !A3 * B1 * !C1 * X)	0.00086	0.00086	0.00085
	(A1 * !A3 * !B1 * C1 * X)	-0.00059	-0.00060	-0.00060
	(A1 * !A3 * !B1 * C1 * X)	0.00086	0.00086	0.00085
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(A1 * !A3 * !B1 * !C1 * !X)	0.00092	0.00092	0.00090
	(!A1 * A3 * B1 * X)	-0.00059	-0.00060	-0.00060
	(!A1 * A3 * B1 * X)	0.00085	0.00086	0.00085
	(!A1 * A3 * !B1 * C1 * X)	-0.00059	-0.00060	-0.00060
	(!A1 * A3 * !B1 * C1 * X)	0.00085	0.00086	0.00085
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00055	-0.00056	-0.00056
	(!A1 * A3 * !B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !A3 * B1 * X)	-0.00039	-0.00040	-0.00039
	(!A1 * !A3 * B1 * X)	0.00086	0.00086	0.00085
	(!A1 * !A3 * !B1 * C1 * X)	-0.00039	-0.00040	-0.00039
	(!A1 * !A3 * !B1 * C1 * X)	0.00086	0.00086	0.00085
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00032	-0.00033	-0.00032
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00091	0.00090	0.00090

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00079	-0.00079	-0.00079
	(A1 * A3 * B1 * C1 * X)	0.00079	0.00079	0.00078
	(A1 * A3 * B1 * !C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A3 * B1 * !C1 * X)	0.00079	0.00079	0.00078
	(A1 * A3 * !B1 * C1 * X)	-0.00079	-0.00078	-0.00078
	(A1 * A3 * !B1 * C1 * X)	0.00076	0.00076	0.00076
	(A1 * !A3 * B1 * C1 * X)	-0.00072	-0.00073	-0.00073
	(A1 * !A3 * B1 * C1 * X)	0.00082	0.00083	0.00082
	(A1 * !A3 * B1 * !C1 * X)	-0.00071	-0.00073	-0.00073
	(A1 * !A3 * B1 * !C1 * X)	0.00082	0.00083	0.00082
	(A1 * !A3 * !B1 * C1 * X)	-0.00071	-0.00073	-0.00073
	(A1 * !A3 * !B1 * C1 * X)	0.00082	0.00083	0.00082
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00035	-0.00035	-0.00036
	(A1 * !A3 * !B1 * !C1 * !X)	0.00091	0.00090	0.00088
	(!A1 * A3 * B1 * X)	-0.00073	-0.00074	-0.00074
	(!A1 * A3 * B1 * X)	0.00082	0.00083	0.00082
	(!A1 * A3 * !B1 * C1 * X)	-0.00073	-0.00074	-0.00074
	(!A1 * A3 * !B1 * C1 * X)	0.00082	0.00083	0.00082
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00067	-0.00068	-0.00068
	(!A1 * A3 * !B1 * !C1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A3 * B1 * X)	-0.00048	-0.00049	-0.00048
	(!A1 * !A3 * B1 * X)	0.00083	0.00082	0.00082
	(!A1 * !A3 * !B1 * C1 * X)	-0.00048	-0.00049	-0.00048
	(!A1 * !A3 * !B1 * C1 * X)	0.00083	0.00082	0.00082
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00088	0.00089	0.00088

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00129	-0.00129	-0.00129
	(A1 * A3 * B1 * C1 * X)	0.00162	0.00164	0.00162
	(A1 * A3 * B1 * !C1 * X)	-0.00129	-0.00129	-0.00129
	(A1 * A3 * B1 * !C1 * X)	0.00162	0.00164	0.00162
	(A1 * A3 * !B1 * C1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * A3 * !B1 * C1 * X)	0.00158	0.00159	0.00158
	(A1 * !A3 * B1 * C1 * X)	-0.00118	-0.00121	-0.00120
	(A1 * !A3 * B1 * C1 * X)	0.00168	0.00169	0.00169
	(A1 * !A3 * B1 * !C1 * X)	-0.00118	-0.00121	-0.00120
	(A1 * !A3 * B1 * !C1 * X)	0.00171	0.00169	0.00169
	(A1 * !A3 * !B1 * C1 * X)	-0.00118	-0.00121	-0.00120
	(A1 * !A3 * !B1 * C1 * X)	0.00170	0.00169	0.00169
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00064	-0.00065	-0.00067
	(A1 * !A3 * !B1 * !C1 * !X)	0.00173	0.00175	0.00170
	(!A1 * A3 * B1 * X)	-0.00118	-0.00121	-0.00121
	(!A1 * A3 * B1 * X)	0.00168	0.00171	0.00169
	(!A1 * A3 * !B1 * C1 * X)	-0.00118	-0.00121	-0.00121
	(!A1 * A3 * !B1 * C1 * X)	0.00168	0.00171	0.00169
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00118	-0.00122	-0.00121
	(!A1 * A3 * !B1 * !C1 * !X)	0.00168	0.00171	0.00169
	(!A1 * !A3 * B1 * X)	-0.00082	-0.00083	-0.00082
	(!A1 * !A3 * B1 * X)	0.00169	0.00170	0.00169
	(!A1 * !A3 * !B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A3 * !B1 * C1 * X)	0.00169	0.00170	0.00169
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00171	0.00171	0.00170

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A2 * B1 * C1 * X)**	0.00072	0.00072	0.00071
	(A1 * A2 * B1 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * A2 * B1 * !C1 * X)	0.00072	0.00072	0.00071
	(A1 * A2 * B1 * !C1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * A2 * !B1 * C1 * X)	0.00071	0.00071	0.00071
	(A1 * A2 * !B1 * C1 * X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !C1 * !X)	0.00057	0.00058	0.00057
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00093	-0.00094	-0.00093
	(!A2 * B1 * X)	0.00067	0.00067	0.00067
	(!A2 * B1 * X)	-0.00083	-0.00083	-0.00083
	(!A2 * !B1 * C1 * X)	0.00068	0.00068	0.00067
	(!A2 * !B1 * C1 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * A2 * B1 * X)	0.00065	0.00066	0.00065
	(!A1 * A2 * B1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * A2 * !B1 * C1 * X)	0.00065	0.00066	0.00065
	(!A1 * A2 * !B1 * C1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * A2 * !B1 * !C1 * !X)	0.00055	0.00056	0.00055
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00093	-0.00093	-0.00093
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00057	0.00058	0.00057
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00093	-0.00094	-0.00093

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00092	0.00091	0.00091
	(A1 * A2 * B1 * C1 * X)	-0.00077	-0.00079	-0.00078
	(A1 * A2 * B1 * !C1 * X)	0.00092	0.00091	0.00091
	(A1 * A2 * B1 * !C1 * X)	-0.00077	-0.00079	-0.00078
	(A1 * A2 * !B1 * C1 * X)	0.00091	0.00090	0.00090
	(A1 * A2 * !B1 * C1 * X)	-0.00074	-0.00076	-0.00075
	(A1 * !A2 * !B1 * !C1 * !X)	0.00069	0.00068	0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00098	-0.00098
	(!A2 * B1 * X)	0.00085	0.00085	0.00085
	(!A2 * B1 * X)	-0.00081	-0.00081	-0.00081
	(!A2 * !B1 * C1 * X)	0.00085	0.00085	0.00085
	(!A2 * !B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * B1 * X)	0.00084	0.00084	0.00083
	(!A1 * A2 * B1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * !B1 * C1 * X)	0.00084	0.00084	0.00083
	(!A1 * A2 * !B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * !B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00098	-0.00098	-0.00098
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00069	0.00069	0.00068
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00098	-0.00098	-0.00098

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00151	0.00150	0.00149
	(A1 * A2 * B1 * C1 * X)	-0.00156	-0.00158	-0.00157
	(A1 * A2 * B1 * !C1 * X)	0.00151	0.00150	0.00149
	(A1 * A2 * B1 * !C1 * X)	-0.00156	-0.00158	-0.00157
	(A1 * A2 * !B1 * C1 * X)	0.00149	0.00149	0.00149
	(A1 * A2 * !B1 * C1 * X)	-0.00150	-0.00153	-0.00152
	(A1 * !A2 * !B1 * !C1 * !X)	0.00123	0.00123	0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00181	-0.00181	-0.00181
	(!A2 * B1 * X)	0.00140	0.00141	0.00141
	(!A2 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A2 * !B1 * C1 * X)	0.00141	0.00142	0.00141
	(!A2 * !B1 * C1 * X)	-0.00164	-0.00164	-0.00163
	(!A1 * A2 * B1 * X)	0.00138	0.00138	0.00138
	(!A1 * A2 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * A2 * !B1 * C1 * X)	0.00138	0.00138	0.00138
	(!A1 * A2 * !B1 * C1 * X)	-0.00164	-0.00164	-0.00163
	(!A1 * A2 * !B1 * !C1 * !X)	0.00120	0.00120	0.00121
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00180	-0.00180	-0.00181
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00123	0.00124	0.00123
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00181	-0.00182	-0.00181

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A2 * B1 * C1 * X)**	-0.00071	-0.00071	-0.00071
	(A1 * A2 * B1 * C1 * X)	0.00080	0.00080	0.00080
	(A1 * A2 * B1 * !C1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * A2 * B1 * !C1 * X)	0.00080	0.00080	0.00080
	(A1 * A2 * !B1 * C1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * A2 * !B1 * C1 * X)	0.00077	0.00077	0.00077
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00056	-0.00058	-0.00057
	(A1 * !A2 * !B1 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A2 * B1 * X)	-0.00066	-0.00067	-0.00067
	(!A2 * B1 * X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * C1 * X)	-0.00066	-0.00068	-0.00067
	(!A2 * !B1 * C1 * X)	0.00083	0.00084	0.00083
	(!A1 * A2 * B1 * X)	-0.00064	-0.00066	-0.00065
	(!A1 * A2 * B1 * X)	0.00084	0.00084	0.00083
	(!A1 * A2 * !B1 * C1 * X)	-0.00064	-0.00066	-0.00065
	(!A1 * A2 * !B1 * C1 * X)	0.00084	0.00084	0.00083
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00054	-0.00056	-0.00055
	(!A1 * A2 * !B1 * !C1 * !X)	0.00094	0.00094	0.00093
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00056	-0.00058	-0.00057
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00093	0.00094	0.00093

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00091	-0.00091	-0.00091
	(A1 * A2 * B1 * C1 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * B1 * !C1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * B1 * !C1 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !B1 * C1 * X)	-0.00091	-0.00090	-0.00090
	(A1 * A2 * !B1 * C1 * X)	0.00075	0.00076	0.00075
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00067	-0.00068	-0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A2 * B1 * X)	-0.00084	-0.00085	-0.00085
	(!A2 * B1 * X)	0.00081	0.00082	0.00081
	(!A2 * !B1 * C1 * X)	-0.00084	-0.00085	-0.00085
	(!A2 * !B1 * C1 * X)	0.00081	0.00082	0.00081
	(!A1 * A2 * B1 * X)	-0.00082	-0.00084	-0.00083
	(!A1 * A2 * B1 * X)	0.00082	0.00082	0.00081
	(!A1 * A2 * !B1 * C1 * X)	-0.00082	-0.00084	-0.00083
	(!A1 * A2 * !B1 * C1 * X)	0.00082	0.00082	0.00081
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00065	-0.00067	-0.00067
	(!A1 * A2 * !B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00067	-0.00069	-0.00068
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00098	0.00099	0.00098

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00149	-0.00150	-0.00149
	(A1 * A2 * B1 * C1 * X)	0.00158	0.00158	0.00157
	(A1 * A2 * B1 * !C1 * X)	-0.00149	-0.00150	-0.00149
	(A1 * A2 * B1 * !C1 * X)	0.00158	0.00158	0.00157
	(A1 * A2 * !B1 * C1 * X)	-0.00149	-0.00149	-0.00149
	(A1 * A2 * !B1 * C1 * X)	0.00153	0.00153	0.00152
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00121	-0.00123	-0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	0.00182	0.00182	0.00181
	(!A2 * B1 * X)	-0.00139	-0.00141	-0.00141
	(!A2 * B1 * X)	0.00164	0.00165	0.00164
	(!A2 * !B1 * C1 * X)	-0.00139	-0.00142	-0.00141
	(!A2 * !B1 * C1 * X)	0.00164	0.00165	0.00164
	(!A1 * A2 * B1 * X)	-0.00135	-0.00138	-0.00138
	(!A1 * A2 * B1 * X)	0.00164	0.00165	0.00164
	(!A1 * A2 * !B1 * C1 * X)	-0.00135	-0.00138	-0.00138
	(!A1 * A2 * !B1 * C1 * X)	0.00164	0.00165	0.00164
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00117	-0.00120	-0.00121
	(!A1 * A2 * !B1 * !C1 * !X)	0.00181	0.00182	0.00181
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00121	-0.00124	-0.00123
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00182	0.00182	0.00181

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a311o_1	**(A1 * A2 * A3 * C1 * X)**	0.00073	0.00073	0.00073
	(A1 * A2 * A3 * C1 * X)	-0.00064	-0.00064	-0.00063
	(A1 * A2 * A3 * !C1 * X)	0.00073	0.00074	0.00073
	(A1 * A2 * A3 * !C1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * A2 * !A3 * C1 * X)	0.00073	0.00073	0.00073
	(A1 * A2 * !A3 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * C1 * X)	0.00073	0.00073	0.00073
	(A1 * !A2 * C1 * X)	-0.00078	-0.00079	-0.00079
	(!A1 * C1 * X)	0.00073	0.00073	0.00073
	(!A1 * C1 * X)	-0.00079	-0.00079	-0.00079
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00086	0.00088	0.00087
	(A1 * A2 * A3 * C1 * X)	-0.00064	-0.00063	-0.00063
	(A1 * A2 * A3 * !C1 * X)	0.00088	0.00087	0.00086
	(A1 * A2 * A3 * !C1 * X)	-0.00060	-0.00059	-0.00059
	(A1 * A2 * !A3 * C1 * X)	0.00086	0.00085	0.00086
	(A1 * A2 * !A3 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * C1 * X)	0.00086	0.00085	0.00086
	(A1 * !A2 * C1 * X)	-0.00079	-0.00079	-0.00079
	(!A1 * C1 * X)	0.00086	0.00085	0.00086
	(!A1 * C1 * X)	-0.00079	-0.00079	-0.00079
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00135	0.00137	0.00135
	(A1 * A2 * A3 * C1 * X)	-0.00136	-0.00135	-0.00134
	(A1 * A2 * A3 * !C1 * X)	0.00135	0.00135	0.00134
	(A1 * A2 * A3 * !C1 * X)	-0.00126	-0.00127	-0.00126
	(A1 * A2 * !A3 * C1 * X)	0.00134	0.00136	0.00134
	(A1 * A2 * !A3 * C1 * X)	-0.00164	-0.00166	-0.00165
	(A1 * !A2 * C1 * X)	0.00134	0.00136	0.00134
	(A1 * !A2 * C1 * X)	-0.00164	-0.00166	-0.00165
	(!A1 * C1 * X)	0.00134	0.00136	0.00134
	(!A1 * C1 * X)	-0.00164	-0.00166	-0.00165

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	(A1 * A2 * A3 * C1 * X)	-0.00073	-0.00073	-0.00073
	(A1 * A2 * A3 * C1 * X)	0.00064	0.00064	0.00063
	(A1 * A2 * A3 * !C1 * X)	-0.00071	-0.00072	-0.00071
	(A1 * A2 * A3 * !C1 * X)	0.00062	0.00061	0.00061
	(A1 * A2 * !A3 * C1 * X)	-0.00073	-0.00073	-0.00072
	(A1 * A2 * !A3 * C1 * X)	0.00079	0.00079	0.00079
	(A1 * !A2 * C1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * !A2 * C1 * X)	0.00078	0.00079	0.00079
	(!A1 * C1 * X)	-0.00072	-0.00073	-0.00072
	(!A1 * C1 * X)	0.00079	0.00079	0.00079
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * A3 * C1 * X)	0.00064	0.00063	0.00063
	(A1 * A2 * A3 * !C1 * X)	-0.00084	-0.00085	-0.00085
	(A1 * A2 * A3 * !C1 * X)	0.00061	0.00061	0.00061
	(A1 * A2 * !A3 * C1 * X)	-0.00086	-0.00085	-0.00085
	(A1 * A2 * !A3 * C1 * X)	0.00079	0.00079	0.00079
	(A1 * !A2 * C1 * X)	-0.00086	-0.00085	-0.00085
	(A1 * !A2 * C1 * X)	0.00079	0.00079	0.00079
	(!A1 * C1 * X)	-0.00086	-0.00085	-0.00085
	(!A1 * C1 * X)	0.00079	0.00079	0.00079

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00135	-0.00135	-0.00134
	(A1 * A2 * A3 * C1 * X)	0.00136	0.00135	0.00134
	(A1 * A2 * A3 * !C1 * X)	-0.00131	-0.00132	-0.00130
	(A1 * A2 * A3 * !C1 * X)	0.00130	0.00131	0.00131
	(A1 * A2 * !A3 * C1 * X)	-0.00134	-0.00134	-0.00134
	(A1 * A2 * !A3 * C1 * X)	0.00166	0.00166	0.00165
	(A1 * !A2 * C1 * X)	-0.00134	-0.00134	-0.00134
	(A1 * !A2 * C1 * X)	0.00166	0.00166	0.00165
	(!A1 * C1 * X)	-0.00134	-0.00134	-0.00134
	(!A1 * C1 * X)	0.00166	0.00166	0.00165

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	(A1 * A2 * B1 * X)	0.00091	0.00091	0.00090
	(A1 * A2 * B1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * A2 * A3 * !B1 * X)	0.00091	0.00091	0.00090
	(A1 * A2 * A3 * !B1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * B1 * X)	0.00091	0.00091	0.00090
	(A1 * !A2 * B1 * X)	-0.00054	-0.00054	-0.00054
	(!A1 * B1 * X)	0.00091	0.00091	0.00090
	(!A1 * B1 * X)	-0.00054	-0.00054	-0.00054
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00089	0.00090	0.00089
	(A1 * A2 * B1 * X)	-0.00057	-0.00057	-0.00057
	(A1 * A2 * A3 * !B1 * X)	0.00088	0.00090	0.00089
	(A1 * A2 * A3 * !B1 * X)	-0.00056	-0.00057	-0.00057
	(A1 * !A2 * B1 * X)	0.00089	0.00090	0.00089
	(A1 * !A2 * B1 * X)	-0.00057	-0.00057	-0.00057
	(!A1 * B1 * X)	0.00089	0.00090	0.00089
	(!A1 * B1 * X)	-0.00057	-0.00057	-0.00057
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00145	0.00146	0.00145
	(A1 * A2 * B1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * A2 * A3 * !B1 * X)	0.00145	0.00146	0.00145
	(A1 * A2 * A3 * !B1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * !A2 * B1 * X)	0.00145	0.00146	0.00145
	(A1 * !A2 * B1 * X)	-0.00120	-0.00120	-0.00120
	(!A1 * B1 * X)	0.00145	0.00146	0.00145
	(!A1 * B1 * X)	-0.00120	-0.00120	-0.00120

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	(A1 * A2 * B1 * X)	-0.00089	-0.00090	-0.00090
	(A1 * A2 * B1 * X)	0.00055	0.00055	0.00054
	(A1 * A2 * A3 * !B1 * X)	-0.00078	-0.00079	-0.00088
	(A1 * A2 * A3 * !B1 * X)	0.00063	0.00063	0.00056
	(A1 * !A2 * B1 * X)	-0.00089	-0.00090	-0.00090
	(A1 * !A2 * B1 * X)	0.00056	0.00055	0.00054
	(!A1 * B1 * X)	-0.00089	-0.00090	-0.00090
	(!A1 * B1 * X)	0.00056	0.00055	0.00054
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00088	-0.00088	-0.00089
	(A1 * A2 * B1 * X)	0.00058	0.00058	0.00057
	(A1 * A2 * A3 * !B1 * X)	-0.00077	-0.00078	-0.00087
	(A1 * A2 * A3 * !B1 * X)	0.00066	0.00066	0.00059
	(A1 * !A2 * B1 * X)	-0.00088	-0.00088	-0.00089
	(A1 * !A2 * B1 * X)	0.00058	0.00058	0.00057
	(!A1 * B1 * X)	-0.00088	-0.00088	-0.00089
	(!A1 * B1 * X)	0.00058	0.00058	0.00057
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00139	-0.00141	-0.00145
	(A1 * A2 * B1 * X)	0.00125	0.00125	0.00121
	(A1 * A2 * A3 * !B1 * X)	-0.00116	-0.00118	-0.00140
	(A1 * A2 * A3 * !B1 * X)	0.00142	0.00142	0.00125
	(A1 * !A2 * B1 * X)	-0.00139	-0.00140	-0.00145
	(A1 * !A2 * B1 * X)	0.00126	0.00126	0.00121
	(!A1 * B1 * X)	-0.00139	-0.00140	-0.00145
	(!A1 * B1 * X)	0.00126	0.00126	0.00121

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	A3	B1	Y
0	x	x	0	1
x	x	x	1	0
1	0	x	0	1
1	1	0	0	1
1	1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31oi_1	9.59040
sky130_fd_sc_hs__a31oi_2	14.38560
sky130_fd_sc_hs__a31oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__a31oi_1	0.00255	0.00260	0.00249	0.00263	0.07452
sky130_fd_sc_hs__a31oi_2	0.00484	0.00461	0.00494	0.00389	0.14926
sky130_fd_sc_hs__a31oi_4	0.00984	0.00907	0.00902	0.00787	0.27866

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.00006	0.00011
sky130_fd_sc_hs__a31oi_2	0.00000	0.00010	0.00019
sky130_fd_sc_hs__a31oi_4	0.00000	0.00021	0.00038

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (FR)	0.56472	2.66200	14.09850
	A2->Y (FR)	0.70863	2.82579	14.33360
	A3->Y (FR)	0.78987	2.91440	14.39960
	B1->Y (FR)	0.66507	2.68704	13.76820
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.48052	2.34527	14.25490
	A2->Y (FR)	0.59239	2.46191	14.32650
	A3->Y (FR)	0.69735	2.56609	14.39180
	B1->Y (FR)	0.53460	2.30601	13.72080
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.45097	2.10319	14.09030
	A2->Y (FR)	0.57925	2.22713	14.16760
	A3->Y (FR)	0.69907	2.37170	14.38170
	B1->Y (FR)	0.54199	2.11835	13.74350

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.09579	0.86279	5.13058
	A2->Y (RF)	0.11162	0.86963	5.13445
	A3->Y (RF)	0.11555	0.82827	4.82697
	B1->Y (RF)	0.06264	0.68518	4.26309
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.08660	0.82792	5.34602
	A2->Y (RF)	0.09877	0.80901	5.16009
	A3->Y (RF)	0.10641	0.78224	4.87526
	B1->Y (RF)	0.06965	0.77972	5.22615
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.08662	0.79380	5.44951
	A2->Y (RF)	0.10338	0.78571	5.26289
	A3->Y (RF)	0.11084	0.74916	4.87579
	B1->Y (RF)	0.06633	0.71470	5.08749

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00008	0.00001	0.00000
	A1	0.00280	0.00272	0.00272
	A2	0.00041	0.00032	0.00031
	A2	0.00356	0.00347	0.00345
	A3	0.00055	0.00049	0.00047
	A3	0.00412	0.00405	0.00403
	B1	0.00053	0.00045	0.00044
	B1	0.00369	0.00362	0.00359
sky130_fd_sc_hs__a31oi_2	A1	0.00017	0.00006	0.00006
	A1	0.00521	0.00508	0.00508
	A2	0.00077	0.00065	0.00063
	A2	0.00652	0.00637	0.00608
	A3	0.00124	0.00113	0.00111
	A3	0.00786	0.00773	0.00770
	B1	0.00182	0.00171	0.00169
	B1	0.00682	0.00668	0.00667
sky130_fd_sc_hs__a31oi_4	A1	-0.00055	-0.00073	-0.00073
	A1	0.00982	0.00960	0.00962
	A2	0.00099	0.00068	0.00066
	A2	0.01283	0.01248	0.01248
	A3	0.00218	0.00195	0.00190
	A3	0.01557	0.01530	0.01524
	B1	0.00313	0.00292	0.00288
	B1	0.01359	0.01334	0.01327

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00320	0.00314	0.00309
	A1	0.00055	0.00050	0.00044
	A2	0.00367	0.00362	0.00355
	A2	0.00055	0.00050	0.00044
	A3	0.00409	0.00405	0.00398
	A3	0.00051	0.00046	0.00040
	B1	0.00326	0.00325	0.00323
	B1	0.00001	-0.00000	-0.00002
sky130_fd_sc_hs__a31oi_2	A1	0.00552	0.00540	0.00530
	A1	0.00066	0.00053	0.00042
	A2	0.00633	0.00622	0.00609
	A2	0.00066	0.00055	0.00043
	A3	0.00730	0.00721	0.00706
	A3	0.00066	0.00055	0.00043
	B1	0.00449	0.00448	0.00447
	B1	-0.00068	-0.00072	-0.00072
sky130_fd_sc_hs__a31oi_4	A1	0.01128	0.01100	0.01080
	A1	0.00125	0.00093	0.00075
	A2	0.01290	0.01270	0.01248
	A2	0.00123	0.00097	0.00077
	A3	0.01466	0.01443	0.01418
	A3	0.00119	0.00096	0.00074
	B1	0.00941	0.00933	0.00939
	B1	-0.00139	-0.00149	-0.00144

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a31oi_1	**(A2 * A3 * B1 * !Y)**	0.00080	0.00079	0.00079
	(A2 * A3 * B1 * !Y)	-0.00085	-0.00087	-0.00086
	(A2 * !A3 * B1 * !Y)	0.00071	0.00072	0.00071
	(A2 * !A3 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * !A3 * !B1 * Y)	0.00032	0.00031	0.00029
	(A2 * !A3 * !B1 * Y)	-0.00105	-0.00104	-0.00109
	(!A2 * B1 * !Y)	0.00074	0.00074	0.00074
	(!A2 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A2 * !B1 * Y)	0.00032	0.00032	0.00030
	(!A2 * !B1 * Y)	-0.00108	-0.00108	-0.00110
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00160	0.00159	0.00158
	(A2 * A3 * B1 * !Y)	-0.00176	-0.00179	-0.00176
	(A2 * !A3 * B1 * !Y)	0.00143	0.00144	0.00143
	(A2 * !A3 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(A2 * !A3 * !B1 * Y)	0.00062	0.00062	0.00057
	(A2 * !A3 * !B1 * Y)	-0.00215	-0.00216	-0.00226
	(!A2 * B1 * !Y)	0.00147	0.00149	0.00147
	(!A2 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * Y)	0.00060	0.00059	0.00057
	(!A2 * !B1 * Y)	-0.00223	-0.00223	-0.00228
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00330	0.00331	0.00328
	(A2 * A3 * B1 * !Y)	-0.00345	-0.00352	-0.00347
	(A2 * !A3 * B1 * !Y)	0.00297	0.00298	0.00296
	(A2 * !A3 * B1 * !Y)	-0.00363	-0.00364	-0.00362
	(A2 * !A3 * !B1 * Y)	0.00131	0.00130	0.00118
	(A2 * !A3 * !B1 * Y)	-0.00428	-0.00431	-0.00452
	(!A2 * B1 * !Y)	0.00310	0.00312	0.00309
	(!A2 * B1 * !Y)	-0.00363	-0.00364	-0.00362
	(!A2 * !B1 * Y)	0.00130	0.00130	0.00124
	(!A2 * !B1 * Y)	-0.00445	-0.00447	-0.00455

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	(A2 * A3 * B1 * !Y)	-0.00079	-0.00079	-0.00079
	(A2 * A3 * B1 * !Y)	0.00087	0.00087	0.00086
	(A2 * !A3 * B1 * !Y)	-0.00069	-0.00072	-0.00071
	(A2 * !A3 * B1 * !Y)	0.00091	0.00091	0.00090
	(A2 * !A3 * !B1 * Y)	-0.00029	-0.00029	-0.00029
	(A2 * !A3 * !B1 * Y)	0.00111	0.00110	0.00110
	(!A2 * B1 * !Y)	-0.00073	-0.00074	-0.00074
	(!A2 * B1 * !Y)	0.00091	0.00091	0.00090
	(!A2 * !B1 * Y)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * Y)	0.00111	0.00110	0.00110
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00158	-0.00159	-0.00158
	(A2 * A3 * B1 * !Y)	0.00177	0.00179	0.00176
	(A2 * !A3 * B1 * !Y)	-0.00137	-0.00144	-0.00143
	(A2 * !A3 * B1 * !Y)	0.00185	0.00185	0.00185
	(A2 * !A3 * !B1 * Y)	-0.00055	-0.00055	-0.00054
	(A2 * !A3 * !B1 * Y)	0.00227	0.00230	0.00227
	(!A2 * B1 * !Y)	-0.00144	-0.00149	-0.00147
	(!A2 * B1 * !Y)	0.00184	0.00185	0.00184
	(!A2 * !B1 * Y)	-0.00056	-0.00056	-0.00056
	(!A2 * !B1 * Y)	0.00227	0.00230	0.00228

sky130_fd_sc_hs__a31oi_4	(A2 * A3 * B1 * !Y)	-0.00329	-0.00331	-0.00328
	(A2 * A3 * B1 * !Y)	0.00348	0.00352	0.00347
	(A2 * !A3 * B1 * !Y)	-0.00284	-0.00298	-0.00296
	(A2 * !A3 * B1 * !Y)	0.00365	0.00365	0.00363
	(A2 * !A3 * !B1 * Y)	-0.00118	-0.00118	-0.00117
	(A2 * !A3 * !B1 * Y)	0.00457	0.00460	0.00455
	(!A2 * B1 * !Y)	-0.00303	-0.00312	-0.00309
	(!A2 * B1 * !Y)	0.00363	0.00366	0.00363
	(!A2 * !B1 * Y)	-0.00121	-0.00122	-0.00121
	(!A2 * !B1 * Y)	0.00456	0.00460	0.00455

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	(A1 * A3 * B1 * !Y)	0.00085	0.00085	0.00084
	(A1 * A3 * B1 * !Y)	-0.00085	-0.00087	-0.00086
	(A1 * !A3 * B1 * !Y)	0.00079	0.00079	0.00079
	(A1 * !A3 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * !B1 * Y)	0.00037	0.00037	0.00037
	(A1 * !A3 * !B1 * Y)	-0.00100	-0.00102	-0.00101
	(!A1 * A3 * B1 * !Y)	0.00079	0.00080	0.00079
	(!A1 * A3 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * A3 * !B1 * Y)	0.00069	0.00069	0.00068
	(!A1 * A3 * !B1 * Y)	-0.00101	-0.00101	-0.00101
	(!A1 * !A3 * B1 * !Y)	0.00054	0.00055	0.00054
	(!A1 * !A3 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A3 * !B1 * Y)	0.00039	0.00040	0.00040
	(!A1 * !A3 * !B1 * Y)	-0.00101	-0.00102	-0.00101

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00147	0.00147	0.00146
	(A1 * A3 * B1 * !Y)	-0.00176	-0.00179	-0.00177
	(A1 * !A3 * B1 * !Y)	0.00135	0.00136	0.00135
	(A1 * !A3 * B1 * !Y)	-0.00185	-0.00186	-0.00185
	(A1 * !A3 * !B1 * Y)	0.00073	0.00073	0.00073
	(A1 * !A3 * !B1 * Y)	-0.00186	-0.00187	-0.00186
	(!A1 * A3 * B1 * !Y)	0.00134	0.00136	0.00135
	(!A1 * A3 * B1 * !Y)	-0.00184	-0.00186	-0.00185
	(!A1 * A3 * !B1 * Y)	0.00134	0.00135	0.00134
	(!A1 * A3 * !B1 * Y)	-0.00186	-0.00187	-0.00186
	(!A1 * !A3 * B1 * !Y)	0.00086	0.00087	0.00086
	(!A1 * !A3 * B1 * !Y)	-0.00184	-0.00186	-0.00185
	(!A1 * !A3 * !B1 * Y)	0.00077	0.00078	0.00077
	(!A1 * !A3 * !B1 * Y)	-0.00187	-0.00188	-0.00187
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00313	0.00312	0.00311
	(A1 * A3 * B1 * !Y)	-0.00353	-0.00360	-0.00355
	(A1 * !A3 * B1 * !Y)	0.00283	0.00285	0.00284
	(A1 * !A3 * B1 * !Y)	-0.00372	-0.00373	-0.00372
	(A1 * !A3 * !B1 * Y)	0.00158	0.00159	0.00159
	(A1 * !A3 * !B1 * Y)	-0.00376	-0.00378	-0.00376
	(!A1 * A3 * B1 * !Y)	0.00291	0.00294	0.00292
	(!A1 * A3 * B1 * !Y)	-0.00371	-0.00373	-0.00372
	(!A1 * A3 * !B1 * Y)	0.00288	0.00289	0.00288
	(!A1 * A3 * !B1 * Y)	-0.00376	-0.00376	-0.00376
	(!A1 * !A3 * B1 * !Y)	0.00188	0.00190	0.00188
	(!A1 * !A3 * B1 * !Y)	-0.00372	-0.00374	-0.00372
	(!A1 * !A3 * !B1 * Y)	0.00169	0.00170	0.00169
	(!A1 * !A3 * !B1 * Y)	-0.00377	-0.00380	-0.00377

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	(A1 * A3 * B1 * !Y)	-0.00084	-0.00085	-0.00084
	(A1 * A3 * B1 * !Y)	0.00086	0.00087	0.00086
	(A1 * !A3 * B1 * !Y)	-0.00077	-0.00079	-0.00079
	(A1 * !A3 * B1 * !Y)	0.00090	0.00090	0.00090
	(A1 * !A3 * !B1 * Y)	-0.00036	-0.00035	-0.00036
	(A1 * !A3 * !B1 * Y)	0.00105	0.00104	0.00102
	(!A1 * A3 * B1 * !Y)	-0.00078	-0.00080	-0.00079
	(!A1 * A3 * B1 * !Y)	0.00090	0.00091	0.00090
	(!A1 * A3 * !B1 * Y)	-0.00067	-0.00069	-0.00068
	(!A1 * A3 * !B1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !A3 * B1 * !Y)	-0.00054	-0.00055	-0.00054
	(!A1 * !A3 * B1 * !Y)	0.00091	0.00091	0.00090
	(!A1 * !A3 * !B1 * Y)	-0.00039	-0.00040	-0.00040
	(!A1 * !A3 * !B1 * Y)	0.00101	0.00102	0.00102
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00145	-0.00146	-0.00146
	(A1 * A3 * B1 * !Y)	0.00177	0.00179	0.00177
	(A1 * !A3 * B1 * !Y)	-0.00132	-0.00136	-0.00135
	(A1 * !A3 * B1 * !Y)	0.00187	0.00187	0.00186
	(A1 * !A3 * !B1 * Y)	-0.00069	-0.00069	-0.00070
	(A1 * !A3 * !B1 * Y)	0.00193	0.00192	0.00188
	(!A1 * A3 * B1 * !Y)	-0.00132	-0.00136	-0.00135
	(!A1 * A3 * B1 * !Y)	0.00185	0.00188	0.00186
	(!A1 * A3 * !B1 * Y)	-0.00131	-0.00135	-0.00134
	(!A1 * A3 * !B1 * Y)	0.00186	0.00188	0.00187
	(!A1 * !A3 * B1 * !Y)	-0.00086	-0.00087	-0.00086
	(!A1 * !A3 * B1 * !Y)	0.00184	0.00187	0.00186
	(!A1 * !A3 * !B1 * Y)	-0.00077	-0.00078	-0.00077
	(!A1 * !A3 * !B1 * Y)	0.00188	0.00189	0.00188

sky130_fd_sc_hs__a31oi_4	(A1 * A3 * B1 * !Y)	-0.00311	-0.00312	-0.00311
	(A1 * A3 * B1 * !Y)	0.00355	0.00360	0.00355
	(A1 * !A3 * B1 * !Y)	-0.00277	-0.00285	-0.00284
	(A1 * !A3 * B1 * !Y)	0.00375	0.00375	0.00373
	(A1 * !A3 * !B1 * Y)	-0.00150	-0.00150	-0.00153
	(A1 * !A3 * !B1 * Y)	0.00390	0.00388	0.00379
	(!A1 * A3 * B1 * !Y)	-0.00287	-0.00294	-0.00292
	(!A1 * A3 * B1 * !Y)	0.00372	0.00377	0.00373
	(!A1 * A3 * !B1 * Y)	-0.00283	-0.00289	-0.00288
	(!A1 * A3 * !B1 * Y)	0.00376	0.00380	0.00376
	(!A1 * !A3 * B1 * !Y)	-0.00188	-0.00190	-0.00188
	(!A1 * !A3 * B1 * !Y)	0.00378	0.00375	0.00373
	(!A1 * !A3 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * !A3 * !B1 * Y)	0.00378	0.00381	0.00379

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	(A1 * A2 * B1 * !Y)	0.00089	0.00088	0.00087
	(A1 * A2 * B1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * !B1 * Y)	0.00076	0.00076	0.00075
	(A1 * !A2 * !B1 * Y)	-0.00100	-0.00100	-0.00100
	(!A2 * B1 * !Y)	0.00082	0.00082	0.00082
	(!A2 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * A2 * B1 * !Y)	0.00081	0.00081	0.00080
	(!A1 * A2 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * A2 * !B1 * Y)	0.00074	0.00074	0.00074
	(!A1 * A2 * !B1 * Y)	-0.00099	-0.00100	-0.00100
	(!A1 * !A2 * !B1 * Y)	0.00076	0.00076	0.00075
	(!A1 * !A2 * !B1 * Y)	-0.00100	-0.00100	-0.00100

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00163	0.00163	0.00162
	(A1 * A2 * B1 * !Y)	-0.00174	-0.00177	-0.00176
	(A1 * !A2 * !B1 * Y)	0.00150	0.00149	0.00148
	(A1 * !A2 * !B1 * Y)	-0.00184	-0.00184	-0.00183
	(!A2 * B1 * !Y)	0.00152	0.00153	0.00152
	(!A2 * B1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A1 * A2 * B1 * !Y)	0.00146	0.00147	0.00146
	(!A1 * A2 * B1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A1 * A2 * !B1 * Y)	0.00145	0.00146	0.00145
	(!A1 * A2 * !B1 * Y)	-0.00183	-0.00184	-0.00184
	(!A1 * !A2 * !B1 * Y)	0.00149	0.00150	0.00149
	(!A1 * !A2 * !B1 * Y)	-0.00183	-0.00184	-0.00184
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00311	0.00310	0.00308
	(A1 * A2 * B1 * !Y)	-0.00351	-0.00356	-0.00354
	(A1 * !A2 * !B1 * Y)	0.00285	0.00285	0.00283
	(A1 * !A2 * !B1 * Y)	-0.00369	-0.00373	-0.00371
	(!A2 * B1 * !Y)	0.00283	0.00286	0.00284
	(!A2 * B1 * !Y)	-0.00368	-0.00372	-0.00370
	(!A1 * A2 * B1 * !Y)	0.00277	0.00278	0.00277
	(!A1 * A2 * B1 * !Y)	-0.00371	-0.00372	-0.00370
	(!A1 * A2 * !B1 * Y)	0.00277	0.00277	0.00276
	(!A1 * A2 * !B1 * Y)	-0.00372	-0.00372	-0.00371
	(!A1 * !A2 * !B1 * Y)	0.00285	0.00285	0.00283
	(!A1 * !A2 * !B1 * Y)	-0.00369	-0.00372	-0.00371

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a31oi_1	**(A1 * A2 * B1 * !Y)**	-0.00088	-0.00088	-0.00087
	(A1 * A2 * B1 * !Y)	0.00090	0.00090	0.00089
	(A1 * !A2 * !B1 * Y)	-0.00074	-0.00076	-0.00075
	(A1 * !A2 * !B1 * Y)	0.00100	0.00101	0.00100
	(!A2 * B1 * !Y)	-0.00081	-0.00082	-0.00082
	(!A2 * B1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * A2 * B1 * !Y)	-0.00079	-0.00081	-0.00080
	(!A1 * A2 * B1 * !Y)	0.00094	0.00094	0.00093
	(!A1 * A2 * !B1 * Y)	-0.00072	-0.00074	-0.00074
	(!A1 * A2 * !B1 * Y)	0.00100	0.00100	0.00100
	(!A1 * !A2 * !B1 * Y)	-0.00074	-0.00076	-0.00075
	(!A1 * !A2 * !B1 * Y)	0.00100	0.00101	0.00100
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00162	-0.00163	-0.00162
	(A1 * A2 * B1 * !Y)	0.00177	0.00177	0.00176
	(A1 * !A2 * !B1 * Y)	-0.00146	-0.00149	-0.00148
	(A1 * !A2 * !B1 * Y)	0.00184	0.00185	0.00184
	(!A2 * B1 * !Y)	-0.00150	-0.00153	-0.00152
	(!A2 * B1 * !Y)	0.00184	0.00185	0.00184
	(!A1 * A2 * B1 * !Y)	-0.00142	-0.00147	-0.00146
	(!A1 * A2 * B1 * !Y)	0.00185	0.00185	0.00184
	(!A1 * A2 * !B1 * Y)	-0.00139	-0.00146	-0.00145
	(!A1 * A2 * !B1 * Y)	0.00183	0.00185	0.00184
	(!A1 * !A2 * !B1 * Y)	-0.00147	-0.00150	-0.00149
	(!A1 * !A2 * !B1 * Y)	0.00184	0.00185	0.00184

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00309	-0.00309	-0.00308
	(A1 * A2 * B1 * !Y)	0.00356	0.00356	0.00354
	(A1 * !A2 * !B1 * Y)	-0.00276	-0.00285	-0.00283
	(A1 * !A2 * !B1 * Y)	0.00369	0.00374	0.00372
	(!A2 * B1 * !Y)	-0.00277	-0.00286	-0.00284
	(!A2 * B1 * !Y)	0.00368	0.00374	0.00371
	(!A1 * A2 * B1 * !Y)	-0.00269	-0.00278	-0.00277
	(!A1 * A2 * B1 * !Y)	0.00373	0.00374	0.00371
	(!A1 * A2 * !B1 * Y)	-0.00268	-0.00277	-0.00276
	(!A1 * A2 * !B1 * Y)	0.00374	0.00374	0.00372
	(!A1 * !A2 * !B1 * Y)	-0.00276	-0.00285	-0.00283
	(!A1 * !A2 * !B1 * Y)	0.00369	0.00374	0.00372

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a31oi_1	**(A1 * A2 * A3 * !Y)**	0.00097	0.00098	0.00097
	(A1 * A2 * A3 * !Y)	-0.00058	-0.00059	-0.00058
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00104	0.00105	0.00104
	(A1 * A2 * A3 * !Y)	-0.00116	-0.00116	-0.00116
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00218	0.00220	0.00217
	(A1 * A2 * A3 * !Y)	-0.00237	-0.00239	-0.00236

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	(A1 * A2 * A3 * !Y)	-0.00089	-0.00090	-0.00096
	(A1 * A2 * A3 * !Y)	0.00066	0.00066	0.00060
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00085	-0.00087	-0.00103
	(A1 * A2 * A3 * !Y)	0.00133	0.00132	0.00120
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00180	-0.00184	-0.00215
	(A1 * A2 * A3 * !Y)	0.00270	0.00268	0.00244

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	A3	B1	X
0	x	x	0	0
x	x	x	1	1
1	0	x	0	0
1	1	0	0	0
1	1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31o_1	11.18880
sky130_fd_sc_hs__a31o_2	12.78720
sky130_fd_sc_hs__a31o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__a31o_1	0.00226	0.00221	0.00222	0.00249	0.18832
sky130_fd_sc_hs__a31o_2	0.00253	0.00242	0.00244	0.00241	0.37564
sky130_fd_sc_hs__a31o_4	0.00440	0.00422	0.00418	0.00450	0.74263

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	0.00010	0.00015
sky130_fd_sc_hs__a31o_2	0.00000	0.00013	0.00019
sky130_fd_sc_hs__a31o_4	0.00000	0.00027	0.00039

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (RR)	0.31257	1.70143	9.69977
	A2->X (RR)	0.32620	1.72822	9.94472
	A3->X (RR)	0.33244	1.70779	9.94438
	B1->X (RR)	0.23566	1.61009	9.66804
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.31204	1.54585	9.90135
	A2->X (RR)	0.32527	1.56047	10.08580
	A3->X (RR)	0.33166	1.53350	10.05560
	B1->X (RR)	0.20976	1.42318	9.78968
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.33910	1.45104	10.05090
	A2->X (RR)	0.35355	1.45811	10.22860
	A3->X (RR)	0.36204	1.43307	10.19790
	B1->X (RR)	0.21088	1.29251	9.87937

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.82941	1.92189	8.09967
	A2->X (FF)	0.94788	2.04685	8.28009
	A3->X (FF)	1.03340	2.13786	8.41064
	B1->X (FF)	0.91682	1.91270	7.75378
sky130_fd_sc_hs__a31o_2	A1->X (FF)	1.15415	2.27637	8.66493
	A2->X (FF)	1.30168	2.43200	8.85474
	A3->X (FF)	1.38691	2.52562	8.96769
	B1->X (FF)	1.26114	2.28918	8.38688
sky130_fd_sc_hs__a31o_4	A1->X (FF)	1.09709	2.18618	8.62427
	A2->X (FF)	1.21599	2.31322	8.78428
	A3->X (FF)	1.32993	2.43938	8.93676
	B1->X (FF)	1.18983	2.17733	8.29915

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00453	0.00449	0.00442
	A1	0.00217	0.00213	0.00207
	A2	0.00486	0.00485	0.00480
	A2	0.00217	0.00215	0.00211
	A3	0.00524	0.00523	0.00517
	A3	0.00217	0.00215	0.00209
	B1	0.00464	0.00455	0.00449
	B1	0.00170	0.00162	0.00156
sky130_fd_sc_hs__a31o_2	A1	0.00616	0.00620	0.00615
	A1	0.00355	0.00358	0.00355
	A2	0.00654	0.00661	0.00659
	A2	0.00355	0.00361	0.00360
	A3	0.00699	0.00706	0.00704
	A3	0.00355	0.00361	0.00360
	B1	0.00624	0.00624	0.00620
	B1	0.00310	0.00312	0.00307
sky130_fd_sc_hs__a31o_4	A1	0.01158	0.01166	0.01168
	A1	0.00690	0.00700	0.00703
	A2	0.01230	0.01246	0.01254
	A2	0.00691	0.00705	0.00715
	A3	0.01308	0.01327	0.01335
	A3	0.00690	0.00709	0.00717
	B1	0.01114	0.01117	0.01111
	B1	0.00561	0.00564	0.00559

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00182	0.00182	0.00185
	A1	0.00423	0.00422	0.00420
	A2	0.00207	0.00207	0.00214
	A2	0.00478	0.00478	0.00475
	A3	0.00220	0.00221	0.00218
	A3	0.00526	0.00526	0.00521
	B1	0.00182	0.00180	0.00215
	B1	0.00485	0.00484	0.00478
sky130_fd_sc_hs__a31o_2	A1	0.00303	0.00313	0.00309
	A1	0.00570	0.00579	0.00580
	A2	0.00332	0.00344	0.00329
	A2	0.00633	0.00644	0.00644
	A3	0.00350	0.00361	0.00356
	A3	0.00690	0.00701	0.00699
	B1	0.00294	0.00303	0.00383
	B1	0.00649	0.00659	0.00656
sky130_fd_sc_hs__a31o_4	A1	0.00623	0.00647	0.00652
	A1	0.01105	0.01128	0.01132
	A2	0.00666	0.00693	0.00702
	A2	0.01213	0.01239	0.01245
	A3	0.00718	0.00750	0.00759
	A3	0.01331	0.01361	0.01365
	B1	0.00666	0.00687	0.00789
	B1	0.01251	0.01272	0.01273

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__a31o_1	**(A2 * A3 * B1 * X)**	0.00066	0.00065	0.00065
	(A2 * A3 * B1 * X)	-0.00080	-0.00081	-0.00081
	(A2 * !A3 * B1 * X)	0.00059	0.00059	0.00059
	(A2 * !A3 * B1 * X)	-0.00085	-0.00085	-0.00085
	(A2 * !A3 * !B1 * !X)	0.00025	0.00025	0.00023
	(A2 * !A3 * !B1 * !X)	-0.00097	-0.00098	-0.00102
	(!A2 * B1 * X)	0.00061	0.00061	0.00061
	(!A2 * B1 * X)	-0.00085	-0.00085	-0.00085
	(!A2 * !B1 * !X)	0.00025	0.00025	0.00024
	(!A2 * !B1 * !X)	-0.00100	-0.00101	-0.00102
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00084	0.00084	0.00083
	(A2 * A3 * B1 * X)	-0.00077	-0.00079	-0.00078
	(A2 * !A3 * B1 * X)	0.00076	0.00076	0.00076
	(A2 * !A3 * B1 * X)	-0.00082	-0.00082	-0.00081
	(A2 * !A3 * !B1 * !X)	0.00032	0.00032	0.00030
	(A2 * !A3 * !B1 * !X)	-0.00100	-0.00101	-0.00105
	(!A2 * B1 * X)	0.00078	0.00079	0.00079
	(!A2 * B1 * X)	-0.00081	-0.00082	-0.00082
	(!A2 * !B1 * !X)	0.00032	0.00032	0.00031
	(!A2 * !B1 * !X)	-0.00104	-0.00104	-0.00106
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00140	0.00140	0.00139
	(A2 * A3 * B1 * X)	-0.00161	-0.00164	-0.00163
	(A2 * !A3 * B1 * X)	0.00127	0.00127	0.00127
	(A2 * !A3 * B1 * X)	-0.00171	-0.00171	-0.00171
	(A2 * !A3 * !B1 * !X)	0.00059	0.00059	0.00053
	(A2 * !A3 * !B1 * !X)	-0.00196	-0.00198	-0.00207
	(!A2 * B1 * X)	0.00131	0.00131	0.00131
	(!A2 * B1 * X)	-0.00172	-0.00171	-0.00171
	(!A2 * !B1 * !X)	0.00057	0.00057	0.00055
	(!A2 * !B1 * !X)	-0.00204	-0.00205	-0.00208

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	(A2 * A3 * B1 * X)	-0.00065	-0.00065	-0.00065
	(A2 * A3 * B1 * X)	0.00081	0.00081	0.00081
	(A2 * !A3 * B1 * X)	-0.00057	-0.00059	-0.00059
	(A2 * !A3 * B1 * X)	0.00085	0.00086	0.00085
	(A2 * !A3 * !B1 * !X)	-0.00023	-0.00023	-0.00023
	(A2 * !A3 * !B1 * !X)	0.00103	0.00102	0.00102
	(!A2 * B1 * X)	-0.00060	-0.00061	-0.00061
	(!A2 * B1 * X)	0.00086	0.00086	0.00085
	(!A2 * !B1 * !X)	-0.00024	-0.00024	-0.00024
	(!A2 * !B1 * !X)	0.00103	0.00102	0.00102
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00084	-0.00084	-0.00083
	(A2 * A3 * B1 * X)	0.00079	0.00079	0.00078
	(A2 * !A3 * B1 * X)	-0.00073	-0.00076	-0.00076
	(A2 * !A3 * B1 * X)	0.00082	0.00082	0.00082
	(A2 * !A3 * !B1 * !X)	-0.00030	-0.00030	-0.00029
	(A2 * !A3 * !B1 * !X)	0.00106	0.00106	0.00106
	(!A2 * B1 * X)	-0.00078	-0.00079	-0.00079
	(!A2 * B1 * X)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * !X)	0.00106	0.00106	0.00106

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00140	-0.00140	-0.00139
	(A2 * A3 * B1 * X)	0.00164	0.00164	0.00163
	(A2 * !A3 * B1 * X)	-0.00122	-0.00127	-0.00127
	(A2 * !A3 * B1 * X)	0.00171	0.00173	0.00171
	(A2 * !A3 * !B1 * !X)	-0.00053	-0.00052	-0.00052
	(A2 * !A3 * !B1 * !X)	0.00210	0.00209	0.00208
	(!A2 * B1 * X)	-0.00129	-0.00131	-0.00131
	(!A2 * B1 * X)	0.00173	0.00173	0.00171
	(!A2 * !B1 * !X)	-0.00054	-0.00054	-0.00053
	(!A2 * !B1 * !X)	0.00210	0.00209	0.00208

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a31o_1	**(A1 * A3 * B1 * X)**	0.00064	0.00064	0.00064
	(A1 * A3 * B1 * X)	-0.00080	-0.00082	-0.00081
	(A1 * !A3 * B1 * X)	0.00059	0.00059	0.00059
	(A1 * !A3 * B1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A3 * !B1 * !X)	0.00030	0.00030	0.00030
	(A1 * !A3 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * A3 * B1 * X)	0.00059	0.00060	0.00060
	(!A1 * A3 * B1 * X)	-0.00084	-0.00085	-0.00085
	(!A1 * A3 * !B1 * !X)	0.00056	0.00057	0.00056
	(!A1 * A3 * !B1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * !A3 * B1 * X)	0.00038	0.00039	0.00038
	(!A1 * !A3 * B1 * X)	-0.00084	-0.00085	-0.00085
	(!A1 * !A3 * !B1 * !X)	0.00032	0.00032	0.00032
	(!A1 * !A3 * !B1 * !X)	-0.00088	-0.00089	-0.00088

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00081	0.00080	0.00080
	(A1 * A3 * B1 * X)	-0.00077	-0.00078	-0.00078
	(A1 * !A3 * B1 * X)	0.00074	0.00075	0.00074
	(A1 * !A3 * B1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * !A3 * !B1 * !X)	0.00037	0.00038	0.00037
	(A1 * !A3 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * A3 * B1 * X)	0.00075	0.00075	0.00075
	(!A1 * A3 * B1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * A3 * !B1 * !X)	0.00068	0.00069	0.00068
	(!A1 * A3 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A3 * B1 * X)	0.00050	0.00051	0.00050
	(!A1 * !A3 * B1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A3 * !B1 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A3 * !B1 * !X)	-0.00089	-0.00089	-0.00089
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00138	0.00139	0.00138
	(A1 * A3 * B1 * X)	-0.00163	-0.00165	-0.00164
	(A1 * !A3 * B1 * X)	0.00127	0.00127	0.00127
	(A1 * !A3 * B1 * X)	-0.00173	-0.00173	-0.00173
	(A1 * !A3 * !B1 * !X)	0.00074	0.00074	0.00074
	(A1 * !A3 * !B1 * !X)	-0.00174	-0.00175	-0.00174
	(!A1 * A3 * B1 * X)	0.00130	0.00130	0.00129
	(!A1 * A3 * B1 * X)	-0.00172	-0.00173	-0.00173
	(!A1 * A3 * !B1 * !X)	0.00129	0.00129	0.00129
	(!A1 * A3 * !B1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A3 * B1 * X)	0.00086	0.00086	0.00086
	(!A1 * !A3 * B1 * X)	-0.00172	-0.00174	-0.00173
	(!A1 * !A3 * !B1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A3 * !B1 * !X)	-0.00174	-0.00176	-0.00175

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	(A1 * A3 * B1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * A3 * B1 * X)	0.00081	0.00082	0.00081
	(A1 * !A3 * B1 * X)	-0.00058	-0.00059	-0.00059
	(A1 * !A3 * B1 * X)	0.00085	0.00086	0.00085
	(A1 * !A3 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(A1 * !A3 * !B1 * !X)	0.00091	0.00091	0.00089
	(!A1 * A3 * B1 * X)	-0.00058	-0.00060	-0.00060
	(!A1 * A3 * B1 * X)	0.00084	0.00086	0.00085
	(!A1 * A3 * !B1 * !X)	-0.00055	-0.00057	-0.00056
	(!A1 * A3 * !B1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A3 * B1 * X)	-0.00038	-0.00039	-0.00038
	(!A1 * !A3 * B1 * X)	0.00086	0.00085	0.00085
	(!A1 * !A3 * !B1 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A3 * !B1 * !X)	0.00088	0.00089	0.00089
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * A3 * B1 * X)	0.00078	0.00078	0.00078
	(A1 * !A3 * B1 * X)	-0.00073	-0.00075	-0.00074
	(A1 * !A3 * B1 * X)	0.00081	0.00082	0.00082
	(A1 * !A3 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(A1 * !A3 * !B1 * !X)	0.00092	0.00091	0.00089
	(!A1 * A3 * B1 * X)	-0.00074	-0.00075	-0.00075
	(!A1 * A3 * B1 * X)	0.00081	0.00082	0.00082
	(!A1 * A3 * !B1 * !X)	-0.00067	-0.00069	-0.00068
	(!A1 * A3 * !B1 * !X)	0.00088	0.00089	0.00089
	(!A1 * !A3 * B1 * X)	-0.00050	-0.00051	-0.00050
	(!A1 * !A3 * B1 * X)	0.00083	0.00082	0.00082
	(!A1 * !A3 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A3 * !B1 * !X)	0.00089	0.00089	0.00089

sky130_fd_sc_hs__a31o_4	(A1 * A3 * B1 * X)	-0.00138	-0.00138	-0.00138
	(A1 * A3 * B1 * X)	0.00166	0.00165	0.00164
	(A1 * !A3 * B1 * X)	-0.00124	-0.00127	-0.00127
	(A1 * !A3 * B1 * X)	0.00175	0.00173	0.00173
	(A1 * !A3 * !B1 * !X)	-0.00070	-0.00070	-0.00071
	(A1 * !A3 * !B1 * !X)	0.00181	0.00179	0.00175
	(!A1 * A3 * B1 * X)	-0.00127	-0.00130	-0.00129
	(!A1 * A3 * B1 * X)	0.00172	0.00175	0.00173
	(!A1 * A3 * !B1 * !X)	-0.00126	-0.00129	-0.00129
	(!A1 * A3 * !B1 * !X)	0.00173	0.00175	0.00174
	(!A1 * !A3 * B1 * X)	-0.00086	-0.00086	-0.00086
	(!A1 * !A3 * B1 * X)	0.00172	0.00174	0.00173
	(!A1 * !A3 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A3 * !B1 * !X)	0.00175	0.00176	0.00176

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	(A1 * A2 * B1 * X)	0.00072	0.00071	0.00071
	(A1 * A2 * B1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * !A2 * !B1 * !X)	0.00057	0.00058	0.00057
	(A1 * !A2 * !B1 * !X)	-0.00092	-0.00093	-0.00092
	(!A2 * B1 * X)	0.00066	0.00066	0.00066
	(!A2 * B1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * A2 * B1 * X)	0.00064	0.00065	0.00065
	(!A1 * A2 * B1 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * A2 * !B1 * !X)	0.00056	0.00056	0.00056
	(!A1 * A2 * !B1 * !X)	-0.00092	-0.00093	-0.00092
	(!A1 * !A2 * !B1 * !X)	0.00057	0.00058	0.00057
	(!A1 * !A2 * !B1 * !X)	-0.00092	-0.00093	-0.00092

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00087	0.00087	0.00086
	(A1 * A2 * B1 * X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !X)	0.00068	0.00069	0.00068
	(A1 * !A2 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(!A2 * B1 * X)	0.00081	0.00082	0.00081
	(!A2 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * A2 * B1 * X)	0.00080	0.00080	0.00079
	(!A1 * A2 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * A2 * !B1 * !X)	0.00067	0.00067	0.00067
	(!A1 * A2 * !B1 * !X)	-0.00093	-0.00093	-0.00093
	(!A1 * !A2 * !B1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A2 * !B1 * !X)	-0.00092	-0.00093	-0.00093
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00137	0.00137	0.00136
	(A1 * A2 * B1 * X)	-0.00163	-0.00166	-0.00165
	(A1 * !A2 * !B1 * !X)	0.00124	0.00126	0.00125
	(A1 * !A2 * !B1 * !X)	-0.00173	-0.00175	-0.00174
	(!A2 * B1 * X)	0.00126	0.00127	0.00126
	(!A2 * B1 * X)	-0.00173	-0.00174	-0.00173
	(!A1 * A2 * B1 * X)	0.00123	0.00123	0.00122
	(!A1 * A2 * B1 * X)	-0.00174	-0.00174	-0.00173
	(!A1 * A2 * !B1 * !X)	0.00122	0.00122	0.00122
	(!A1 * A2 * !B1 * !X)	-0.00174	-0.00174	-0.00174
	(!A1 * !A2 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !A2 * !B1 * !X)	-0.00173	-0.00175	-0.00174

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a31o_1	**(A1 * A2 * B1 * X)**	-0.00071	-0.00071	-0.00071
	(A1 * A2 * B1 * X)	0.00080	0.00080	0.00080
	(A1 * !A2 * !B1 * !X)	-0.00056	-0.00058	-0.00057
	(A1 * !A2 * !B1 * !X)	0.00092	0.00093	0.00092
	(!A2 * B1 * X)	-0.00065	-0.00066	-0.00066
	(!A2 * B1 * X)	0.00083	0.00084	0.00083
	(!A1 * A2 * B1 * X)	-0.00063	-0.00065	-0.00065
	(!A1 * A2 * B1 * X)	0.00084	0.00084	0.00083
	(!A1 * A2 * !B1 * !X)	-0.00054	-0.00056	-0.00056
	(!A1 * A2 * !B1 * !X)	0.00093	0.00093	0.00092
	(!A1 * !A2 * !B1 * !X)	-0.00056	-0.00058	-0.00057
	(!A1 * !A2 * !B1 * !X)	0.00092	0.00093	0.00092
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00086	-0.00087	-0.00086
	(A1 * A2 * B1 * X)	0.00077	0.00077	0.00077
	(A1 * !A2 * !B1 * !X)	-0.00067	-0.00069	-0.00068
	(A1 * !A2 * !B1 * !X)	0.00093	0.00094	0.00093
	(!A2 * B1 * X)	-0.00079	-0.00082	-0.00081
	(!A2 * B1 * X)	0.00080	0.00081	0.00080
	(!A1 * A2 * B1 * X)	-0.00077	-0.00080	-0.00079
	(!A1 * A2 * B1 * X)	0.00081	0.00081	0.00080
	(!A1 * A2 * !B1 * !X)	-0.00065	-0.00067	-0.00067
	(!A1 * A2 * !B1 * !X)	0.00094	0.00093	0.00093
	(!A1 * !A2 * !B1 * !X)	-0.00067	-0.00069	-0.00068
	(!A1 * !A2 * !B1 * !X)	0.00093	0.00094	0.00093

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00136	-0.00136	-0.00136
	(A1 * A2 * B1 * X)	0.00166	0.00166	0.00165
	(A1 * !A2 * !B1 * !X)	-0.00123	-0.00126	-0.00125
	(A1 * !A2 * !B1 * !X)	0.00175	0.00175	0.00174
	(!A2 * B1 * X)	-0.00124	-0.00127	-0.00126
	(!A2 * B1 * X)	0.00174	0.00175	0.00174
	(!A1 * A2 * B1 * X)	-0.00119	-0.00123	-0.00122
	(!A1 * A2 * B1 * X)	0.00175	0.00175	0.00174
	(!A1 * A2 * !B1 * !X)	-0.00118	-0.00122	-0.00122
	(!A1 * A2 * !B1 * !X)	0.00175	0.00175	0.00174
	(!A1 * !A2 * !B1 * !X)	-0.00123	-0.00126	-0.00125
	(!A1 * !A2 * !B1 * !X)	0.00175	0.00175	0.00174

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a31o_1	**(A1 * A2 * A3 * X)**	0.00097	0.00098	0.00097
	(A1 * A2 * A3 * X)	-0.00054	-0.00055	-0.00054
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00092	0.00091	0.00091
	(A1 * A2 * A3 * X)	-0.00054	-0.00053	-0.00053
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00159	0.00157	0.00157
	(A1 * A2 * A3 * X)	-0.00116	-0.00114	-0.00114

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	(A1 * A2 * A3 * X)	-0.00089	-0.00090	-0.00096
	(A1 * A2 * A3 * X)	0.00061	0.00060	0.00055
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00083	-0.00084	-0.00090
	(A1 * A2 * A3 * X)	0.00059	0.00059	0.00054
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00138	-0.00140	-0.00155
	(A1 * A2 * A3 * X)	0.00130	0.00129	0.00117

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	B2	Y
0	x	x	0	x	1
0	x	x	1	0	1
x	x	x	1	1	0
1	0	x	0	x	1
1	0	x	1	0	1
1	1	0	0	x	1
1	1	0	1	0	1
1	1	1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32oi_1	11.18880
sky130_fd_sc_hs__a32oi_2	20.77920
sky130_fd_sc_hs__a32oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__a32oi_1	0.00261	0.00256	0.00230	0.00270	0.00245	0.07305
sky130_fd_sc_hs__a32oi_2	0.00488	0.00463	0.00454	0.00500	0.00477	0.14350
sky130_fd_sc_hs__a32oi_4	0.00965	0.00913	0.00905	0.00998	0.00944	0.26894

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.00009	0.00013
sky130_fd_sc_hs__a32oi_2	0.00000	0.00017	0.00027
sky130_fd_sc_hs__a32oi_4	0.00000	0.00034	0.00053

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (FR)	0.78155	2.88525	14.28300
	A2->Y (FR)	0.89467	3.00411	14.40050
	A3->Y (FR)	0.98379	3.10638	14.46600
	B1->Y (FR)	0.71746	2.72194	13.69450
	B2->Y (FR)	0.81478	2.82696	13.79880
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.68662	2.52476	14.15880
	A2->Y (FR)	0.84756	2.71277	14.48010
	A3->Y (FR)	0.93668	2.81299	14.55080
	B1->Y (FR)	0.62343	2.37556	13.66870
	B2->Y (FR)	0.76559	2.53496	13.86360
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.69587	2.33971	14.25700
	A2->Y (FR)	0.82537	2.47852	14.37390
	A3->Y (FR)	0.92826	2.60230	14.49450
	B1->Y (FR)	0.61790	2.14205	13.57190
	B2->Y (FR)	0.76553	2.32888	13.84090

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.11055	0.88043	5.12800
	A2->Y (RF)	0.12283	0.88596	5.13317
	A3->Y (RF)	0.12769	0.84385	4.82173
	B1->Y (RF)	0.07959	0.77261	4.68061
	B2->Y (RF)	0.08438	0.76583	4.64563
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.10279	0.84721	5.31124
	A2->Y (RF)	0.12304	0.86236	5.30220
	A3->Y (RF)	0.12770	0.80441	4.84950
	B1->Y (RF)	0.07193	0.72729	4.77323
	B2->Y (RF)	0.08225	0.73067	4.71262
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.10517	0.81264	5.35196
	A2->Y (RF)	0.12298	0.82007	5.28978
	A3->Y (RF)	0.12848	0.76403	4.81447
	B1->Y (RF)	0.07292	0.69165	4.79497
	B2->Y (RF)	0.08152	0.68676	4.64249

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00060	0.00049	0.00047
	A1	0.00384	0.00373	0.00371
	A2	0.00081	0.00071	0.00070
	A2	0.00446	0.00436	0.00432
	A3	0.00109	0.00104	0.00102
	A3	0.00506	0.00500	0.00484
	B1	0.00088	0.00076	0.00074
	B1	0.00407	0.00395	0.00393
	B2	0.00108	0.00100	0.00099
	B2	0.00464	0.00456	0.00453
sky130_fd_sc_hs__a32oi_2	A1	0.00060	0.00039	0.00037
	A1	0.00694	0.00672	0.00670
	A2	0.00143	0.00123	0.00120
	A2	0.00858	0.00836	0.00828
	A3	0.00183	0.00172	0.00169
	A3	0.00975	0.00962	0.00955
	B1	0.00118	0.00096	0.00092
	B1	0.00730	0.00707	0.00705
	B2	0.00190	0.00172	0.00167
	B2	0.00885	0.00867	0.00863

sky130_fd_sc_hs__a32oi_4	**A1**	0.00114	0.00069	0.00068
	A1	0.01389	0.01342	0.01339
	A2	0.00238	0.00196	0.00192
	A2	0.01671	0.01627	0.01620
	A3	0.00328	0.00306	0.00300
	A3	0.01919	0.01892	0.01880
	B1	0.00202	0.00153	0.00150
	B1	0.01448	0.01397	0.01391
	B2	0.00329	0.00296	0.00289
	B2	0.01733	0.01694	0.01685

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00403	0.00397	0.00389
	A1	0.00101	0.00095	0.00087
	A2	0.00447	0.00442	0.00433
	A2	0.00100	0.00096	0.00088
	A3	0.00480	0.00476	0.00466
	A3	0.00098	0.00094	0.00085
	B1	0.00332	0.00331	0.00329
	B1	0.00006	0.00004	0.00002
	B2	0.00370	0.00370	0.00369
	B2	0.00004	0.00002	0.00001

sky130_fd_sc_hs__a32oi_2	**A1**	0.00783	0.00773	0.00757
	A1	0.00192	0.00180	0.00166
	A2	0.00870	0.00860	0.00843
	A2	0.00192	0.00181	0.00167
	A3	0.00957	0.00947	0.00928
	A3	0.00191	0.00181	0.00165
	B1	0.00629	0.00627	0.00626
	B1	-0.00001	-0.00006	-0.00007
	B2	0.00722	0.00720	0.00719
	B2	-0.00002	-0.00006	-0.00006
sky130_fd_sc_hs__a32oi_4	**A1**	0.01540	0.01514	0.01488
	A1	0.00350	0.00324	0.00299
	A2	0.01712	0.01688	0.01662
	A2	0.00350	0.00327	0.00300
	A3	0.01885	0.01864	0.01832
	A3	0.00345	0.00323	0.00296
	B1	0.01270	0.01258	0.01263
	B1	-0.00010	-0.00025	-0.00021
	B2	0.01449	0.01442	0.01444
	B2	-0.00007	-0.00017	-0.00015

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A2 * A3 * B1 * B2 * !Y)**	0.00083	0.00082	0.00082
	(A2 * A3 * B1 * B2 * !Y)	-0.00086	-0.00087	-0.00086
	(A2 * !A3 * B1 * B2 * !Y)	0.00075	0.00075	0.00074
	(A2 * !A3 * B1 * B2 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * !A3 * B1 * !B2 * Y)	0.00033	0.00033	0.00031
	(A2 * !A3 * B1 * !B2 * Y)	-0.00106	-0.00107	-0.00111
	(A2 * !A3 * !B1 * Y)	0.00033	0.00033	0.00031
	(A2 * !A3 * !B1 * Y)	-0.00106	-0.00107	-0.00111
	(!A2 * B1 * B2 * !Y)	0.00077	0.00077	0.00076
	(!A2 * B1 * B2 * !Y)	-0.00090	-0.00090	-0.00090
	(!A2 * B1 * !B2 * Y)	0.00032	0.00032	0.00031
	(!A2 * B1 * !B2 * Y)	-0.00110	-0.00111	-0.00112
	(!A2 * !B1 * Y)	0.00032	0.00032	0.00031
	(!A2 * !B1 * Y)	-0.00110	-0.00111	-0.00112
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00163	0.00163	0.00162
	(A2 * A3 * B1 * B2 * !Y)	-0.00171	-0.00174	-0.00172
	(A2 * !A3 * B1 * B2 * !Y)	0.00146	0.00146	0.00146
	(A2 * !A3 * B1 * B2 * !Y)	-0.00179	-0.00180	-0.00180
	(A2 * !A3 * B1 * !B2 * Y)	0.00069	0.00068	0.00062
	(A2 * !A3 * B1 * !B2 * Y)	-0.00208	-0.00208	-0.00220
	(A2 * !A3 * !B1 * Y)	0.00069	0.00068	0.00062
	(A2 * !A3 * !B1 * Y)	-0.00208	-0.00208	-0.00220
	(!A2 * B1 * B2 * !Y)	0.00152	0.00153	0.00153
	(!A2 * B1 * B2 * !Y)	-0.00179	-0.00180	-0.00179
	(!A2 * B1 * !B2 * Y)	0.00069	0.00068	0.00065
	(!A2 * B1 * !B2 * Y)	-0.00215	-0.00215	-0.00221
	(!A2 * !B1 * Y)	0.00069	0.00069	0.00065
	(!A2 * !B1 * Y)	-0.00215	-0.00215	-0.00221

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00320	0.00322	0.00320
	(A2 * A3 * B1 * B2 * !Y)	-0.00340	-0.00348	-0.00344
	(A2 * !A3 * B1 * B2 * !Y)	0.00287	0.00287	0.00287
	(A2 * !A3 * B1 * B2 * !Y)	-0.00361	-0.00361	-0.00360
	(A2 * !A3 * B1 * !B2 * Y)	0.00124	0.00123	0.00113
	(A2 * !A3 * B1 * !B2 * Y)	-0.00423	-0.00424	-0.00446
	(A2 * !A3 * !B1 * Y)	0.00124	0.00123	0.00113
	(A2 * !A3 * !B1 * Y)	-0.00423	-0.00424	-0.00446
	(!A2 * B1 * B2 * !Y)	0.00300	0.00302	0.00300
	(!A2 * B1 * B2 * !Y)	-0.00361	-0.00362	-0.00360
	(!A2 * B1 * !B2 * Y)	0.00124	0.00124	0.00119
	(!A2 * B1 * !B2 * Y)	-0.00438	-0.00439	-0.00448
	(!A2 * !B1 * Y)	0.00125	0.00124	0.00119
	(!A2 * !B1 * Y)	-0.00437	-0.00439	-0.00448

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A2 * A3 * B1 * B2 * !Y)**	-0.00082	-0.00082	-0.00082
	(A2 * A3 * B1 * B2 * !Y)	0.00086	0.00087	0.00086
	(A2 * !A3 * B1 * B2 * !Y)	-0.00071	-0.00075	-0.00074
	(A2 * !A3 * B1 * B2 * !Y)	0.00090	0.00091	0.00090
	(A2 * !A3 * B1 * !B2 * Y)	-0.00030	-0.00030	-0.00030
	(A2 * !A3 * B1 * !B2 * Y)	0.00113	0.00112	0.00112
	(A2 * !A3 * !B1 * Y)	-0.00030	-0.00030	-0.00030
	(A2 * !A3 * !B1 * Y)	0.00113	0.00112	0.00112
	(!A2 * B1 * B2 * !Y)	-0.00075	-0.00077	-0.00076
	(!A2 * B1 * B2 * !Y)	0.00091	0.00091	0.00090
	(!A2 * B1 * !B2 * Y)	-0.00030	-0.00030	-0.00030
	(!A2 * B1 * !B2 * Y)	0.00113	0.00112	0.00112
	(!A2 * !B1 * Y)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * Y)	0.00113	0.00112	0.00112
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00162	-0.00163	-0.00162
	(A2 * A3 * B1 * B2 * !Y)	0.00172	0.00174	0.00172
	(A2 * !A3 * B1 * B2 * !Y)	-0.00139	-0.00146	-0.00146
	(A2 * !A3 * B1 * B2 * !Y)	0.00180	0.00180	0.00180
	(A2 * !A3 * B1 * !B2 * Y)	-0.00062	-0.00062	-0.00061
	(A2 * !A3 * B1 * !B2 * Y)	0.00222	0.00222	0.00221
	(A2 * !A3 * !B1 * Y)	-0.00062	-0.00062	-0.00062
	(A2 * !A3 * !B1 * Y)	0.00222	0.00222	0.00221
	(!A2 * B1 * B2 * !Y)	-0.00150	-0.00153	-0.00153
	(!A2 * B1 * B2 * !Y)	0.00180	0.00181	0.00180
	(!A2 * B1 * !B2 * Y)	-0.00063	-0.00063	-0.00063
	(!A2 * B1 * !B2 * Y)	0.00220	0.00222	0.00221
	(!A2 * !B1 * Y)	-0.00063	-0.00064	-0.00063
	(!A2 * !B1 * Y)	0.00220	0.00222	0.00221

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00320	-0.00322	-0.00320
	(A2 * A3 * B1 * B2 * !Y)	0.00343	0.00348	0.00344
	(A2 * !A3 * B1 * B2 * !Y)	-0.00272	-0.00287	-0.00287
	(A2 * !A3 * B1 * B2 * !Y)	0.00361	0.00362	0.00361
	(A2 * !A3 * B1 * !B2 * Y)	-0.00114	-0.00113	-0.00112
	(A2 * !A3 * B1 * !B2 * Y)	0.00452	0.00450	0.00448
	(A2 * !A3 * !B1 * Y)	-0.00112	-0.00113	-0.00113
	(A2 * !A3 * !B1 * Y)	0.00446	0.00450	0.00448
	(!A2 * B1 * B2 * !Y)	-0.00294	-0.00302	-0.00300
	(!A2 * B1 * B2 * !Y)	0.00361	0.00362	0.00361
	(!A2 * B1 * !B2 * Y)	-0.00117	-0.00116	-0.00115
	(!A2 * B1 * !B2 * Y)	0.00453	0.00451	0.00448
	(!A2 * !B1 * Y)	-0.00117	-0.00116	-0.00116
	(!A2 * !B1 * Y)	0.00453	0.00451	0.00448

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A3 * B1 * B2 * !Y)**	0.00085	0.00085	0.00085
	(A1 * A3 * B1 * B2 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * !A3 * B1 * B2 * !Y)	0.00080	0.00080	0.00080
	(A1 * !A3 * B1 * B2 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * !A3 * B1 * !B2 * Y)	0.00043	0.00043	0.00043
	(A1 * !A3 * B1 * !B2 * Y)	-0.00095	-0.00096	-0.00095
	(A1 * !A3 * !B1 * Y)	0.00043	0.00043	0.00043
	(A1 * !A3 * !B1 * Y)	-0.00095	-0.00096	-0.00095
	(!A1 * A3 * B1 * B2 * !Y)	0.00079	0.00080	0.00079
	(!A1 * A3 * B1 * B2 * !Y)	-0.00090	-0.00091	-0.00090
	(!A1 * A3 * B1 * !B2 * Y)	0.00074	0.00074	0.00074
	(!A1 * A3 * B1 * !B2 * Y)	-0.00096	-0.00096	-0.00096
	(!A1 * A3 * !B1 * Y)	0.00074	0.00074	0.00074
	(!A1 * A3 * !B1 * Y)	-0.00096	-0.00096	-0.00096
	(!A1 * !A3 * B1 * B2 * !Y)	0.00054	0.00054	0.00054
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00090	-0.00091	-0.00090
	(!A1 * !A3 * B1 * !B2 * Y)	0.00046	0.00046	0.00045
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00096	-0.00096	-0.00096
	(!A1 * !A3 * !B1 * Y)	0.00046	0.00046	0.00045
	(!A1 * !A3 * !B1 * Y)	-0.00096	-0.00096	-0.00096

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00156	0.00156	0.00155
	(A1 * A3 * B1 * B2 * !Y)	-0.00177	-0.00181	-0.00178
	(A1 * !A3 * B1 * B2 * !Y)	0.00143	0.00143	0.00143
	(A1 * !A3 * B1 * B2 * !Y)	-0.00187	-0.00188	-0.00187
	(A1 * !A3 * B1 * !B2 * Y)	0.00080	0.00080	0.00080
	(A1 * !A3 * B1 * !B2 * Y)	-0.00190	-0.00191	-0.00190
	(A1 * !A3 * !B1 * Y)	0.00080	0.00080	0.00080
	(A1 * !A3 * !B1 * Y)	-0.00190	-0.00191	-0.00190
	(!A1 * A3 * B1 * B2 * !Y)	0.00146	0.00146	0.00146
	(!A1 * A3 * B1 * B2 * !Y)	-0.00186	-0.00188	-0.00187
	(!A1 * A3 * B1 * !B2 * Y)	0.00143	0.00144	0.00143
	(!A1 * A3 * B1 * !B2 * Y)	-0.00189	-0.00191	-0.00190
	(!A1 * A3 * !B1 * Y)	0.00143	0.00144	0.00143
	(!A1 * A3 * !B1 * Y)	-0.00189	-0.00191	-0.00190
	(!A1 * !A3 * B1 * B2 * !Y)	0.00097	0.00097	0.00097
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00188	-0.00189	-0.00188
	(!A1 * !A3 * B1 * !B2 * Y)	0.00085	0.00086	0.00085
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00190	-0.00192	-0.00191
	(!A1 * !A3 * !B1 * Y)	0.00085	0.00086	0.00086
	(!A1 * !A3 * !B1 * Y)	-0.00190	-0.00192	-0.00191

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00312	0.00313	0.00311
	(A1 * A3 * B1 * B2 * !Y)	-0.00349	-0.00358	-0.00353
	(A1 * !A3 * B1 * B2 * !Y)	0.00282	0.00285	0.00283
	(A1 * !A3 * B1 * B2 * !Y)	-0.00370	-0.00373	-0.00371
	(A1 * !A3 * B1 * !B2 * Y)	0.00154	0.00155	0.00155
	(A1 * !A3 * B1 * !B2 * Y)	-0.00377	-0.00378	-0.00376
	(A1 * !A3 * !B1 * Y)	0.00154	0.00155	0.00155
	(A1 * !A3 * !B1 * Y)	-0.00377	-0.00378	-0.00376
	(!A1 * A3 * B1 * B2 * !Y)	0.00292	0.00294	0.00292
	(!A1 * A3 * B1 * B2 * !Y)	-0.00371	-0.00370	-0.00371
	(!A1 * A3 * B1 * !B2 * Y)	0.00287	0.00288	0.00287
	(!A1 * A3 * B1 * !B2 * Y)	-0.00376	-0.00375	-0.00375
	(!A1 * A3 * !B1 * Y)	0.00287	0.00288	0.00287
	(!A1 * A3 * !B1 * Y)	-0.00376	-0.00375	-0.00375
	(!A1 * !A3 * B1 * B2 * !Y)	0.00184	0.00185	0.00184
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00371	-0.00373	-0.00371
	(!A1 * !A3 * B1 * !B2 * Y)	0.00164	0.00165	0.00164
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00377	-0.00380	-0.00377
	(!A1 * !A3 * !B1 * Y)	0.00164	0.00165	0.00164
	(!A1 * !A3 * !B1 * Y)	-0.00378	-0.00380	-0.00377

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A3 * B1 * B2 * !Y)**	-0.00085	-0.00085	-0.00085
	(A1 * A3 * B1 * B2 * !Y)	0.00087	0.00087	0.00086
	(A1 * !A3 * B1 * B2 * !Y)	-0.00078	-0.00080	-0.00080
	(A1 * !A3 * B1 * B2 * !Y)	0.00090	0.00091	0.00090
	(A1 * !A3 * B1 * !B2 * Y)	-0.00041	-0.00041	-0.00042
	(A1 * !A3 * B1 * !B2 * Y)	0.00099	0.00098	0.00096
	(A1 * !A3 * !B1 * Y)	-0.00041	-0.00041	-0.00042
	(A1 * !A3 * !B1 * Y)	0.00099	0.00098	0.00096
	(!A1 * A3 * B1 * B2 * !Y)	-0.00078	-0.00080	-0.00079
	(!A1 * A3 * B1 * B2 * !Y)	0.00090	0.00091	0.00090
	(!A1 * A3 * B1 * !B2 * Y)	-0.00072	-0.00074	-0.00074
	(!A1 * A3 * B1 * !B2 * Y)	0.00096	0.00097	0.00096
	(!A1 * A3 * !B1 * Y)	-0.00072	-0.00074	-0.00074
	(!A1 * A3 * !B1 * Y)	0.00096	0.00097	0.00096
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00054	-0.00054	-0.00054
	(!A1 * !A3 * B1 * B2 * !Y)	0.00091	0.00091	0.00090
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00046	-0.00046	-0.00045
	(!A1 * !A3 * B1 * !B2 * Y)	0.00096	0.00096	0.00096
	(!A1 * !A3 * !B1 * Y)	-0.00046	-0.00046	-0.00045
	(!A1 * !A3 * !B1 * Y)	0.00096	0.00096	0.00096

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00155	-0.00156	-0.00155
	(A1 * A3 * B1 * B2 * !Y)	0.00179	0.00181	0.00178
	(A1 * !A3 * B1 * B2 * !Y)	-0.00139	-0.00143	-0.00143
	(A1 * !A3 * B1 * B2 * !Y)	0.00188	0.00189	0.00188
	(A1 * !A3 * B1 * !B2 * Y)	-0.00076	-0.00076	-0.00078
	(A1 * !A3 * B1 * !B2 * Y)	0.00198	0.00196	0.00192
	(A1 * !A3 * !B1 * Y)	-0.00076	-0.00076	-0.00078
	(A1 * !A3 * !B1 * Y)	0.00198	0.00196	0.00192
	(!A1 * A3 * B1 * B2 * !Y)	-0.00143	-0.00146	-0.00146
	(!A1 * A3 * B1 * B2 * !Y)	0.00186	0.00189	0.00188
	(!A1 * A3 * B1 * !B2 * Y)	-0.00140	-0.00144	-0.00143
	(!A1 * A3 * B1 * !B2 * Y)	0.00189	0.00192	0.00190
	(!A1 * A3 * !B1 * Y)	-0.00140	-0.00144	-0.00143
	(!A1 * A3 * !B1 * Y)	0.00189	0.00192	0.00190
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00097	-0.00097	-0.00097
	(!A1 * !A3 * B1 * B2 * !Y)	0.00191	0.00190	0.00188
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00085	-0.00086	-0.00085
	(!A1 * !A3 * B1 * !B2 * Y)	0.00192	0.00193	0.00192
	(!A1 * !A3 * !B1 * Y)	-0.00085	-0.00086	-0.00086
	(!A1 * !A3 * !B1 * Y)	0.00192	0.00193	0.00192

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00311	-0.00313	-0.00311
	(A1 * A3 * B1 * B2 * !Y)	0.00353	0.00358	0.00353
	(A1 * !A3 * B1 * B2 * !Y)	-0.00275	-0.00285	-0.00283
	(A1 * !A3 * B1 * B2 * !Y)	0.00372	0.00374	0.00372
	(A1 * !A3 * B1 * !B2 * Y)	-0.00147	-0.00147	-0.00150
	(A1 * !A3 * B1 * !B2 * Y)	0.00391	0.00388	0.00379
	(A1 * !A3 * !B1 * Y)	-0.00147	-0.00147	-0.00150
	(A1 * !A3 * !B1 * Y)	0.00391	0.00388	0.00379
	(!A1 * A3 * B1 * B2 * !Y)	-0.00286	-0.00293	-0.00292
	(!A1 * A3 * B1 * B2 * !Y)	0.00371	0.00370	0.00372
	(!A1 * A3 * B1 * !B2 * Y)	-0.00281	-0.00288	-0.00287
	(!A1 * A3 * B1 * !B2 * Y)	0.00376	0.00375	0.00376
	(!A1 * A3 * !B1 * Y)	-0.00281	-0.00288	-0.00287
	(!A1 * A3 * !B1 * Y)	0.00376	0.00375	0.00376
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !A3 * B1 * B2 * !Y)	0.00377	0.00374	0.00372
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * !A3 * B1 * !B2 * Y)	0.00378	0.00381	0.00379
	(!A1 * !A3 * !B1 * Y)	-0.00164	-0.00165	-0.00164
	(!A1 * !A3 * !B1 * Y)	0.00378	0.00381	0.00379

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * B1 * B2 * !Y)**	0.00079	0.00079	0.00079
	(A1 * A2 * B1 * B2 * !Y)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * B1 * !B2 * Y)	0.00074	0.00075	0.00074
	(A1 * !A2 * B1 * !B2 * Y)	-0.00091	-0.00091	-0.00091
	(A1 * !A2 * !B1 * Y)	0.00074	0.00075	0.00074
	(A1 * !A2 * !B1 * Y)	-0.00091	-0.00091	-0.00091
	(!A2 * B1 * B2 * !Y)	0.00074	0.00075	0.00074
	(!A2 * B1 * B2 * !Y)	-0.00090	-0.00091	-0.00091
	(!A1 * A2 * B1 * B2 * !Y)	0.00071	0.00072	0.00072
	(!A1 * A2 * B1 * B2 * !Y)	-0.00090	-0.00091	-0.00091
	(!A1 * A2 * B1 * !B2 * Y)	0.00072	0.00072	0.00072
	(!A1 * A2 * B1 * !B2 * Y)	-0.00091	-0.00091	-0.00091
	(!A1 * A2 * !B1 * Y)	0.00072	0.00071	0.00072
	(!A1 * A2 * !B1 * Y)	-0.00091	-0.00091	-0.00091
	(!A1 * !A2 * B1 * !B2 * Y)	0.00074	0.00075	0.00074
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00091	-0.00091	-0.00091
	(!A1 * !A2 * !B1 * Y)	0.00074	0.00075	0.00074
	(!A1 * !A2 * !B1 * Y)	-0.00091	-0.00091	-0.00091

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00162	0.00160	0.00159
	(A1 * A2 * B1 * B2 * !Y)	-0.00176	-0.00178	-0.00176
	(A1 * !A2 * B1 * !B2 * Y)	0.00148	0.00148	0.00148
	(A1 * !A2 * B1 * !B2 * Y)	-0.00185	-0.00185	-0.00185
	(A1 * !A2 * !B1 * Y)	0.00148	0.00148	0.00148
	(A1 * !A2 * !B1 * Y)	-0.00185	-0.00185	-0.00185
	(!A2 * B1 * B2 * !Y)	0.00148	0.00149	0.00148
	(!A2 * B1 * B2 * !Y)	-0.00185	-0.00186	-0.00185
	(!A1 * A2 * B1 * B2 * !Y)	0.00146	0.00145	0.00145
	(!A1 * A2 * B1 * B2 * !Y)	-0.00185	-0.00185	-0.00185
	(!A1 * A2 * B1 * !B2 * Y)	0.00144	0.00145	0.00144
	(!A1 * A2 * B1 * !B2 * Y)	-0.00185	-0.00185	-0.00185
	(!A1 * A2 * !B1 * Y)	0.00144	0.00145	0.00144
	(!A1 * A2 * !B1 * Y)	-0.00185	-0.00185	-0.00185
	(!A1 * !A2 * B1 * !B2 * Y)	0.00147	0.00149	0.00148
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00184	-0.00186	-0.00185
	(!A1 * !A2 * !B1 * Y)	0.00147	0.00149	0.00148
	(!A1 * !A2 * !B1 * Y)	-0.00184	-0.00186	-0.00185

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00311	0.00310	0.00308
	(A1 * A2 * B1 * B2 * !Y)	-0.00353	-0.00358	-0.00355
	(A1 * !A2 * B1 * !B2 * Y)	0.00284	0.00284	0.00282
	(A1 * !A2 * B1 * !B2 * Y)	-0.00372	-0.00375	-0.00374
	(A1 * !A2 * !B1 * Y)	0.00284	0.00284	0.00282
	(A1 * !A2 * !B1 * Y)	-0.00372	-0.00375	-0.00374
	(!A2 * B1 * B2 * !Y)	0.00284	0.00285	0.00283
	(!A2 * B1 * B2 * !Y)	-0.00371	-0.00375	-0.00373
	(!A1 * A2 * B1 * B2 * !Y)	0.00275	0.00278	0.00276
	(!A1 * A2 * B1 * B2 * !Y)	-0.00372	-0.00375	-0.00373
	(!A1 * A2 * B1 * !B2 * Y)	0.00276	0.00277	0.00276
	(!A1 * A2 * B1 * !B2 * Y)	-0.00375	-0.00375	-0.00374
	(!A1 * A2 * !B1 * Y)	0.00276	0.00277	0.00276
	(!A1 * A2 * !B1 * Y)	-0.00375	-0.00375	-0.00374
	(!A1 * !A2 * B1 * !B2 * Y)	0.00282	0.00284	0.00282
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00372	-0.00376	-0.00374
	(!A1 * !A2 * !B1 * Y)	0.00282	0.00284	0.00282
	(!A1 * !A2 * !B1 * Y)	-0.00372	-0.00376	-0.00374

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * B1 * B2 * !Y)**	-0.00079	-0.00079	-0.00079
	(A1 * A2 * B1 * B2 * !Y)	0.00088	0.00088	0.00087
	(A1 * !A2 * B1 * !B2 * Y)	-0.00073	-0.00075	-0.00074
	(A1 * !A2 * B1 * !B2 * Y)	0.00091	0.00092	0.00091
	(A1 * !A2 * !B1 * Y)	-0.00073	-0.00075	-0.00074
	(A1 * !A2 * !B1 * Y)	0.00091	0.00092	0.00091
	(!A2 * B1 * B2 * !Y)	-0.00073	-0.00075	-0.00074
	(!A2 * B1 * B2 * !Y)	0.00091	0.00092	0.00091
	(!A1 * A2 * B1 * B2 * !Y)	-0.00070	-0.00072	-0.00072
	(!A1 * A2 * B1 * B2 * !Y)	0.00092	0.00092	0.00091
	(!A1 * A2 * B1 * !B2 * Y)	-0.00070	-0.00072	-0.00072
	(!A1 * A2 * B1 * !B2 * Y)	0.00092	0.00092	0.00091
	(!A1 * A2 * !B1 * Y)	-0.00070	-0.00071	-0.00072
	(!A1 * A2 * !B1 * Y)	0.00092	0.00092	0.00091
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00073	-0.00075	-0.00074
	(!A1 * !A2 * B1 * !B2 * Y)	0.00091	0.00092	0.00091
	(!A1 * !A2 * !B1 * Y)	-0.00073	-0.00075	-0.00074
	(!A1 * !A2 * !B1 * Y)	0.00091	0.00092	0.00091

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00159	-0.00160	-0.00159
	(A1 * A2 * B1 * B2 * !Y)	0.00177	0.00178	0.00176
	(A1 * !A2 * B1 * !B2 * Y)	-0.00146	-0.00148	-0.00148
	(A1 * !A2 * B1 * !B2 * Y)	0.00186	0.00187	0.00185
	(A1 * !A2 * !B1 * Y)	-0.00146	-0.00148	-0.00148
	(A1 * !A2 * !B1 * Y)	0.00186	0.00187	0.00185
	(!A2 * B1 * B2 * !Y)	-0.00146	-0.00149	-0.00148
	(!A2 * B1 * B2 * !Y)	0.00186	0.00187	0.00185
	(!A1 * A2 * B1 * B2 * !Y)	-0.00141	-0.00145	-0.00145
	(!A1 * A2 * B1 * B2 * !Y)	0.00186	0.00186	0.00185
	(!A1 * A2 * B1 * !B2 * Y)	-0.00141	-0.00145	-0.00144
	(!A1 * A2 * B1 * !B2 * Y)	0.00186	0.00187	0.00185
	(!A1 * A2 * !B1 * Y)	-0.00141	-0.00145	-0.00144
	(!A1 * A2 * !B1 * Y)	0.00186	0.00187	0.00185
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00146	-0.00149	-0.00148
	(!A1 * !A2 * B1 * !B2 * Y)	0.00186	0.00187	0.00185
	(!A1 * !A2 * !B1 * Y)	-0.00146	-0.00149	-0.00148
	(!A1 * !A2 * !B1 * Y)	0.00186	0.00187	0.00185

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00309	-0.00309	-0.00308
	(A1 * A2 * B1 * B2 * !Y)	0.00357	0.00358	0.00355
	(A1 * !A2 * B1 * !B2 * Y)	-0.00275	-0.00284	-0.00282
	(A1 * !A2 * B1 * !B2 * Y)	0.00372	0.00377	0.00375
	(A1 * !A2 * !B1 * Y)	-0.00275	-0.00284	-0.00282
	(A1 * !A2 * !B1 * Y)	0.00372	0.00377	0.00375
	(!A2 * B1 * B2 * !Y)	-0.00276	-0.00285	-0.00283
	(!A2 * B1 * B2 * !Y)	0.00371	0.00377	0.00374
	(!A1 * A2 * B1 * B2 * !Y)	-0.00269	-0.00278	-0.00276
	(!A1 * A2 * B1 * B2 * !Y)	0.00376	0.00377	0.00374
	(!A1 * A2 * B1 * !B2 * Y)	-0.00268	-0.00277	-0.00276
	(!A1 * A2 * B1 * !B2 * Y)	0.00377	0.00377	0.00375
	(!A1 * A2 * !B1 * Y)	-0.00268	-0.00277	-0.00276
	(!A1 * A2 * !B1 * Y)	0.00377	0.00377	0.00375
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00275	-0.00284	-0.00282
	(!A1 * !A2 * B1 * !B2 * Y)	0.00372	0.00378	0.00375
	(!A1 * !A2 * !B1 * Y)	-0.00275	-0.00284	-0.00282
	(!A1 * !A2 * !B1 * Y)	0.00372	0.00378	0.00375

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * A3 * B2 * !Y)**	0.00094	0.00095	0.00094
	(A1 * A2 * A3 * B2 * !Y)	-0.00058	-0.00059	-0.00058
	(A1 * A2 * A3 * !B2 * !Y)	0.00088	0.00089	0.00088
	(A1 * A2 * A3 * !B2 * !Y)	-0.00058	-0.00058	-0.00058
	(A1 * A2 * !A3 * !B2 * Y)	0.00031	0.00031	0.00030
	(A1 * A2 * !A3 * !B2 * Y)	-0.00113	-0.00113	-0.00114
	(A1 * !A2 * !B2 * Y)	0.00031	0.00031	0.00030
	(A1 * !A2 * !B2 * Y)	-0.00113	-0.00113	-0.00114
	(!A1 * !B2 * Y)	0.00031	0.00031	0.00030
	(!A1 * !B2 * Y)	-0.00113	-0.00113	-0.00114
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00177	0.00179	0.00177
	(A1 * A2 * A3 * B2 * !Y)	-0.00117	-0.00118	-0.00116
	(A1 * A2 * A3 * !B2 * !Y)	0.00167	0.00168	0.00168
	(A1 * A2 * A3 * !B2 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * A2 * !A3 * !B2 * Y)	0.00066	0.00065	0.00062
	(A1 * A2 * !A3 * !B2 * Y)	-0.00216	-0.00216	-0.00221
	(A1 * !A2 * !B2 * Y)	0.00066	0.00065	0.00062
	(A1 * !A2 * !B2 * Y)	-0.00216	-0.00216	-0.00221
	(!A1 * !B2 * Y)	0.00066	0.00065	0.00062
	(!A1 * !B2 * Y)	-0.00216	-0.00216	-0.00221
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00360	0.00362	0.00358
	(A1 * A2 * A3 * B2 * !Y)	-0.00239	-0.00238	-0.00236
	(A1 * A2 * A3 * !B2 * !Y)	0.00335	0.00337	0.00337
	(A1 * A2 * A3 * !B2 * !Y)	-0.00235	-0.00236	-0.00235
	(A1 * A2 * !A3 * !B2 * Y)	0.00126	0.00125	0.00119
	(A1 * A2 * !A3 * !B2 * Y)	-0.00441	-0.00441	-0.00451
	(A1 * !A2 * !B2 * Y)	0.00126	0.00125	0.00119
	(A1 * !A2 * !B2 * Y)	-0.00441	-0.00441	-0.00451
	(!A1 * !B2 * Y)	0.00126	0.00125	0.00120
	(!A1 * !B2 * Y)	-0.00441	-0.00441	-0.00451

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	(A1 * A2 * A3 * B2 * !Y)	-0.00082	-0.00084	-0.00093
	(A1 * A2 * A3 * B2 * !Y)	0.00068	0.00068	0.00060
	(A1 * A2 * A3 * !B2 * !Y)	-0.00087	-0.00089	-0.00088
	(A1 * A2 * A3 * !B2 * !Y)	0.00058	0.00058	0.00058
	(A1 * A2 * !A3 * !B2 * Y)	-0.00030	-0.00030	-0.00030
	(A1 * A2 * !A3 * !B2 * Y)	0.00114	0.00115	0.00114
	(A1 * !A2 * !B2 * Y)	-0.00030	-0.00030	-0.00030
	(A1 * !A2 * !B2 * Y)	0.00114	0.00115	0.00114
	(!A1 * !B2 * Y)	-0.00030	-0.00030	-0.00030
	(!A1 * !B2 * Y)	0.00114	0.00115	0.00114
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00155	-0.00157	-0.00175
	(A1 * A2 * A3 * B2 * !Y)	0.00136	0.00136	0.00121
	(A1 * A2 * A3 * !B2 * !Y)	-0.00165	-0.00168	-0.00168
	(A1 * A2 * A3 * !B2 * !Y)	0.00117	0.00117	0.00116
	(A1 * A2 * !A3 * !B2 * Y)	-0.00060	-0.00061	-0.00060
	(A1 * A2 * !A3 * !B2 * Y)	0.00221	0.00223	0.00221
	(A1 * !A2 * !B2 * Y)	-0.00060	-0.00061	-0.00060
	(A1 * !A2 * !B2 * Y)	0.00221	0.00223	0.00221
	(!A1 * !B2 * Y)	-0.00060	-0.00061	-0.00060
	(!A1 * !B2 * Y)	0.00221	0.00223	0.00221

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00317	-0.00321	-0.00355
	(A1 * A2 * A3 * B2 * !Y)	0.00273	0.00271	0.00243
	(A1 * A2 * A3 * !B2 * !Y)	-0.00328	-0.00337	-0.00337
	(A1 * A2 * A3 * !B2 * !Y)	0.00235	0.00236	0.00235
	(A1 * A2 * !A3 * !B2 * Y)	-0.00116	-0.00117	-0.00116
	(A1 * A2 * !A3 * !B2 * Y)	0.00449	0.00454	0.00451
	(A1 * !A2 * !B2 * Y)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !B2 * Y)	0.00449	0.00454	0.00451
	(!A1 * !B2 * Y)	-0.00116	-0.00118	-0.00116
	(!A1 * !B2 * Y)	0.00449	0.00454	0.00451

Passive power(pJ) for B2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * A3 * B1 * !Y)**	0.00091	0.00090	0.00090
	(A1 * A2 * A3 * B1 * !Y)	-0.00062	-0.00061	-0.00061
	(A1 * A2 * A3 * !B1 * !Y)	0.00085	0.00086	0.00085
	(A1 * A2 * A3 * !B1 * !Y)	-0.00061	-0.00061	-0.00061
	(A1 * A2 * !A3 * !B1 * Y)	0.00074	0.00075	0.00074
	(A1 * A2 * !A3 * !B1 * Y)	-0.00094	-0.00095	-0.00095
	(A1 * !A2 * !B1 * Y)	0.00074	0.00075	0.00074
	(A1 * !A2 * !B1 * Y)	-0.00094	-0.00095	-0.00095
	(!A1 * !B1 * Y)	0.00074	0.00075	0.00074
	(!A1 * !B1 * Y)	-0.00094	-0.00095	-0.00095

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00177	0.00178	0.00177
	(A1 * A2 * A3 * B1 * !Y)	-0.00119	-0.00120	-0.00119
	(A1 * A2 * A3 * !B1 * !Y)	0.00167	0.00168	0.00167
	(A1 * A2 * A3 * !B1 * !Y)	-0.00119	-0.00119	-0.00119
	(A1 * A2 * !A3 * !B1 * Y)	0.00147	0.00146	0.00146
	(A1 * A2 * !A3 * !B1 * Y)	-0.00186	-0.00185	-0.00185
	(A1 * !A2 * !B1 * Y)	0.00147	0.00145	0.00146
	(A1 * !A2 * !B1 * Y)	-0.00186	-0.00185	-0.00185
	(!A1 * !B1 * Y)	0.00145	0.00146	0.00146
	(!A1 * !B1 * Y)	-0.00184	-0.00185	-0.00185
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00350	0.00354	0.00350
	(A1 * A2 * A3 * B1 * !Y)	-0.00237	-0.00239	-0.00237
	(A1 * A2 * A3 * !B1 * !Y)	0.00328	0.00329	0.00328
	(A1 * A2 * A3 * !B1 * !Y)	-0.00235	-0.00237	-0.00236
	(A1 * A2 * !A3 * !B1 * Y)	0.00284	0.00289	0.00286
	(A1 * A2 * !A3 * !B1 * Y)	-0.00369	-0.00373	-0.00370
	(A1 * !A2 * !B1 * Y)	0.00285	0.00289	0.00286
	(A1 * !A2 * !B1 * Y)	-0.00369	-0.00373	-0.00370
	(!A1 * !B1 * Y)	0.00285	0.00290	0.00286
	(!A1 * !B1 * Y)	-0.00369	-0.00373	-0.00370

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * A3 * B1 * !Y)**	-0.00079	-0.00080	-0.00089
	(A1 * A2 * A3 * B1 * !Y)	0.00071	0.00070	0.00063
	(A1 * A2 * A3 * !B1 * !Y)	-0.00083	-0.00085	-0.00085
	(A1 * A2 * A3 * !B1 * !Y)	0.00061	0.00061	0.00061
	(A1 * A2 * !A3 * !B1 * Y)	-0.00073	-0.00075	-0.00074
	(A1 * A2 * !A3 * !B1 * Y)	0.00094	0.00095	0.00095
	(A1 * !A2 * !B1 * Y)	-0.00073	-0.00075	-0.00074
	(A1 * !A2 * !B1 * Y)	0.00094	0.00095	0.00095
	(!A1 * !B1 * Y)	-0.00073	-0.00075	-0.00074
	(!A1 * !B1 * Y)	0.00094	0.00095	0.00095
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00154	-0.00157	-0.00175
	(A1 * A2 * A3 * B1 * !Y)	0.00138	0.00138	0.00123
	(A1 * A2 * A3 * !B1 * !Y)	-0.00165	-0.00168	-0.00167
	(A1 * A2 * A3 * !B1 * !Y)	0.00119	0.00119	0.00119
	(A1 * A2 * !A3 * !B1 * Y)	-0.00144	-0.00146	-0.00146
	(A1 * A2 * !A3 * !B1 * Y)	0.00186	0.00186	0.00185
	(A1 * !A2 * !B1 * Y)	-0.00144	-0.00145	-0.00146
	(A1 * !A2 * !B1 * Y)	0.00186	0.00186	0.00185
	(!A1 * !B1 * Y)	-0.00144	-0.00146	-0.00146
	(!A1 * !B1 * Y)	0.00186	0.00186	0.00185
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00308	-0.00313	-0.00347
	(A1 * A2 * A3 * B1 * !Y)	0.00273	0.00271	0.00244
	(A1 * A2 * A3 * !B1 * !Y)	-0.00322	-0.00329	-0.00328
	(A1 * A2 * A3 * !B1 * !Y)	0.00235	0.00238	0.00236
	(A1 * A2 * !A3 * !B1 * Y)	-0.00279	-0.00289	-0.00286
	(A1 * A2 * !A3 * !B1 * Y)	0.00369	0.00373	0.00371
	(A1 * !A2 * !B1 * Y)	-0.00279	-0.00289	-0.00286
	(A1 * !A2 * !B1 * Y)	0.00369	0.00373	0.00371
	(!A1 * !B1 * Y)	-0.00279	-0.00289	-0.00286
	(!A1 * !B1 * Y)	0.00369	0.00373	0.00371

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	B2	X
0	x	x	0	x	0
0	x	x	1	0	0
x	x	x	1	1	1
1	0	x	0	x	0
1	0	x	1	0	0
1	1	0	0	x	0
1	1	0	1	0	0
1	1	1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32o_1	12.78720
sky130_fd_sc_hs__a32o_2	14.38560
sky130_fd_sc_hs__a32o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__a32o_1	0.00231	0.00226	0.00235	0.00234	0.00213	0.18657
sky130_fd_sc_hs__a32o_2	0.00248	0.00242	0.00250	0.00247	0.00230	0.35519
sky130_fd_sc_hs__a32o_4	0.00418	0.00467	0.00413	0.00446	0.00508	0.71997

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	0.00012	0.00017
sky130_fd_sc_hs__a32o_2	0.00000	0.00016	0.00021
sky130_fd_sc_hs__a32o_4	0.00000	0.00033	0.00043

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (RR)	0.36474	1.78986	10.00270
	A2->X (RR)	0.37879	1.80677	10.17070
	A3->X (RR)	0.38653	1.78259	10.14510
	B1->X (RR)	0.30199	1.70973	9.86404
	B2->X (RR)	0.30689	1.70890	9.97873
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.35838	1.62662	10.07480
	A2->X (RR)	0.37258	1.63548	10.22390
	A3->X (RR)	0.38034	1.60808	10.17640
	B1->X (RR)	0.28804	1.53855	9.93810
	B2->X (RR)	0.29450	1.53134	10.03100
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.37483	1.49864	10.10490
	A2->X (RR)	0.39374	1.51906	10.29040
	A3->X (RR)	0.40191	1.48993	10.24050
	B1->X (RR)	0.29275	1.39577	9.95566
	B2->X (RR)	0.30056	1.39471	10.06070

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	1.09589	2.21136	8.52814
	A2->X (FF)	1.20884	2.32814	8.67967
	A3->X (FF)	1.28721	2.41311	8.78788
	B1->X (FF)	1.01415	2.02250	7.95182
	B2->X (FF)	1.10200	2.12306	8.09056
sky130_fd_sc_hs__a32o_2	A1->X (FF)	1.39623	2.52889	8.95308
	A2->X (FF)	1.52964	2.67152	9.11947
	A3->X (FF)	1.64625	2.79430	9.25529
	B1->X (FF)	1.33096	2.35669	8.45360
	B2->X (FF)	1.45955	2.49919	8.61396
sky130_fd_sc_hs__a32o_4	A1->X (FF)	1.27561	2.37602	8.84759
	A2->X (FF)	1.38212	2.48286	8.98855
	A3->X (FF)	1.51197	2.62643	9.14816
	B1->X (FF)	1.24410	2.23434	8.36556
	B2->X (FF)	1.34435	2.33583	8.49167

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.00551	0.00547	0.00539
	A1	0.00275	0.00271	0.00263
	A2	0.00585	0.00581	0.00575
	A2	0.00275	0.00272	0.00265
	A3	0.00626	0.00622	0.00614
	A3	0.00275	0.00271	0.00263
	B1	0.00480	0.00475	0.00469
	B1	0.00191	0.00186	0.00180
	B2	0.00514	0.00513	0.00509
	B2	0.00189	0.00188	0.00184
sky130_fd_sc_hs__a32o_2	A1	0.00711	0.00715	0.00709
	A1	0.00402	0.00405	0.00437
	A2	0.00751	0.00756	0.00753
	A2	0.00417	0.00422	0.00419
	A3	0.00799	0.00805	0.00801
	A3	0.00417	0.00422	0.00418
	B1	0.00649	0.00653	0.00650
	B1	0.00335	0.00339	0.00337
	B2	0.00692	0.00699	0.00700
	B2	0.00332	0.00341	0.00379

sky130_fd_sc_hs__a32o_4	**A1**	0.01326	0.01338	0.01341
	A1	0.00803	0.00818	0.00820
	A2	0.01420	0.01436	0.01441
	A2	0.00800	0.00817	0.00825
	A3	0.01490	0.01510	0.01518
	A3	0.00802	0.00823	0.00833
	B1	0.01185	0.01187	0.01187
	B1	0.00623	0.00626	0.00626
	B2	0.01308	0.01320	0.01320
	B2	0.00619	0.00632	0.00633

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00225	0.00223	0.00220
	A1	0.00520	0.00518	0.00514
	A2	0.00248	0.00248	0.00246
	A2	0.00573	0.00573	0.00569
	A3	0.00262	0.00261	0.00258
	A3	0.00625	0.00622	0.00615
	B1	0.00245	0.00241	0.00238
	B1	0.00527	0.00522	0.00516
	B2	0.00259	0.00260	0.00259
	B2	0.00572	0.00573	0.00567

sky130_fd_sc_hs__a32o_2	**A1**	0.00338	0.00347	0.00349
	A1	0.00650	0.00659	0.00659
	A2	0.00366	0.00378	0.00360
	A2	0.00715	0.00725	0.00725
	A3	0.00382	0.00391	0.00382
	A3	0.00773	0.00781	0.00776
	B1	0.00355	0.00361	0.00365
	B1	0.00660	0.00665	0.00662
	B2	0.00377	0.00388	0.00384
	B2	0.00722	0.00733	0.00729
sky130_fd_sc_hs__a32o_4	**A1**	0.00639	0.00661	0.00670
	A1	0.01200	0.01221	0.01227
	A2	0.00680	0.00704	0.00714
	A2	0.01331	0.01353	0.01358
	A3	0.00737	0.00767	0.00777
	A3	0.01444	0.01472	0.01475
	B1	0.00700	0.00717	0.00723
	B1	0.01245	0.01260	0.01259
	B2	0.00581	0.00603	0.00779
	B2	0.01354	0.01376	0.01374

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A2 * A3 * B1 * B2 * X)**	0.00071	0.00070	0.00070
	(A2 * A3 * B1 * B2 * X)	-0.00078	-0.00079	-0.00078
	(A2 * !A3 * B1 * B2 * X)	0.00064	0.00064	0.00064
	(A2 * !A3 * B1 * B2 * X)	-0.00082	-0.00082	-0.00082
	(A2 * !A3 * B1 * !B2 * !X)	0.00028	0.00028	0.00026
	(A2 * !A3 * B1 * !B2 * !X)	-0.00096	-0.00097	-0.00101
	(A2 * !A3 * !B1 * !X)	0.00028	0.00028	0.00026
	(A2 * !A3 * !B1 * !X)	-0.00096	-0.00097	-0.00101
	(!A2 * B1 * B2 * X)	0.00066	0.00066	0.00066
	(!A2 * B1 * B2 * X)	-0.00082	-0.00082	-0.00082
	(!A2 * B1 * !B2 * !X)	0.00028	0.00028	0.00027
	(!A2 * B1 * !B2 * !X)	-0.00099	-0.00100	-0.00101
	(!A2 * !B1 * !X)	0.00028	0.00028	0.00027
	(!A2 * !B1 * !X)	-0.00099	-0.00100	-0.00101
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00081	0.00081	0.00081
	(A2 * A3 * B1 * B2 * X)	-0.00078	-0.00079	-0.00078
	(A2 * !A3 * B1 * B2 * X)	0.00073	0.00073	0.00073
	(A2 * !A3 * B1 * B2 * X)	-0.00082	-0.00082	-0.00082
	(A2 * !A3 * B1 * !B2 * !X)	0.00032	0.00032	0.00029
	(A2 * !A3 * B1 * !B2 * !X)	-0.00098	-0.00099	-0.00103
	(A2 * !A3 * !B1 * !X)	0.00032	0.00032	0.00029
	(A2 * !A3 * !B1 * !X)	-0.00098	-0.00099	-0.00103
	(!A2 * B1 * B2 * X)	0.00075	0.00076	0.00076
	(!A2 * B1 * B2 * X)	-0.00081	-0.00082	-0.00082
	(!A2 * B1 * !B2 * !X)	0.00032	0.00032	0.00030
	(!A2 * B1 * !B2 * !X)	-0.00101	-0.00102	-0.00104
	(!A2 * !B1 * !X)	0.00032	0.00032	0.00030
	(!A2 * !B1 * !X)	-0.00101	-0.00102	-0.00104

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00127	0.00126	0.00126
	(A2 * A3 * B1 * B2 * X)	-0.00155	-0.00157	-0.00156
	(A2 * !A3 * B1 * B2 * X)	0.00113	0.00114	0.00113
	(A2 * !A3 * B1 * B2 * X)	-0.00163	-0.00164	-0.00163
	(A2 * !A3 * B1 * !B2 * !X)	0.00054	0.00053	0.00048
	(A2 * !A3 * B1 * !B2 * !X)	-0.00181	-0.00183	-0.00192
	(A2 * !A3 * !B1 * !X)	0.00054	0.00053	0.00048
	(A2 * !A3 * !B1 * !X)	-0.00181	-0.00183	-0.00192
	(!A2 * B1 * B2 * X)	0.00118	0.00118	0.00117
	(!A2 * B1 * B2 * X)	-0.00163	-0.00164	-0.00163
	(!A2 * B1 * !B2 * !X)	0.00051	0.00051	0.00048
	(!A2 * B1 * !B2 * !X)	-0.00189	-0.00190	-0.00193
	(!A2 * !B1 * !X)	0.00051	0.00051	0.00048
	(!A2 * !B1 * !X)	-0.00189	-0.00190	-0.00193

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A2 * A3 * B1 * B2 * X)**	-0.00070	-0.00070	-0.00070
	(A2 * A3 * B1 * B2 * X)	0.00079	0.00079	0.00078
	(A2 * !A3 * B1 * B2 * X)	-0.00061	-0.00064	-0.00064
	(A2 * !A3 * B1 * B2 * X)	0.00082	0.00083	0.00082
	(A2 * !A3 * B1 * !B2 * !X)	-0.00026	-0.00026	-0.00026
	(A2 * !A3 * B1 * !B2 * !X)	0.00102	0.00102	0.00101
	(A2 * !A3 * !B1 * !X)	-0.00026	-0.00026	-0.00026
	(A2 * !A3 * !B1 * !X)	0.00102	0.00102	0.00101
	(!A2 * B1 * B2 * X)	-0.00065	-0.00066	-0.00066
	(!A2 * B1 * B2 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * !B2 * !X)	-0.00027	-0.00027	-0.00026
	(!A2 * B1 * !B2 * !X)	0.00102	0.00102	0.00101
	(!A2 * !B1 * !X)	-0.00027	-0.00027	-0.00026
	(!A2 * !B1 * !X)	0.00102	0.00102	0.00101
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00081	-0.00081	-0.00081
	(A2 * A3 * B1 * B2 * X)	0.00079	0.00079	0.00078
	(A2 * !A3 * B1 * B2 * X)	-0.00070	-0.00073	-0.00073
	(A2 * !A3 * B1 * B2 * X)	0.00082	0.00083	0.00082
	(A2 * !A3 * B1 * !B2 * !X)	-0.00029	-0.00029	-0.00029
	(A2 * !A3 * B1 * !B2 * !X)	0.00104	0.00104	0.00104
	(A2 * !A3 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(A2 * !A3 * !B1 * !X)	0.00104	0.00104	0.00104
	(!A2 * B1 * B2 * X)	-0.00075	-0.00076	-0.00076
	(!A2 * B1 * B2 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * B1 * !B2 * !X)	0.00104	0.00104	0.00104
	(!A2 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * !X)	0.00104	0.00104	0.00104

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00126	-0.00126	-0.00126
	(A2 * A3 * B1 * B2 * X)	0.00157	0.00157	0.00156
	(A2 * !A3 * B1 * B2 * X)	-0.00108	-0.00114	-0.00113
	(A2 * !A3 * B1 * B2 * X)	0.00163	0.00165	0.00164
	(A2 * !A3 * B1 * !B2 * !X)	-0.00046	-0.00046	-0.00045
	(A2 * !A3 * B1 * !B2 * !X)	0.00193	0.00194	0.00193
	(A2 * !A3 * !B1 * !X)	-0.00046	-0.00046	-0.00045
	(A2 * !A3 * !B1 * !X)	0.00193	0.00194	0.00193
	(!A2 * B1 * B2 * X)	-0.00115	-0.00118	-0.00117
	(!A2 * B1 * B2 * X)	0.00163	0.00165	0.00164
	(!A2 * B1 * !B2 * !X)	-0.00048	-0.00047	-0.00047
	(!A2 * B1 * !B2 * !X)	0.00195	0.00194	0.00193
	(!A2 * !B1 * !X)	-0.00048	-0.00047	-0.00047
	(!A2 * !B1 * !X)	0.00195	0.00194	0.00193

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A3 * B1 * B2 * X)**	0.00069	0.00069	0.00069
	(A1 * A3 * B1 * B2 * X)	-0.00077	-0.00079	-0.00078
	(A1 * !A3 * B1 * B2 * X)	0.00064	0.00064	0.00064
	(A1 * !A3 * B1 * B2 * X)	-0.00082	-0.00082	-0.00082
	(A1 * !A3 * B1 * !B2 * !X)	0.00032	0.00032	0.00032
	(A1 * !A3 * B1 * !B2 * !X)	-0.00088	-0.00089	-0.00088
	(A1 * !A3 * !B1 * !X)	0.00032	0.00032	0.00032
	(A1 * !A3 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * A3 * B1 * B2 * X)	0.00064	0.00065	0.00065
	(!A1 * A3 * B1 * B2 * X)	-0.00081	-0.00082	-0.00082
	(!A1 * A3 * B1 * !B2 * !X)	0.00059	0.00059	0.00058
	(!A1 * A3 * B1 * !B2 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * A3 * !B1 * !X)	0.00059	0.00059	0.00058
	(!A1 * A3 * !B1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * !A3 * B1 * B2 * X)	0.00044	0.00044	0.00044
	(!A1 * !A3 * B1 * B2 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A3 * B1 * !B2 * !X)	0.00035	0.00035	0.00034
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00089	-0.00089	-0.00088
	(!A1 * !A3 * !B1 * !X)	0.00035	0.00035	0.00034
	(!A1 * !A3 * !B1 * !X)	-0.00089	-0.00089	-0.00088

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00079	0.00079	0.00079
	(A1 * A3 * B1 * B2 * X)	-0.00077	-0.00079	-0.00078
	(A1 * !A3 * B1 * B2 * X)	0.00073	0.00074	0.00073
	(A1 * !A3 * B1 * B2 * X)	-0.00081	-0.00081	-0.00082
	(A1 * !A3 * B1 * !B2 * !X)	0.00037	0.00037	0.00037
	(A1 * !A3 * B1 * !B2 * !X)	-0.00088	-0.00088	-0.00088
	(A1 * !A3 * !B1 * !X)	0.00037	0.00037	0.00037
	(A1 * !A3 * !B1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * A3 * B1 * B2 * X)	0.00075	0.00075	0.00074
	(!A1 * A3 * B1 * B2 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * A3 * B1 * !B2 * !X)	0.00068	0.00068	0.00068
	(!A1 * A3 * B1 * !B2 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * A3 * !B1 * !X)	0.00068	0.00068	0.00068
	(!A1 * A3 * !B1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * !A3 * B1 * B2 * X)	0.00050	0.00050	0.00049
	(!A1 * !A3 * B1 * B2 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A3 * B1 * !B2 * !X)	0.00040	0.00040	0.00039
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A3 * !B1 * !X)	0.00040	0.00040	0.00039
	(!A1 * !A3 * !B1 * !X)	-0.00088	-0.00089	-0.00088

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00135	0.00135	0.00135
	(A1 * A3 * B1 * B2 * X)	-0.00169	-0.00172	-0.00171
	(A1 * !A3 * B1 * B2 * X)	0.00126	0.00126	0.00126
	(A1 * !A3 * B1 * B2 * X)	-0.00181	-0.00180	-0.00180
	(A1 * !A3 * B1 * !B2 * !X)	0.00067	0.00067	0.00066
	(A1 * !A3 * B1 * !B2 * !X)	-0.00190	-0.00190	-0.00189
	(A1 * !A3 * !B1 * !X)	0.00067	0.00067	0.00066
	(A1 * !A3 * !B1 * !X)	-0.00190	-0.00190	-0.00189
	(!A1 * A3 * B1 * B2 * X)	0.00126	0.00127	0.00126
	(!A1 * A3 * B1 * B2 * X)	-0.00181	-0.00181	-0.00180
	(!A1 * A3 * B1 * !B2 * !X)	0.00117	0.00118	0.00117
	(!A1 * A3 * B1 * !B2 * !X)	-0.00190	-0.00190	-0.00190
	(!A1 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * A3 * !B1 * !X)	-0.00190	-0.00191	-0.00190
	(!A1 * !A3 * B1 * B2 * X)	0.00088	0.00088	0.00088
	(!A1 * !A3 * B1 * B2 * X)	-0.00181	-0.00181	-0.00180
	(!A1 * !A3 * B1 * !B2 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00191	-0.00192	-0.00191
	(!A1 * !A3 * !B1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A3 * !B1 * !X)	-0.00191	-0.00192	-0.00191

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A3 * B1 * B2 * X)**	-0.00069	-0.00069	-0.00069
	(A1 * A3 * B1 * B2 * X)	0.00079	0.00079	0.00078
	(A1 * !A3 * B1 * B2 * X)	-0.00063	-0.00064	-0.00064
	(A1 * !A3 * B1 * B2 * X)	0.00083	0.00083	0.00082
	(A1 * !A3 * B1 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(A1 * !A3 * B1 * !B2 * !X)	0.00091	0.00091	0.00089
	(A1 * !A3 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(A1 * !A3 * !B1 * !X)	0.00091	0.00091	0.00089
	(!A1 * A3 * B1 * B2 * X)	-0.00063	-0.00065	-0.00065
	(!A1 * A3 * B1 * B2 * X)	0.00082	0.00083	0.00082
	(!A1 * A3 * B1 * !B2 * !X)	-0.00057	-0.00059	-0.00058
	(!A1 * A3 * B1 * !B2 * !X)	0.00088	0.00089	0.00088
	(!A1 * A3 * !B1 * !X)	-0.00057	-0.00059	-0.00058
	(!A1 * A3 * !B1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A3 * B1 * B2 * X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A3 * B1 * B2 * X)	0.00083	0.00083	0.00082
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00035	-0.00035	-0.00034
	(!A1 * !A3 * B1 * !B2 * !X)	0.00089	0.00089	0.00089
	(!A1 * !A3 * !B1 * !X)	-0.00035	-0.00035	-0.00034
	(!A1 * !A3 * !B1 * !X)	0.00089	0.00089	0.00089

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00079	-0.00079	-0.00079
	(A1 * A3 * B1 * B2 * X)	0.00079	0.00079	0.00078
	(A1 * !A3 * B1 * B2 * X)	-0.00072	-0.00074	-0.00073
	(A1 * !A3 * B1 * B2 * X)	0.00083	0.00081	0.00082
	(A1 * !A3 * B1 * !B2 * !X)	-0.00035	-0.00035	-0.00036
	(A1 * !A3 * B1 * !B2 * !X)	0.00091	0.00091	0.00088
	(A1 * !A3 * !B1 * !X)	-0.00035	-0.00035	-0.00036
	(A1 * !A3 * !B1 * !X)	0.00091	0.00091	0.00088
	(!A1 * A3 * B1 * B2 * X)	-0.00073	-0.00075	-0.00074
	(!A1 * A3 * B1 * B2 * X)	0.00082	0.00083	0.00082
	(!A1 * A3 * B1 * !B2 * !X)	-0.00067	-0.00068	-0.00068
	(!A1 * A3 * B1 * !B2 * !X)	0.00088	0.00089	0.00088
	(!A1 * A3 * !B1 * !X)	-0.00067	-0.00068	-0.00068
	(!A1 * A3 * !B1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A3 * B1 * B2 * X)	-0.00050	-0.00050	-0.00049
	(!A1 * !A3 * B1 * B2 * X)	0.00083	0.00082	0.00082
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00040	-0.00040	-0.00039
	(!A1 * !A3 * B1 * !B2 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A3 * !B1 * !X)	-0.00040	-0.00040	-0.00039
	(!A1 * !A3 * !B1 * !X)	0.00088	0.00089	0.00088

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00135	-0.00135	-0.00135
	(A1 * A3 * B1 * B2 * X)	0.00172	0.00172	0.00171
	(A1 * !A3 * B1 * B2 * X)	-0.00124	-0.00126	-0.00126
	(A1 * !A3 * B1 * B2 * X)	0.00181	0.00180	0.00181
	(A1 * !A3 * B1 * !B2 * !X)	-0.00063	-0.00063	-0.00064
	(A1 * !A3 * B1 * !B2 * !X)	0.00197	0.00195	0.00191
	(A1 * !A3 * !B1 * !X)	-0.00063	-0.00063	-0.00064
	(A1 * !A3 * !B1 * !X)	0.00197	0.00195	0.00191
	(!A1 * A3 * B1 * B2 * X)	-0.00124	-0.00127	-0.00126
	(!A1 * A3 * B1 * B2 * X)	0.00181	0.00182	0.00181
	(!A1 * A3 * B1 * !B2 * !X)	-0.00114	-0.00118	-0.00117
	(!A1 * A3 * B1 * !B2 * !X)	0.00190	0.00192	0.00190
	(!A1 * A3 * !B1 * !X)	-0.00114	-0.00118	-0.00117
	(!A1 * A3 * !B1 * !X)	0.00190	0.00192	0.00190
	(!A1 * !A3 * B1 * B2 * X)	-0.00088	-0.00088	-0.00088
	(!A1 * !A3 * B1 * B2 * X)	0.00181	0.00182	0.00181
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !A3 * B1 * !B2 * !X)	0.00192	0.00192	0.00191
	(!A1 * !A3 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !A3 * !B1 * !X)	0.00192	0.00192	0.00191

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A2 * B1 * B2 * X)**	0.00078	0.00078	0.00078
	(A1 * A2 * B1 * B2 * X)	-0.00076	-0.00078	-0.00077
	(A1 * !A2 * B1 * !B2 * !X)	0.00059	0.00060	0.00059
	(A1 * !A2 * B1 * !B2 * !X)	-0.00094	-0.00095	-0.00095
	(A1 * !A2 * !B1 * !X)	0.00059	0.00060	0.00059
	(A1 * !A2 * !B1 * !X)	-0.00094	-0.00095	-0.00095
	(!A2 * B1 * B2 * X)	0.00074	0.00074	0.00073
	(!A2 * B1 * B2 * X)	-0.00081	-0.00081	-0.00080
	(!A1 * A2 * B1 * B2 * X)	0.00072	0.00072	0.00072
	(!A1 * A2 * B1 * B2 * X)	-0.00081	-0.00081	-0.00080
	(!A1 * A2 * B1 * !B2 * !X)	0.00058	0.00058	0.00057
	(!A1 * A2 * B1 * !B2 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * A2 * !B1 * !X)	0.00058	0.00058	0.00057
	(!A1 * A2 * !B1 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * !A2 * B1 * !B2 * !X)	0.00059	0.00060	0.00059
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * !A2 * !B1 * !X)	0.00059	0.00060	0.00059
	(!A1 * !A2 * !B1 * !X)	-0.00095	-0.00095	-0.00095

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00089	0.00089	0.00088
	(A1 * A2 * B1 * B2 * X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * B1 * !B2 * !X)	0.00069	0.00070	0.00069
	(A1 * !A2 * B1 * !B2 * !X)	-0.00095	-0.00095	-0.00095
	(A1 * !A2 * !B1 * !X)	0.00069	0.00069	0.00069
	(A1 * !A2 * !B1 * !X)	-0.00095	-0.00094	-0.00095
	(!A2 * B1 * B2 * X)	0.00083	0.00083	0.00083
	(!A2 * B1 * B2 * X)	-0.00080	-0.00081	-0.00081
	(!A1 * A2 * B1 * B2 * X)	0.00082	0.00082	0.00081
	(!A1 * A2 * B1 * B2 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * A2 * B1 * !B2 * !X)	0.00068	0.00068	0.00067
	(!A1 * A2 * B1 * !B2 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * A2 * !B1 * !X)	0.00068	0.00068	0.00067
	(!A1 * A2 * !B1 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * !A2 * B1 * !B2 * !X)	0.00069	0.00070	0.00069
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * !A2 * !B1 * !X)	0.00069	0.00070	0.00069
	(!A1 * !A2 * !B1 * !X)	-0.00095	-0.00095	-0.00095

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00134	0.00134	0.00133
	(A1 * A2 * B1 * B2 * X)	-0.00163	-0.00166	-0.00165
	(A1 * !A2 * B1 * !B2 * !X)	0.00124	0.00125	0.00124
	(A1 * !A2 * B1 * !B2 * !X)	-0.00174	-0.00174	-0.00173
	(A1 * !A2 * !B1 * !X)	0.00124	0.00124	0.00124
	(A1 * !A2 * !B1 * !X)	-0.00174	-0.00173	-0.00173
	(!A2 * B1 * B2 * X)	0.00125	0.00124	0.00125
	(!A2 * B1 * B2 * X)	-0.00173	-0.00173	-0.00173
	(!A1 * A2 * B1 * B2 * X)	0.00120	0.00120	0.00120
	(!A1 * A2 * B1 * B2 * X)	-0.00173	-0.00174	-0.00173
	(!A1 * A2 * B1 * !B2 * !X)	0.00120	0.00119	0.00119
	(!A1 * A2 * B1 * !B2 * !X)	-0.00174	-0.00174	-0.00174
	(!A1 * A2 * !B1 * !X)	0.00120	0.00119	0.00119
	(!A1 * A2 * !B1 * !X)	-0.00174	-0.00174	-0.00174
	(!A1 * !A2 * B1 * !B2 * !X)	0.00125	0.00124	0.00124
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00174	-0.00174	-0.00173
	(!A1 * !A2 * !B1 * !X)	0.00125	0.00124	0.00124
	(!A1 * !A2 * !B1 * !X)	-0.00174	-0.00174	-0.00173

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A2 * B1 * B2 * X)**	-0.00078	-0.00078	-0.00078
	(A1 * A2 * B1 * B2 * X)	0.00078	0.00078	0.00077
	(A1 * !A2 * B1 * !B2 * !X)	-0.00058	-0.00060	-0.00059
	(A1 * !A2 * B1 * !B2 * !X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * !X)	-0.00058	-0.00060	-0.00059
	(A1 * !A2 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A2 * B1 * B2 * X)	-0.00072	-0.00074	-0.00073
	(!A2 * B1 * B2 * X)	0.00081	0.00081	0.00081
	(!A1 * A2 * B1 * B2 * X)	-0.00070	-0.00072	-0.00072
	(!A1 * A2 * B1 * B2 * X)	0.00081	0.00081	0.00081
	(!A1 * A2 * B1 * !B2 * !X)	-0.00056	-0.00058	-0.00057
	(!A1 * A2 * B1 * !B2 * !X)	0.00095	0.00096	0.00095
	(!A1 * A2 * !B1 * !X)	-0.00056	-0.00058	-0.00057
	(!A1 * A2 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00058	-0.00060	-0.00059
	(!A1 * !A2 * B1 * !B2 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A2 * !B1 * !X)	-0.00058	-0.00060	-0.00059
	(!A1 * !A2 * !B1 * !X)	0.00095	0.00096	0.00095

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00089	-0.00089	-0.00088
	(A1 * A2 * B1 * B2 * X)	0.00078	0.00078	0.00077
	(A1 * !A2 * B1 * !B2 * !X)	-0.00068	-0.00070	-0.00069
	(A1 * !A2 * B1 * !B2 * !X)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * !X)	-0.00068	-0.00069	-0.00069
	(A1 * !A2 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A2 * B1 * B2 * X)	-0.00082	-0.00083	-0.00083
	(!A2 * B1 * B2 * X)	0.00081	0.00082	0.00081
	(!A1 * A2 * B1 * B2 * X)	-0.00080	-0.00082	-0.00081
	(!A1 * A2 * B1 * B2 * X)	0.00081	0.00082	0.00081
	(!A1 * A2 * B1 * !B2 * !X)	-0.00066	-0.00068	-0.00067
	(!A1 * A2 * B1 * !B2 * !X)	0.00095	0.00096	0.00095
	(!A1 * A2 * !B1 * !X)	-0.00066	-0.00068	-0.00067
	(!A1 * A2 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00068	-0.00070	-0.00069
	(!A1 * !A2 * B1 * !B2 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A2 * !B1 * !X)	-0.00068	-0.00070	-0.00069
	(!A1 * !A2 * !B1 * !X)	0.00095	0.00096	0.00095

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00134	-0.00134	-0.00133
	(A1 * A2 * B1 * B2 * X)	0.00166	0.00166	0.00165
	(A1 * !A2 * B1 * !B2 * !X)	-0.00122	-0.00125	-0.00124
	(A1 * !A2 * B1 * !B2 * !X)	0.00175	0.00175	0.00174
	(A1 * !A2 * !B1 * !X)	-0.00122	-0.00124	-0.00124
	(A1 * !A2 * !B1 * !X)	0.00175	0.00175	0.00174
	(!A2 * B1 * B2 * X)	-0.00123	-0.00124	-0.00125
	(!A2 * B1 * B2 * X)	0.00174	0.00175	0.00174
	(!A1 * A2 * B1 * B2 * X)	-0.00116	-0.00120	-0.00120
	(!A1 * A2 * B1 * B2 * X)	0.00174	0.00175	0.00174
	(!A1 * A2 * B1 * !B2 * !X)	-0.00116	-0.00119	-0.00119
	(!A1 * A2 * B1 * !B2 * !X)	0.00175	0.00175	0.00174
	(!A1 * A2 * !B1 * !X)	-0.00116	-0.00119	-0.00119
	(!A1 * A2 * !B1 * !X)	0.00175	0.00175	0.00174
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00122	-0.00124	-0.00124
	(!A1 * !A2 * B1 * !B2 * !X)	0.00175	0.00175	0.00174
	(!A1 * !A2 * !B1 * !X)	-0.00122	-0.00124	-0.00124
	(!A1 * !A2 * !B1 * !X)	0.00175	0.00175	0.00174

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A2 * A3 * B2 * X)**	0.00077	0.00077	0.00077
	(A1 * A2 * A3 * B2 * X)	-0.00054	-0.00053	-0.00053
	(A1 * A2 * A3 * !B2 * X)	0.00072	0.00073	0.00072
	(A1 * A2 * A3 * !B2 * X)	-0.00053	-0.00053	-0.00053
	(A1 * A2 * !A3 * !B2 * !X)	0.00027	0.00027	0.00026
	(A1 * A2 * !A3 * !B2 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !A2 * !B2 * !X)	0.00027	0.00027	0.00026
	(A1 * !A2 * !B2 * !X)	-0.00099	-0.00099	-0.00099
	(!A1 * !B2 * !X)	0.00027	0.00027	0.00026
	(!A1 * !B2 * !X)	-0.00099	-0.00099	-0.00099
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00087	0.00086	0.00086
	(A1 * A2 * A3 * B2 * X)	-0.00055	-0.00054	-0.00054
	(A1 * A2 * A3 * !B2 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * A3 * !B2 * X)	-0.00053	-0.00054	-0.00053
	(A1 * A2 * !A3 * !B2 * !X)	0.00033	0.00033	0.00032
	(A1 * A2 * !A3 * !B2 * !X)	-0.00098	-0.00098	-0.00100
	(A1 * !A2 * !B2 * !X)	0.00033	0.00033	0.00032
	(A1 * !A2 * !B2 * !X)	-0.00098	-0.00098	-0.00100
	(!A1 * !B2 * !X)	0.00033	0.00033	0.00032
	(!A1 * !B2 * !X)	-0.00098	-0.00098	-0.00100
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00153	0.00154	0.00153
	(A1 * A2 * A3 * B2 * X)	-0.00107	-0.00108	-0.00107
	(A1 * A2 * A3 * !B2 * X)	0.00142	0.00143	0.00143
	(A1 * A2 * A3 * !B2 * X)	-0.00106	-0.00107	-0.00107
	(A1 * A2 * !A3 * !B2 * !X)	0.00050	0.00050	0.00048
	(A1 * A2 * !A3 * !B2 * !X)	-0.00199	-0.00200	-0.00201
	(A1 * !A2 * !B2 * !X)	0.00050	0.00050	0.00048
	(A1 * !A2 * !B2 * !X)	-0.00199	-0.00200	-0.00201
	(!A1 * !B2 * !X)	0.00050	0.00050	0.00048
	(!A1 * !B2 * !X)	-0.00199	-0.00200	-0.00201

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	(A1 * A2 * A3 * B2 * X)	-0.00067	-0.00068	-0.00076
	(A1 * A2 * A3 * B2 * X)	0.00062	0.00061	0.00055
	(A1 * A2 * A3 * !B2 * X)	-0.00071	-0.00073	-0.00072
	(A1 * A2 * A3 * !B2 * X)	0.00053	0.00053	0.00053
	(A1 * A2 * !A3 * !B2 * !X)	-0.00026	-0.00026	-0.00026
	(A1 * A2 * !A3 * !B2 * !X)	0.00100	0.00100	0.00099
	(A1 * !A2 * !B2 * !X)	-0.00026	-0.00026	-0.00026
	(A1 * !A2 * !B2 * !X)	0.00100	0.00100	0.00099
	(!A1 * !B2 * !X)	-0.00026	-0.00026	-0.00026
	(!A1 * !B2 * !X)	0.00100	0.00100	0.00099
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00076	-0.00077	-0.00085
	(A1 * A2 * A3 * B2 * X)	0.00062	0.00062	0.00055
	(A1 * A2 * A3 * !B2 * X)	-0.00080	-0.00082	-0.00081
	(A1 * A2 * A3 * !B2 * X)	0.00053	0.00054	0.00053
	(A1 * A2 * !A3 * !B2 * !X)	-0.00032	-0.00032	-0.00031
	(A1 * A2 * !A3 * !B2 * !X)	0.00101	0.00100	0.00100
	(A1 * !A2 * !B2 * !X)	-0.00032	-0.00032	-0.00031
	(A1 * !A2 * !B2 * !X)	0.00101	0.00100	0.00100
	(!A1 * !B2 * !X)	-0.00032	-0.00032	-0.00031
	(!A1 * !B2 * !X)	0.00101	0.00100	0.00100

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00133	-0.00135	-0.00152
	(A1 * A2 * A3 * B2 * X)	0.00125	0.00124	0.00111
	(A1 * A2 * A3 * !B2 * X)	-0.00140	-0.00143	-0.00143
	(A1 * A2 * A3 * !B2 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * !A3 * !B2 * !X)	-0.00049	-0.00048	-0.00047
	(A1 * A2 * !A3 * !B2 * !X)	0.00203	0.00202	0.00201
	(A1 * !A2 * !B2 * !X)	-0.00049	-0.00048	-0.00047
	(A1 * !A2 * !B2 * !X)	0.00203	0.00202	0.00201
	(!A1 * !B2 * !X)	-0.00049	-0.00048	-0.00047
	(!A1 * !B2 * !X)	0.00203	0.00202	0.00201

Passive power(pJ) for B2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**(A1 * A2 * A3 * B1 * X)**	0.00075	0.00075	0.00075
	(A1 * A2 * A3 * B1 * X)	-0.00056	-0.00056	-0.00055
	(A1 * A2 * A3 * !B1 * X)	0.00071	0.00072	0.00071
	(A1 * A2 * A3 * !B1 * X)	-0.00055	-0.00055	-0.00055
	(A1 * A2 * !A3 * !B1 * !X)	0.00064	0.00064	0.00064
	(A1 * A2 * !A3 * !B1 * !X)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * !B1 * !X)	0.00064	0.00063	0.00064
	(A1 * !A2 * !B1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1 * !X)	0.00064	0.00064	0.00064
	(!A1 * !B1 * !X)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00088	0.00087	0.00087
	(A1 * A2 * A3 * B1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * A2 * A3 * !B1 * X)	0.00082	0.00083	0.00082
	(A1 * A2 * A3 * !B1 * X)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * !A3 * !B1 * !X)	0.00076	0.00076	0.00076
	(A1 * A2 * !A3 * !B1 * !X)	-0.00084	-0.00084	-0.00084
	(A1 * !A2 * !B1 * !X)	0.00076	0.00076	0.00076
	(A1 * !A2 * !B1 * !X)	-0.00084	-0.00084	-0.00084
	(!A1 * !B1 * !X)	0.00076	0.00076	0.00076
	(!A1 * !B1 * !X)	-0.00084	-0.00084	-0.00084
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00198	0.00200	0.00198
	(A1 * A2 * A3 * B1 * X)	-0.00112	-0.00112	-0.00111
	(A1 * A2 * A3 * !B1 * X)	0.00187	0.00189	0.00187
	(A1 * A2 * A3 * !B1 * X)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * !A3 * !B1 * !X)	0.00161	0.00162	0.00161
	(A1 * A2 * !A3 * !B1 * !X)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !X)	0.00161	0.00163	0.00161
	(A1 * !A2 * !B1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !B1 * !X)	0.00161	0.00162	0.00161
	(!A1 * !B1 * !X)	-0.00178	-0.00179	-0.00178

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a32o_1	**(A1 * A2 * A3 * B1 * X)**	-0.00065	-0.00066	-0.00074
	(A1 * A2 * A3 * B1 * X)	0.00064	0.00063	0.00057
	(A1 * A2 * A3 * !B1 * X)	-0.00070	-0.00071	-0.00071
	(A1 * A2 * A3 * !B1 * X)	0.00055	0.00055	0.00055
	(A1 * A2 * !A3 * !B1 * !X)	-0.00063	-0.00064	-0.00064
	(A1 * A2 * !A3 * !B1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B1 * !X)	-0.00063	-0.00063	-0.00064
	(A1 * !A2 * !B1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !X)	-0.00063	-0.00064	-0.00064
	(!A1 * !B1 * !X)	0.00083	0.00084	0.00083
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00078	-0.00078	-0.00086
	(A1 * A2 * A3 * B1 * X)	0.00065	0.00064	0.00058
	(A1 * A2 * A3 * !B1 * X)	-0.00081	-0.00083	-0.00082
	(A1 * A2 * A3 * !B1 * X)	0.00056	0.00056	0.00056
	(A1 * A2 * !A3 * !B1 * !X)	-0.00075	-0.00076	-0.00076
	(A1 * A2 * !A3 * !B1 * !X)	0.00084	0.00084	0.00084
	(A1 * !A2 * !B1 * !X)	-0.00075	-0.00076	-0.00076
	(A1 * !A2 * !B1 * !X)	0.00084	0.00084	0.00084
	(!A1 * !B1 * !X)	-0.00075	-0.00076	-0.00076
	(!A1 * !B1 * !X)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00177	-0.00179	-0.00196
	(A1 * A2 * A3 * B1 * X)	0.00129	0.00128	0.00115
	(A1 * A2 * A3 * !B1 * X)	-0.00185	-0.00189	-0.00187
	(A1 * A2 * A3 * !B1 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * !A3 * !B1 * !X)	-0.00159	-0.00162	-0.00161
	(A1 * A2 * !A3 * !B1 * !X)	0.00179	0.00179	0.00178
	(A1 * !A2 * !B1 * !X)	-0.00159	-0.00163	-0.00161
	(A1 * !A2 * !B1 * !X)	0.00179	0.00179	0.00178
	(!A1 * !B1 * !X)	-0.00159	-0.00162	-0.00161
	(!A1 * !B1 * !X)	0.00179	0.00179	0.00178

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	Y
0	x	x	x	0	1
x	x	x	x	1	0
1	0	x	x	0	1
1	1	0	x	0	1
1	1	1	0	0	1
1	1	1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41oi_1	11.18880
sky130_fd_sc_hs__a41oi_2	19.18080
sky130_fd_sc_hs__a41oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__a41oi_1	0.00255	0.00255	0.00250	0.00253	0.00264	0.07215
sky130_fd_sc_hs__a41oi_2	0.00493	0.00469	0.00460	0.00458	0.00382	0.14378
sky130_fd_sc_hs__a41oi_4	0.00961	0.00906	0.00914	0.00905	0.00755	0.27361

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.00006	0.00013
sky130_fd_sc_hs__a41oi_2	0.00000	0.00011	0.00024
sky130_fd_sc_hs__a41oi_4	0.00000	0.00021	0.00047

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (FR)	0.64343	2.75602	14.16750
	A2->Y (FR)	0.77993	2.90900	14.38130
	A3->Y (FR)	0.87635	2.99854	14.36710
	A4->Y (FR)	0.94930	3.05198	14.31510
	B1->Y (FR)	0.70688	2.73099	13.72280
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.50193	2.37137	14.22560
	A2->Y (FR)	0.63413	2.49104	14.24080
	A3->Y (FR)	0.73792	2.61111	14.39320
	A4->Y (FR)	0.85260	2.74432	14.52390
	B1->Y (FR)	0.64546	2.44140	13.83560
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.45561	2.10057	13.98970
	A2->Y (FR)	0.59796	2.23692	14.04590
	A3->Y (FR)	0.71923	2.37558	14.26760
	A4->Y (FR)	0.82987	2.51576	14.50490
	B1->Y (FR)	0.63580	2.22497	13.83090

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.11511	0.93330	5.43821
	A2->Y (RF)	0.13683	0.94853	5.47656
	A3->Y (RF)	0.14880	0.92104	5.21020
	A4->Y (RF)	0.15534	0.89482	4.94340
	B1->Y (RF)	0.06346	0.68405	4.22279
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.09515	0.89003	5.70313
	A2->Y (RF)	0.12405	0.91516	5.73199
	A3->Y (RF)	0.13638	0.87503	5.34582
	A4->Y (RF)	0.14561	0.85850	5.08157
	B1->Y (RF)	0.06696	0.76449	5.12612
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.08992	0.83656	5.75701
	A2->Y (RF)	0.12239	0.86609	5.75886
	A3->Y (RF)	0.13739	0.83420	5.38018
	A4->Y (RF)	0.14406	0.80707	5.04641
	B1->Y (RF)	0.06439	0.71148	5.07834

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00025	0.00017	0.00016
	A1	0.00316	0.00308	0.00307
	A2	0.00063	0.00053	0.00052
	A2	0.00387	0.00378	0.00376
	A3	0.00092	0.00083	0.00081
	A3	0.00451	0.00442	0.00426
	A4	0.00110	0.00103	0.00101
	A4	0.00508	0.00500	0.00495
	B1	0.00105	0.00096	0.00094
	B1	0.00459	0.00451	0.00447
sky130_fd_sc_hs__a41oi_2	A1	-0.00029	-0.00040	-0.00040
	A1	0.00493	0.00481	0.00481
	A2	0.00053	0.00034	0.00033
	A2	0.00655	0.00635	0.00633
	A3	0.00108	0.00091	0.00088
	A3	0.00777	0.00759	0.00755
	A4	0.00173	0.00159	0.00155
	A4	0.00921	0.00905	0.00876
	B1	0.00217	0.00209	0.00204
	B1	0.00801	0.00788	0.00784

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00094	-0.00114	-0.00110
	A1	0.00944	0.00922	0.00926
	A2	0.00093	0.00053	0.00052
	A2	0.01287	0.01245	0.01242
	A3	0.00205	0.00166	0.00162
	A3	0.01555	0.01514	0.01506
	A4	0.00310	0.00284	0.00278
	A4	0.01804	0.01776	0.01763
	B1	0.00406	0.00386	0.00379
	B1	0.01567	0.01541	0.01532

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00347	0.00342	0.00336
	A1	0.00066	0.00060	0.00053
	A2	0.00385	0.00380	0.00372
	A2	0.00067	0.00061	0.00054
	A3	0.00422	0.00418	0.00410
	A3	0.00065	0.00060	0.00053
	A4	0.00466	0.00461	0.00453
	A4	0.00065	0.00060	0.00052
	B1	0.00356	0.00354	0.00352
	B1	-0.00011	-0.00013	-0.00015

sky130_fd_sc_hs__a41oi_2	**A1**	0.00598	0.00587	0.00573
	A1	0.00098	0.00084	0.00071
	A2	0.00687	0.00677	0.00659
	A2	0.00098	0.00086	0.00074
	A3	0.00763	0.00752	0.00740
	A3	0.00096	0.00086	0.00072
	A4	0.00852	0.00841	0.00826
	A4	0.00094	0.00083	0.00070
	B1	0.00542	0.00541	0.00541
	B1	-0.00070	-0.00072	-0.00073
sky130_fd_sc_hs__a41oi_4	**A1**	0.01165	0.01140	0.01121
	A1	0.00171	0.00141	0.00120
	A2	0.01340	0.01317	0.01306
	A2	0.00170	0.00146	0.00123
	A3	0.01515	0.01493	0.01461
	A3	0.00166	0.00142	0.00119
	A4	0.01681	0.01660	0.01630
	A4	0.00165	0.00140	0.00117
	B1	0.01077	0.01074	0.01079
	B1	-0.00141	-0.00150	-0.00146

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A2 * A3 * A4 * B1 * !Y)**	0.00081	0.00081	0.00081
	(A2 * A3 * A4 * B1 * !Y)	-0.00089	-0.00090	-0.00089
	(A2 * A3 * !A4 * B1 * !Y)	0.00073	0.00073	0.00073
	(A2 * A3 * !A4 * B1 * !Y)	-0.00094	-0.00093	-0.00094
	(A2 * A3 * !A4 * !B1 * Y)	0.00037	0.00037	0.00033
	(A2 * A3 * !A4 * !B1 * Y)	-0.00104	-0.00105	-0.00112
	(A2 * !A3 * B1 * !Y)	0.00074	0.00075	0.00074
	(A2 * !A3 * B1 * !Y)	-0.00094	-0.00094	-0.00094
	(A2 * !A3 * !B1 * Y)	0.00036	0.00036	0.00033
	(A2 * !A3 * !B1 * Y)	-0.00107	-0.00108	-0.00113
	(!A2 * B1 * !Y)	0.00076	0.00077	0.00077
	(!A2 * B1 * !Y)	-0.00093	-0.00094	-0.00094
	(!A2 * !B1 * Y)	0.00035	0.00035	0.00034
	(!A2 * !B1 * Y)	-0.00111	-0.00112	-0.00113
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00162	0.00162	0.00161
	(A2 * A3 * A4 * B1 * !Y)	-0.00172	-0.00176	-0.00174
	(A2 * A3 * !A4 * B1 * !Y)	0.00143	0.00143	0.00143
	(A2 * A3 * !A4 * B1 * !Y)	-0.00183	-0.00183	-0.00182
	(A2 * A3 * !A4 * !B1 * Y)	0.00069	0.00068	0.00059
	(A2 * A3 * !A4 * !B1 * Y)	-0.00204	-0.00206	-0.00224
	(A2 * !A3 * B1 * !Y)	0.00146	0.00146	0.00146
	(A2 * !A3 * B1 * !Y)	-0.00183	-0.00183	-0.00182
	(A2 * !A3 * !B1 * Y)	0.00065	0.00065	0.00059
	(A2 * !A3 * !B1 * Y)	-0.00213	-0.00215	-0.00226
	(!A2 * B1 * !Y)	0.00152	0.00153	0.00152
	(!A2 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A2 * !B1 * Y)	0.00064	0.00064	0.00061
	(!A2 * !B1 * Y)	-0.00221	-0.00222	-0.00227

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00324	0.00324	0.00323
	(A2 * A3 * A4 * B1 * !Y)	-0.00340	-0.00348	-0.00344
	(A2 * A3 * !A4 * B1 * !Y)	0.00283	0.00284	0.00283
	(A2 * A3 * !A4 * B1 * !Y)	-0.00362	-0.00361	-0.00360
	(A2 * A3 * !A4 * !B1 * Y)	0.00139	0.00138	0.00120
	(A2 * A3 * !A4 * !B1 * Y)	-0.00401	-0.00404	-0.00439
	(A2 * !A3 * B1 * !Y)	0.00291	0.00290	0.00290
	(A2 * !A3 * B1 * !Y)	-0.00363	-0.00361	-0.00360
	(A2 * !A3 * !B1 * Y)	0.00132	0.00131	0.00120
	(A2 * !A3 * !B1 * Y)	-0.00417	-0.00420	-0.00442
	(!A2 * B1 * !Y)	0.00303	0.00305	0.00304
	(!A2 * B1 * !Y)	-0.00360	-0.00362	-0.00360
	(!A2 * !B1 * Y)	0.00134	0.00134	0.00127
	(!A2 * !B1 * Y)	-0.00432	-0.00434	-0.00445

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A2 * A3 * A4 * B1 * !Y)**	-0.00081	-0.00081	-0.00081
	(A2 * A3 * A4 * B1 * !Y)	0.00090	0.00090	0.00089
	(A2 * A3 * !A4 * B1 * !Y)	-0.00070	-0.00073	-0.00073
	(A2 * A3 * !A4 * B1 * !Y)	0.00094	0.00095	0.00094
	(A2 * A3 * !A4 * !B1 * Y)	-0.00033	-0.00033	-0.00032
	(A2 * A3 * !A4 * !B1 * Y)	0.00114	0.00114	0.00113
	(A2 * !A3 * B1 * !Y)	-0.00072	-0.00075	-0.00074
	(A2 * !A3 * B1 * !Y)	0.00094	0.00095	0.00094
	(A2 * !A3 * !B1 * Y)	-0.00033	-0.00033	-0.00032
	(A2 * !A3 * !B1 * Y)	0.00114	0.00114	0.00113
	(!A2 * B1 * !Y)	-0.00076	-0.00077	-0.00077
	(!A2 * B1 * !Y)	0.00095	0.00095	0.00094
	(!A2 * !B1 * Y)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * Y)	0.00114	0.00114	0.00113
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00161	-0.00162	-0.00161
	(A2 * A3 * A4 * B1 * !Y)	0.00174	0.00176	0.00174
	(A2 * A3 * !A4 * B1 * !Y)	-0.00135	-0.00143	-0.00143
	(A2 * A3 * !A4 * B1 * !Y)	0.00183	0.00183	0.00183
	(A2 * A3 * !A4 * !B1 * Y)	-0.00058	-0.00058	-0.00057
	(A2 * A3 * !A4 * !B1 * Y)	0.00227	0.00230	0.00227
	(A2 * !A3 * B1 * !Y)	-0.00140	-0.00146	-0.00146
	(A2 * !A3 * B1 * !Y)	0.00183	0.00183	0.00183
	(A2 * !A3 * !B1 * Y)	-0.00058	-0.00058	-0.00058
	(A2 * !A3 * !B1 * Y)	0.00228	0.00230	0.00227
	(!A2 * B1 * !Y)	-0.00148	-0.00153	-0.00152
	(!A2 * B1 * !Y)	0.00182	0.00184	0.00183
	(!A2 * !B1 * Y)	-0.00059	-0.00060	-0.00059
	(!A2 * !B1 * Y)	0.00228	0.00230	0.00227

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00323	-0.00324	-0.00323
	(A2 * A3 * A4 * B1 * !Y)	0.00344	0.00348	0.00344
	(A2 * A3 * !A4 * B1 * !Y)	-0.00267	-0.00284	-0.00283
	(A2 * A3 * !A4 * B1 * !Y)	0.00362	0.00361	0.00362
	(A2 * A3 * !A4 * !B1 * Y)	-0.00119	-0.00120	-0.00119
	(A2 * A3 * !A4 * !B1 * Y)	0.00445	0.00450	0.00445
	(A2 * !A3 * B1 * !Y)	-0.00276	-0.00290	-0.00290
	(A2 * !A3 * B1 * !Y)	0.00365	0.00363	0.00362
	(A2 * !A3 * !B1 * Y)	-0.00120	-0.00121	-0.00120
	(A2 * !A3 * !B1 * Y)	0.00445	0.00450	0.00445
	(!A2 * B1 * !Y)	-0.00299	-0.00305	-0.00304
	(!A2 * B1 * !Y)	0.00364	0.00363	0.00361
	(!A2 * !B1 * Y)	-0.00124	-0.00125	-0.00123
	(!A2 * !B1 * Y)	0.00445	0.00450	0.00445

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A3 * A4 * B1 * !Y)**	0.00078	0.00078	0.00078
	(A1 * A3 * A4 * B1 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * A3 * !A4 * B1 * !Y)	0.00070	0.00071	0.00070
	(A1 * A3 * !A4 * B1 * !Y)	-0.00094	-0.00094	-0.00094
	(A1 * A3 * !A4 * !B1 * Y)	0.00036	0.00037	0.00037
	(A1 * A3 * !A4 * !B1 * Y)	-0.00098	-0.00099	-0.00098
	(A1 * !A3 * B1 * !Y)	0.00073	0.00073	0.00073
	(A1 * !A3 * B1 * !Y)	-0.00094	-0.00094	-0.00094
	(A1 * !A3 * !B1 * Y)	0.00038	0.00039	0.00039
	(A1 * !A3 * !B1 * Y)	-0.00098	-0.00099	-0.00098
	(!A1 * A3 * A4 * B1 * !Y)	0.00073	0.00074	0.00073
	(!A1 * A3 * A4 * B1 * !Y)	-0.00094	-0.00094	-0.00094
	(!A1 * A3 * A4 * !B1 * Y)	0.00068	0.00069	0.00068
	(!A1 * A3 * A4 * !B1 * Y)	-0.00098	-0.00099	-0.00099
	(!A1 * A3 * !A4 * B1 * !Y)	0.00049	0.00049	0.00049
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00094	-0.00094	-0.00094
	(!A1 * A3 * !A4 * !B1 * Y)	0.00042	0.00042	0.00042
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00099	-0.00099	-0.00099
	(!A1 * !A3 * B1 * !Y)	0.00051	0.00051	0.00050
	(!A1 * !A3 * B1 * !Y)	-0.00094	-0.00094	-0.00094
	(!A1 * !A3 * !B1 * Y)	0.00041	0.00042	0.00041
	(!A1 * !A3 * !B1 * Y)	-0.00099	-0.00099	-0.00099

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00158	0.00158	0.00157
	(A1 * A3 * A4 * B1 * !Y)	-0.00176	-0.00180	-0.00177
	(A1 * A3 * !A4 * B1 * !Y)	0.00141	0.00141	0.00141
	(A1 * A3 * !A4 * B1 * !Y)	-0.00187	-0.00187	-0.00186
	(A1 * A3 * !A4 * !B1 * Y)	0.00079	0.00080	0.00081
	(A1 * A3 * !A4 * !B1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * !A3 * B1 * !Y)	0.00146	0.00147	0.00147
	(A1 * !A3 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(A1 * !A3 * !B1 * Y)	0.00083	0.00084	0.00084
	(A1 * !A3 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(!A1 * A3 * A4 * B1 * !Y)	0.00147	0.00148	0.00147
	(!A1 * A3 * A4 * B1 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * A3 * A4 * !B1 * Y)	0.00144	0.00145	0.00144
	(!A1 * A3 * A4 * !B1 * Y)	-0.00189	-0.00190	-0.00189
	(!A1 * A3 * !A4 * B1 * !Y)	0.00099	0.00099	0.00098
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00187	-0.00187	-0.00186
	(!A1 * A3 * !A4 * !B1 * Y)	0.00090	0.00091	0.00090
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00190	-0.00191	-0.00190
	(!A1 * !A3 * B1 * !Y)	0.00101	0.00101	0.00100
	(!A1 * !A3 * B1 * !Y)	-0.00187	-0.00187	-0.00186
	(!A1 * !A3 * !B1 * Y)	0.00089	0.00089	0.00089
	(!A1 * !A3 * !B1 * Y)	-0.00190	-0.00191	-0.00190

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00312	0.00312	0.00310
	(A1 * A3 * A4 * B1 * !Y)	-0.00349	-0.00355	-0.00351
	(A1 * A3 * !A4 * B1 * !Y)	0.00273	0.00273	0.00272
	(A1 * A3 * !A4 * B1 * !Y)	-0.00370	-0.00371	-0.00370
	(A1 * A3 * !A4 * !B1 * Y)	0.00152	0.00154	0.00157
	(A1 * A3 * !A4 * !B1 * Y)	-0.00371	-0.00372	-0.00369
	(A1 * !A3 * B1 * !Y)	0.00283	0.00285	0.00284
	(A1 * !A3 * B1 * !Y)	-0.00370	-0.00371	-0.00370
	(A1 * !A3 * !B1 * Y)	0.00158	0.00159	0.00160
	(A1 * !A3 * !B1 * Y)	-0.00372	-0.00374	-0.00372
	(!A1 * A3 * A4 * B1 * !Y)	0.00291	0.00292	0.00291
	(!A1 * A3 * A4 * B1 * !Y)	-0.00370	-0.00371	-0.00370
	(!A1 * A3 * A4 * !B1 * Y)	0.00288	0.00290	0.00288
	(!A1 * A3 * A4 * !B1 * Y)	-0.00373	-0.00374	-0.00372
	(!A1 * A3 * !A4 * B1 * !Y)	0.00188	0.00189	0.00187
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00370	-0.00372	-0.00370
	(!A1 * A3 * !A4 * !B1 * Y)	0.00175	0.00176	0.00175
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00373	-0.00375	-0.00373
	(!A1 * !A3 * B1 * !Y)	0.00189	0.00189	0.00188
	(!A1 * !A3 * B1 * !Y)	-0.00370	-0.00372	-0.00370
	(!A1 * !A3 * !B1 * Y)	0.00169	0.00170	0.00169
	(!A1 * !A3 * !B1 * Y)	-0.00373	-0.00375	-0.00373

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A3 * A4 * B1 * !Y)**	-0.00077	-0.00078	-0.00078
	(A1 * A3 * A4 * B1 * !Y)	0.00089	0.00090	0.00089
	(A1 * A3 * !A4 * B1 * !Y)	-0.00067	-0.00071	-0.00070
	(A1 * A3 * !A4 * B1 * !Y)	0.00094	0.00095	0.00094
	(A1 * A3 * !A4 * !B1 * Y)	-0.00036	-0.00036	-0.00037
	(A1 * A3 * !A4 * !B1 * Y)	0.00102	0.00101	0.00099
	(A1 * !A3 * B1 * !Y)	-0.00072	-0.00073	-0.00073
	(A1 * !A3 * B1 * !Y)	0.00095	0.00094	0.00094
	(A1 * !A3 * !B1 * Y)	-0.00037	-0.00037	-0.00037
	(A1 * !A3 * !B1 * Y)	0.00102	0.00101	0.00099
	(!A1 * A3 * A4 * B1 * !Y)	-0.00072	-0.00074	-0.00073
	(!A1 * A3 * A4 * B1 * !Y)	0.00095	0.00095	0.00094
	(!A1 * A3 * A4 * !B1 * Y)	-0.00067	-0.00069	-0.00068
	(!A1 * A3 * A4 * !B1 * Y)	0.00099	0.00100	0.00099
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00049	-0.00049	-0.00049
	(!A1 * A3 * !A4 * B1 * !Y)	0.00094	0.00094	0.00094
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00042	-0.00042	-0.00042
	(!A1 * A3 * !A4 * !B1 * Y)	0.00099	0.00100	0.00099
	(!A1 * !A3 * B1 * !Y)	-0.00051	-0.00051	-0.00050
	(!A1 * !A3 * B1 * !Y)	0.00095	0.00094	0.00094
	(!A1 * !A3 * !B1 * Y)	-0.00041	-0.00042	-0.00041
	(!A1 * !A3 * !B1 * Y)	0.00099	0.00100	0.00099

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00157	-0.00158	-0.00157
	(A1 * A3 * A4 * B1 * !Y)	0.00177	0.00180	0.00177
	(A1 * A3 * !A4 * B1 * !Y)	-0.00134	-0.00141	-0.00141
	(A1 * A3 * !A4 * B1 * !Y)	0.00187	0.00187	0.00187
	(A1 * A3 * !A4 * !B1 * Y)	-0.00077	-0.00077	-0.00078
	(A1 * A3 * !A4 * !B1 * Y)	0.00197	0.00196	0.00191
	(A1 * !A3 * B1 * !Y)	-0.00144	-0.00147	-0.00147
	(A1 * !A3 * B1 * !Y)	0.00187	0.00188	0.00187
	(A1 * !A3 * !B1 * Y)	-0.00079	-0.00079	-0.00081
	(A1 * !A3 * !B1 * Y)	0.00197	0.00196	0.00191
	(!A1 * A3 * A4 * B1 * !Y)	-0.00145	-0.00148	-0.00147
	(!A1 * A3 * A4 * B1 * !Y)	0.00188	0.00188	0.00187
	(!A1 * A3 * A4 * !B1 * Y)	-0.00142	-0.00145	-0.00144
	(!A1 * A3 * A4 * !B1 * Y)	0.00191	0.00190	0.00190
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00099	-0.00099	-0.00098
	(!A1 * A3 * !A4 * B1 * !Y)	0.00189	0.00188	0.00187
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00090	-0.00091	-0.00090
	(!A1 * A3 * !A4 * !B1 * Y)	0.00191	0.00191	0.00190
	(!A1 * !A3 * B1 * !Y)	-0.00101	-0.00101	-0.00100
	(!A1 * !A3 * B1 * !Y)	0.00189	0.00188	0.00187
	(!A1 * !A3 * !B1 * Y)	-0.00089	-0.00089	-0.00089
	(!A1 * !A3 * !B1 * Y)	0.00191	0.00192	0.00191

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00310	-0.00312	-0.00310
	(A1 * A3 * A4 * B1 * !Y)	0.00351	0.00355	0.00351
	(A1 * A3 * !A4 * B1 * !Y)	-0.00258	-0.00273	-0.00272
	(A1 * A3 * !A4 * B1 * !Y)	0.00370	0.00372	0.00371
	(A1 * A3 * !A4 * !B1 * Y)	-0.00148	-0.00148	-0.00151
	(A1 * A3 * !A4 * !B1 * Y)	0.00387	0.00384	0.00375
	(A1 * !A3 * B1 * !Y)	-0.00276	-0.00285	-0.00284
	(A1 * !A3 * B1 * !Y)	0.00370	0.00372	0.00371
	(A1 * !A3 * !B1 * Y)	-0.00151	-0.00151	-0.00154
	(A1 * !A3 * !B1 * Y)	0.00387	0.00384	0.00375
	(!A1 * A3 * A4 * B1 * !Y)	-0.00285	-0.00292	-0.00291
	(!A1 * A3 * A4 * B1 * !Y)	0.00371	0.00373	0.00371
	(!A1 * A3 * A4 * !B1 * Y)	-0.00282	-0.00290	-0.00288
	(!A1 * A3 * A4 * !B1 * Y)	0.00374	0.00376	0.00373
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00188	-0.00189	-0.00187
	(!A1 * A3 * !A4 * B1 * !Y)	0.00376	0.00373	0.00371
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00175	-0.00176	-0.00175
	(!A1 * A3 * !A4 * !B1 * Y)	0.00375	0.00376	0.00374
	(!A1 * !A3 * B1 * !Y)	-0.00189	-0.00189	-0.00188
	(!A1 * !A3 * B1 * !Y)	0.00375	0.00373	0.00371
	(!A1 * !A3 * !B1 * Y)	-0.00169	-0.00170	-0.00169
	(!A1 * !A3 * !B1 * Y)	0.00374	0.00377	0.00375

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A2 * A4 * B1 * !Y)**	0.00076	0.00077	0.00076
	(A1 * A2 * A4 * B1 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * A2 * !A4 * B1 * !Y)	0.00071	0.00071	0.00071
	(A1 * A2 * !A4 * B1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !A4 * !B1 * Y)	0.00037	0.00037	0.00037
	(A1 * A2 * !A4 * !B1 * Y)	-0.00097	-0.00098	-0.00097
	(A1 * !A2 * A4 * !B1 * Y)	0.00068	0.00069	0.00068
	(A1 * !A2 * A4 * !B1 * Y)	-0.00097	-0.00097	-0.00097
	(A1 * !A2 * !A4 * !B1 * Y)	0.00041	0.00041	0.00041
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00097	-0.00098	-0.00097
	(!A2 * A4 * B1 * !Y)	0.00071	0.00072	0.00072
	(!A2 * A4 * B1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A2 * !A4 * B1 * !Y)	0.00047	0.00047	0.00047
	(!A2 * !A4 * B1 * !Y)	-0.00094	-0.00094	-0.00093
	(!A1 * A2 * A4 * B1 * !Y)	0.00070	0.00070	0.00070
	(!A1 * A2 * A4 * B1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * A2 * A4 * !B1 * Y)	0.00066	0.00066	0.00066
	(!A1 * A2 * A4 * !B1 * Y)	-0.00097	-0.00097	-0.00097
	(!A1 * A2 * !A4 * B1 * !Y)	0.00047	0.00047	0.00047
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00094	-0.00093	-0.00093
	(!A1 * A2 * !A4 * !B1 * Y)	0.00040	0.00041	0.00040
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00097	-0.00098	-0.00097
	(!A1 * !A2 * A4 * !B1 * Y)	0.00068	0.00069	0.00068
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00097	-0.00097	-0.00097
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00042	0.00042	0.00042
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00098	-0.00098	-0.00097

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00155	0.00155	0.00154
	(A1 * A2 * A4 * B1 * !Y)	-0.00175	-0.00179	-0.00176
	(A1 * A2 * !A4 * B1 * !Y)	0.00141	0.00143	0.00142
	(A1 * A2 * !A4 * B1 * !Y)	-0.00185	-0.00186	-0.00185
	(A1 * A2 * !A4 * !B1 * Y)	0.00081	0.00080	0.00081
	(A1 * A2 * !A4 * !B1 * Y)	-0.00185	-0.00185	-0.00185
	(A1 * !A2 * A4 * !B1 * Y)	0.00143	0.00145	0.00144
	(A1 * !A2 * A4 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(A1 * !A2 * !A4 * !B1 * Y)	0.00088	0.00089	0.00088
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(!A2 * A4 * B1 * !Y)	0.00144	0.00145	0.00144
	(!A2 * A4 * B1 * !Y)	-0.00185	-0.00186	-0.00185
	(!A2 * !A4 * B1 * !Y)	0.00093	0.00094	0.00094
	(!A2 * !A4 * B1 * !Y)	-0.00184	-0.00185	-0.00185
	(!A1 * A2 * A4 * B1 * !Y)	0.00140	0.00140	0.00140
	(!A1 * A2 * A4 * B1 * !Y)	-0.00186	-0.00186	-0.00185
	(!A1 * A2 * A4 * !B1 * Y)	0.00139	0.00140	0.00139
	(!A1 * A2 * A4 * !B1 * Y)	-0.00186	-0.00186	-0.00186
	(!A1 * A2 * !A4 * B1 * !Y)	0.00094	0.00094	0.00094
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00184	-0.00185	-0.00185
	(!A1 * A2 * !A4 * !B1 * Y)	0.00088	0.00088	0.00087
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00186	-0.00187	-0.00186
	(!A1 * !A2 * A4 * !B1 * Y)	0.00143	0.00145	0.00144
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00185	-0.00186	-0.00185
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00091	0.00092	0.00091
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00185	-0.00186	-0.00185

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00308	0.00308	0.00306
	(A1 * A2 * A4 * B1 * !Y)	-0.00352	-0.00360	-0.00355
	(A1 * A2 * !A4 * B1 * !Y)	0.00283	0.00285	0.00284
	(A1 * A2 * !A4 * B1 * !Y)	-0.00373	-0.00376	-0.00374
	(A1 * A2 * !A4 * !B1 * Y)	0.00153	0.00154	0.00153
	(A1 * A2 * !A4 * !B1 * Y)	-0.00374	-0.00376	-0.00374
	(A1 * !A2 * A4 * !B1 * Y)	0.00280	0.00283	0.00280
	(A1 * !A2 * A4 * !B1 * Y)	-0.00374	-0.00374	-0.00374
	(A1 * !A2 * !A4 * !B1 * Y)	0.00167	0.00168	0.00167
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00374	-0.00376	-0.00374
	(!A2 * A4 * B1 * !Y)	0.00279	0.00282	0.00281
	(!A2 * A4 * B1 * !Y)	-0.00372	-0.00374	-0.00374
	(!A2 * !A4 * B1 * !Y)	0.00176	0.00179	0.00177
	(!A2 * !A4 * B1 * !Y)	-0.00372	-0.00376	-0.00374
	(!A1 * A2 * A4 * B1 * !Y)	0.00274	0.00274	0.00273
	(!A1 * A2 * A4 * B1 * !Y)	-0.00375	-0.00376	-0.00374
	(!A1 * A2 * A4 * !B1 * Y)	0.00273	0.00274	0.00273
	(!A1 * A2 * A4 * !B1 * Y)	-0.00375	-0.00376	-0.00375
	(!A1 * A2 * !A4 * B1 * !Y)	0.00183	0.00183	0.00182
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00375	-0.00376	-0.00374
	(!A1 * A2 * !A4 * !B1 * Y)	0.00169	0.00171	0.00170
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00375	-0.00378	-0.00375
	(!A1 * !A2 * A4 * !B1 * Y)	0.00280	0.00282	0.00280
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00374	-0.00374	-0.00374
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00172	0.00173	0.00172
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00374	-0.00376	-0.00374

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A2 * A4 * B1 * !Y)**	-0.00076	-0.00076	-0.00076
	(A1 * A2 * A4 * B1 * !Y)	0.00090	0.00090	0.00089
	(A1 * A2 * !A4 * B1 * !Y)	-0.00070	-0.00071	-0.00071
	(A1 * A2 * !A4 * B1 * !Y)	0.00094	0.00094	0.00094
	(A1 * A2 * !A4 * !B1 * Y)	-0.00036	-0.00037	-0.00036
	(A1 * A2 * !A4 * !B1 * Y)	0.00097	0.00098	0.00097
	(A1 * !A2 * A4 * !B1 * Y)	-0.00067	-0.00069	-0.00068
	(A1 * !A2 * A4 * !B1 * Y)	0.00097	0.00098	0.00097
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00041	-0.00041	-0.00041
	(A1 * !A2 * !A4 * !B1 * Y)	0.00097	0.00098	0.00098
	(!A2 * A4 * B1 * !Y)	-0.00071	-0.00072	-0.00072
	(!A2 * A4 * B1 * !Y)	0.00094	0.00095	0.00094
	(!A2 * !A4 * B1 * !Y)	-0.00047	-0.00047	-0.00047
	(!A2 * !A4 * B1 * !Y)	0.00095	0.00094	0.00094
	(!A1 * A2 * A4 * B1 * !Y)	-0.00067	-0.00070	-0.00070
	(!A1 * A2 * A4 * B1 * !Y)	0.00094	0.00095	0.00094
	(!A1 * A2 * A4 * !B1 * Y)	-0.00064	-0.00066	-0.00066
	(!A1 * A2 * A4 * !B1 * Y)	0.00098	0.00098	0.00097
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00047	-0.00047	-0.00047
	(!A1 * A2 * !A4 * B1 * !Y)	0.00095	0.00094	0.00094
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00040	-0.00041	-0.00040
	(!A1 * A2 * !A4 * !B1 * Y)	0.00098	0.00098	0.00097
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00067	-0.00069	-0.00068
	(!A1 * !A2 * A4 * !B1 * Y)	0.00097	0.00098	0.00097
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00099	0.00098	0.00098

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00154	-0.00155	-0.00154
	(A1 * A2 * A4 * B1 * !Y)	0.00176	0.00179	0.00176
	(A1 * A2 * !A4 * B1 * !Y)	-0.00138	-0.00143	-0.00142
	(A1 * A2 * !A4 * B1 * !Y)	0.00185	0.00186	0.00186
	(A1 * A2 * !A4 * !B1 * Y)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !A4 * !B1 * Y)	0.00186	0.00187	0.00186
	(A1 * !A2 * A4 * !B1 * Y)	-0.00141	-0.00145	-0.00144
	(A1 * !A2 * A4 * !B1 * Y)	0.00185	0.00188	0.00186
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00088	-0.00089	-0.00088
	(A1 * !A2 * !A4 * !B1 * Y)	0.00186	0.00187	0.00186
	(!A2 * A4 * B1 * !Y)	-0.00141	-0.00145	-0.00144
	(!A2 * A4 * B1 * !Y)	0.00185	0.00188	0.00186
	(!A2 * !A4 * B1 * !Y)	-0.00093	-0.00094	-0.00094
	(!A2 * !A4 * B1 * !Y)	0.00185	0.00187	0.00186
	(!A1 * A2 * A4 * B1 * !Y)	-0.00135	-0.00140	-0.00140
	(!A1 * A2 * A4 * B1 * !Y)	0.00187	0.00187	0.00186
	(!A1 * A2 * A4 * !B1 * Y)	-0.00134	-0.00140	-0.00139
	(!A1 * A2 * A4 * !B1 * Y)	0.00187	0.00188	0.00186
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00094	-0.00094	-0.00094
	(!A1 * A2 * !A4 * B1 * !Y)	0.00188	0.00187	0.00186
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00088	-0.00088	-0.00087
	(!A1 * A2 * !A4 * !B1 * Y)	0.00187	0.00189	0.00187
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00141	-0.00145	-0.00144
	(!A1 * !A2 * A4 * !B1 * Y)	0.00185	0.00188	0.00186
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00091	-0.00092	-0.00091
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00185	0.00187	0.00186

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00306	-0.00308	-0.00306
	(A1 * A2 * A4 * B1 * !Y)	0.00355	0.00360	0.00355
	(A1 * A2 * !A4 * B1 * !Y)	-0.00277	-0.00285	-0.00284
	(A1 * A2 * !A4 * B1 * !Y)	0.00376	0.00377	0.00375
	(A1 * A2 * !A4 * !B1 * Y)	-0.00151	-0.00151	-0.00149
	(A1 * A2 * !A4 * !B1 * Y)	0.00381	0.00378	0.00376
	(A1 * !A2 * A4 * !B1 * Y)	-0.00274	-0.00283	-0.00280
	(A1 * !A2 * A4 * !B1 * Y)	0.00375	0.00374	0.00375
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * !A4 * !B1 * Y)	0.00374	0.00377	0.00375
	(!A2 * A4 * B1 * !Y)	-0.00274	-0.00282	-0.00281
	(!A2 * A4 * B1 * !Y)	0.00375	0.00374	0.00375
	(!A2 * !A4 * B1 * !Y)	-0.00176	-0.00179	-0.00177
	(!A2 * !A4 * B1 * !Y)	0.00380	0.00378	0.00375
	(!A1 * A2 * A4 * B1 * !Y)	-0.00262	-0.00274	-0.00273
	(!A1 * A2 * A4 * B1 * !Y)	0.00377	0.00379	0.00375
	(!A1 * A2 * A4 * !B1 * Y)	-0.00262	-0.00274	-0.00273
	(!A1 * A2 * A4 * !B1 * Y)	0.00378	0.00379	0.00376
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00183	-0.00183	-0.00182
	(!A1 * A2 * !A4 * B1 * !Y)	0.00381	0.00378	0.00375
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00169	-0.00171	-0.00170
	(!A1 * A2 * !A4 * !B1 * Y)	0.00380	0.00381	0.00376
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00274	-0.00282	-0.00280
	(!A1 * !A2 * A4 * !B1 * Y)	0.00375	0.00374	0.00375
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00172	-0.00173	-0.00172
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00380	0.00378	0.00375

Passive power(pJ) for A4 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A2 * A3 * B1 * !Y)**	0.00082	0.00082	0.00082
	(A1 * A2 * A3 * B1 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * A2 * !A3 * !B1 * Y)	0.00070	0.00070	0.00069
	(A1 * A2 * !A3 * !B1 * Y)	-0.00101	-0.00101	-0.00100
	(A1 * !A2 * A3 * !B1 * Y)	0.00068	0.00068	0.00067
	(A1 * !A2 * A3 * !B1 * Y)	-0.00101	-0.00101	-0.00100
	(A1 * !A2 * !A3 * !B1 * Y)	0.00069	0.00070	0.00069
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(!A3 * B1 * !Y)	0.00076	0.00077	0.00077
	(!A3 * B1 * !Y)	-0.00092	-0.00094	-0.00093
	(!A2 * A3 * B1 * !Y)	0.00075	0.00075	0.00075
	(!A2 * A3 * B1 * !Y)	-0.00093	-0.00093	-0.00093
	(!A1 * A2 * A3 * B1 * !Y)	0.00074	0.00075	0.00074
	(!A1 * A2 * A3 * B1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * A2 * A3 * !B1 * Y)	0.00067	0.00067	0.00067
	(!A1 * A2 * A3 * !B1 * Y)	-0.00101	-0.00101	-0.00100
	(!A1 * !A3 * !B1 * Y)	0.00069	0.00070	0.00069
	(!A1 * !A3 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(!A1 * !A2 * A3 * !B1 * Y)	0.00068	0.00067	0.00067
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00101	-0.00100	-0.00100

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00156	0.00156	0.00155
	(A1 * A2 * A3 * B1 * !Y)	-0.00176	-0.00178	-0.00177
	(A1 * A2 * !A3 * !B1 * Y)	0.00144	0.00144	0.00144
	(A1 * A2 * !A3 * !B1 * Y)	-0.00186	-0.00186	-0.00186
	(A1 * !A2 * A3 * !B1 * Y)	0.00139	0.00140	0.00139
	(A1 * !A2 * A3 * !B1 * Y)	-0.00186	-0.00186	-0.00186
	(A1 * !A2 * !A3 * !B1 * Y)	0.00144	0.00145	0.00144
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00186	-0.00187	-0.00186
	(!A3 * B1 * !Y)	0.00145	0.00145	0.00144
	(!A3 * B1 * !Y)	-0.00186	-0.00186	-0.00186
	(!A2 * A3 * B1 * !Y)	0.00140	0.00140	0.00139
	(!A2 * A3 * B1 * !Y)	-0.00186	-0.00186	-0.00186
	(!A1 * A2 * A3 * B1 * !Y)	0.00138	0.00138	0.00138
	(!A1 * A2 * A3 * B1 * !Y)	-0.00186	-0.00186	-0.00186
	(!A1 * A2 * A3 * !B1 * Y)	0.00137	0.00139	0.00138
	(!A1 * A2 * A3 * !B1 * Y)	-0.00186	-0.00187	-0.00186
	(!A1 * !A3 * !B1 * Y)	0.00144	0.00145	0.00144
	(!A1 * !A3 * !B1 * Y)	-0.00186	-0.00187	-0.00186
	(!A1 * !A2 * A3 * !B1 * Y)	0.00139	0.00140	0.00139
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00185	-0.00186	-0.00186

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00310	0.00309	0.00307
	(A1 * A2 * A3 * B1 * !Y)	-0.00350	-0.00355	-0.00353
	(A1 * A2 * !A3 * !B1 * Y)	0.00286	0.00286	0.00284
	(A1 * A2 * !A3 * !B1 * Y)	-0.00370	-0.00373	-0.00371
	(A1 * !A2 * A3 * !B1 * Y)	0.00275	0.00275	0.00274
	(A1 * !A2 * A3 * !B1 * Y)	-0.00369	-0.00373	-0.00371
	(A1 * !A2 * !A3 * !B1 * Y)	0.00286	0.00287	0.00284
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00370	-0.00373	-0.00371
	(!A3 * B1 * !Y)	0.00285	0.00287	0.00285
	(!A3 * B1 * !Y)	-0.00370	-0.00373	-0.00371
	(!A2 * A3 * B1 * !Y)	0.00276	0.00276	0.00274
	(!A2 * A3 * B1 * !Y)	-0.00369	-0.00373	-0.00371
	(!A1 * A2 * A3 * B1 * !Y)	0.00272	0.00272	0.00272
	(!A1 * A2 * A3 * B1 * !Y)	-0.00371	-0.00371	-0.00371
	(!A1 * A2 * A3 * !B1 * Y)	0.00272	0.00274	0.00271
	(!A1 * A2 * A3 * !B1 * Y)	-0.00373	-0.00374	-0.00372
	(!A1 * !A3 * !B1 * Y)	0.00286	0.00287	0.00284
	(!A1 * !A3 * !B1 * Y)	-0.00370	-0.00373	-0.00371
	(!A1 * !A2 * A3 * !B1 * Y)	0.00275	0.00276	0.00274
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00369	-0.00373	-0.00371

Passive power(pJ) for A4 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41oi_1	**(A1 * A2 * A3 * B1 * !Y)**	-0.00082	-0.00082	-0.00082
	(A1 * A2 * A3 * B1 * !Y)	0.00089	0.00090	0.00089
	(A1 * A2 * !A3 * !B1 * Y)	-0.00068	-0.00070	-0.00069
	(A1 * A2 * !A3 * !B1 * Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * A3 * !B1 * Y)	-0.00066	-0.00068	-0.00067
	(A1 * !A2 * A3 * !B1 * Y)	0.00102	0.00101	0.00101
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00068	-0.00070	-0.00069
	(A1 * !A2 * !A3 * !B1 * Y)	0.00101	0.00102	0.00101
	(!A3 * B1 * !Y)	-0.00075	-0.00077	-0.00077
	(!A3 * B1 * !Y)	0.00093	0.00094	0.00093
	(!A2 * A3 * B1 * !Y)	-0.00073	-0.00075	-0.00075
	(!A2 * A3 * B1 * !Y)	0.00094	0.00094	0.00093
	(!A1 * A2 * A3 * B1 * !Y)	-0.00073	-0.00075	-0.00074
	(!A1 * A2 * A3 * B1 * !Y)	0.00094	0.00094	0.00093
	(!A1 * A2 * A3 * !B1 * Y)	-0.00065	-0.00067	-0.00067
	(!A1 * A2 * A3 * !B1 * Y)	0.00101	0.00101	0.00101
	(!A1 * !A3 * !B1 * Y)	-0.00068	-0.00070	-0.00069
	(!A1 * !A3 * !B1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00066	-0.00067	-0.00067
	(!A1 * !A2 * A3 * !B1 * Y)	0.00101	0.00101	0.00101

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00155	-0.00155	-0.00155
	(A1 * A2 * A3 * B1 * !Y)	0.00178	0.00178	0.00177
	(A1 * A2 * !A3 * !B1 * Y)	-0.00141	-0.00144	-0.00144
	(A1 * A2 * !A3 * !B1 * Y)	0.00187	0.00188	0.00186
	(A1 * !A2 * A3 * !B1 * Y)	-0.00135	-0.00140	-0.00139
	(A1 * !A2 * A3 * !B1 * Y)	0.00187	0.00188	0.00186
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00141	-0.00145	-0.00144
	(A1 * !A2 * !A3 * !B1 * Y)	0.00187	0.00188	0.00186
	(!A3 * B1 * !Y)	-0.00142	-0.00145	-0.00144
	(!A3 * B1 * !Y)	0.00187	0.00188	0.00186
	(!A2 * A3 * B1 * !Y)	-0.00135	-0.00140	-0.00139
	(!A2 * A3 * B1 * !Y)	0.00187	0.00188	0.00186
	(!A1 * A2 * A3 * B1 * !Y)	-0.00133	-0.00138	-0.00138
	(!A1 * A2 * A3 * B1 * !Y)	0.00186	0.00188	0.00186
	(!A1 * A2 * A3 * !B1 * Y)	-0.00132	-0.00139	-0.00138
	(!A1 * A2 * A3 * !B1 * Y)	0.00187	0.00188	0.00186
	(!A1 * !A3 * !B1 * Y)	-0.00141	-0.00145	-0.00144
	(!A1 * !A3 * !B1 * Y)	0.00187	0.00188	0.00186
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00135	-0.00140	-0.00139
	(!A1 * !A2 * A3 * !B1 * Y)	0.00187	0.00188	0.00186

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00308	-0.00308	-0.00307
	(A1 * A2 * A3 * B1 * !Y)	0.00355	0.00355	0.00353
	(A1 * A2 * !A3 * !B1 * Y)	-0.00278	-0.00286	-0.00284
	(A1 * A2 * !A3 * !B1 * Y)	0.00370	0.00375	0.00372
	(A1 * !A2 * A3 * !B1 * Y)	-0.00263	-0.00275	-0.00274
	(A1 * !A2 * A3 * !B1 * Y)	0.00369	0.00375	0.00372
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00278	-0.00287	-0.00284
	(A1 * !A2 * !A3 * !B1 * Y)	0.00370	0.00375	0.00373
	(!A3 * B1 * !Y)	-0.00279	-0.00287	-0.00285
	(!A3 * B1 * !Y)	0.00370	0.00375	0.00373
	(!A2 * A3 * B1 * !Y)	-0.00264	-0.00276	-0.00274
	(!A2 * A3 * B1 * !Y)	0.00369	0.00375	0.00373
	(!A1 * A2 * A3 * B1 * !Y)	-0.00262	-0.00272	-0.00272
	(!A1 * A2 * A3 * B1 * !Y)	0.00372	0.00375	0.00373
	(!A1 * A2 * A3 * !B1 * Y)	-0.00262	-0.00274	-0.00271
	(!A1 * A2 * A3 * !B1 * Y)	0.00373	0.00375	0.00373
	(!A1 * !A3 * !B1 * Y)	-0.00278	-0.00287	-0.00284
	(!A1 * !A3 * !B1 * Y)	0.00370	0.00375	0.00373
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00263	-0.00276	-0.00274
	(!A1 * !A2 * A3 * !B1 * Y)	0.00369	0.00375	0.00372

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	(A1 * A2 * A3 * A4 * !Y)	0.00097	0.00098	0.00097
	(A1 * A2 * A3 * A4 * !Y)	-0.00059	-0.00060	-0.00059
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00106	0.00105	0.00105
	(A1 * A2 * A3 * A4 * !Y)	-0.00122	-0.00121	-0.00120
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00206	0.00207	0.00206
	(A1 * A2 * A3 * A4 * !Y)	-0.00237	-0.00239	-0.00237

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	(A1 * A2 * A3 * A4 * !Y)	-0.00085	-0.00086	-0.00096
	(A1 * A2 * A3 * A4 * !Y)	0.00069	0.00069	0.00061
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00080	-0.00082	-0.00102
	(A1 * A2 * A3 * A4 * !Y)	0.00141	0.00140	0.00125
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00160	-0.00164	-0.00202
	(A1 * A2 * A3 * A4 * !Y)	0.00277	0.00275	0.00246

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	X
0	x	x	x	0	0
x	x	x	x	1	1
1	0	x	x	0	0
1	1	0	x	0	0
1	1	1	0	0	0
1	1	1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41o_1	14.38560
sky130_fd_sc_hs__a41o_2	15.98400
sky130_fd_sc_hs__a41o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__a41o_1	0.00240	0.00233	0.00235	0.00229	0.00251	0.18839
sky130_fd_sc_hs__a41o_2	0.00233	0.00239	0.00245	0.00229	0.00254	0.37379
sky130_fd_sc_hs__a41o_4	0.00460	0.00440	0.00453	0.00436	0.00465	0.68233

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	0.00010	0.00018
sky130_fd_sc_hs__a41o_2	0.00000	0.00014	0.00022
sky130_fd_sc_hs__a41o_4	0.00000	0.00027	0.00043

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (RR)	0.38086	1.76501	9.71972
	A2->X (RR)	0.39992	1.80103	9.99851
	A3->X (RR)	0.41377	1.79593	10.01420
	A4->X (RR)	0.41979	1.78032	10.00250
	B1->X (RR)	0.26879	1.63977	9.71066
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.37612	1.62369	10.02280
	A2->X (RR)	0.39853	1.65231	10.24120
	A3->X (RR)	0.41150	1.63846	10.23550
	A4->X (RR)	0.41649	1.61596	10.18300
	B1->X (RR)	0.22248	1.44575	9.86890
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.39249	1.51632	9.98348
	A2->X (RR)	0.41920	1.55138	10.22870
	A3->X (RR)	0.43203	1.51889	10.16930
	A4->X (RR)	0.43873	1.50242	10.12660
	B1->X (RR)	0.21321	1.29863	9.78565

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.89839	1.98469	8.20555
	A2->X (FF)	1.03845	2.12878	8.39966
	A3->X (FF)	1.15120	2.24699	8.56304
	A4->X (FF)	1.25503	2.36358	8.70963
	B1->X (FF)	1.10437	2.09058	8.00734
sky130_fd_sc_hs__a41o_2	A1->X (FF)	1.14760	2.26466	8.65678
	A2->X (FF)	1.30372	2.42530	8.85106
	A3->X (FF)	1.41407	2.54290	8.99671
	A4->X (FF)	1.50591	2.64859	9.11620
	B1->X (FF)	1.36147	2.37805	8.47817
sky130_fd_sc_hs__a41o_4	A1->X (FF)	1.12892	2.21666	8.61877
	A2->X (FF)	1.27678	2.36661	8.80157
	A3->X (FF)	1.39721	2.49532	8.95223
	A4->X (FF)	1.51465	2.62511	9.10467
	B1->X (FF)	1.34852	2.33726	8.45780

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.00558	0.00556	0.00549
	A1	0.00312	0.00309	0.00304
	A2	0.00601	0.00601	0.00597
	A2	0.00312	0.00312	0.00330
	A3	0.00642	0.00642	0.00638
	A3	0.00313	0.00313	0.00310
	A4	0.00685	0.00687	0.00683
	A4	0.00312	0.00314	0.00310
	B1	0.00572	0.00562	0.00555
	B1	0.00236	0.00227	0.00220
sky130_fd_sc_hs__a41o_2	A1	0.00641	0.00648	0.00647
	A1	0.00396	0.00402	0.00401
	A2	0.00687	0.00695	0.00698
	A2	0.00396	0.00405	0.00409
	A3	0.00729	0.00740	0.00742
	A3	0.00396	0.00407	0.00409
	A4	0.00770	0.00782	0.00783
	A4	0.00396	0.00408	0.00410
	B1	0.00662	0.00661	0.00655
	B1	0.00324	0.00322	0.00317

sky130_fd_sc_hs__a41o_4	**A1**	0.01211	0.01223	0.01223
	A1	0.00718	0.00730	0.00732
	A2	0.01292	0.01309	0.01318
	A2	0.00719	0.00736	0.00746
	A3	0.01386	0.01408	0.01415
	A3	0.00719	0.00740	0.00749
	A4	0.01464	0.01489	0.01498
	A4	0.00717	0.00741	0.00752
	B1	0.01242	0.01243	0.01237
	B1	0.00565	0.00567	0.00561

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00187	0.00185	0.00182
	A1	0.00441	0.00439	0.00436
	A2	0.00212	0.00210	0.00208
	A2	0.00505	0.00502	0.00498
	A3	0.00241	0.00240	0.00238
	A3	0.00568	0.00567	0.00562
	A4	0.00260	0.00263	0.00260
	A4	0.00625	0.00628	0.00620
	B1	0.00264	0.00263	0.00258
	B1	0.00584	0.00581	0.00572

sky130_fd_sc_hs__a41o_2	**A1**	0.00307	0.00318	0.00314
	A1	0.00562	0.00573	0.00574
	A2	0.00338	0.00348	0.00335
	A2	0.00632	0.00643	0.00644
	A3	0.00363	0.00376	0.00378
	A3	0.00695	0.00707	0.00706
	A4	0.00379	0.00394	0.00390
	A4	0.00744	0.00760	0.00758
	B1	0.00384	0.00393	0.00394
	B1	0.00706	0.00715	0.00711
sky130_fd_sc_hs__a41o_4	**A1**	0.00591	0.00611	0.00611
	A1	0.01102	0.01121	0.01123
	A2	0.00663	0.00685	0.00692
	A2	0.01244	0.01263	0.01268
	A3	0.00704	0.00729	0.00740
	A3	0.01365	0.01390	0.01394
	A4	0.00762	0.00793	0.00790
	A4	0.01489	0.01518	0.01519
	B1	0.00701	0.00723	0.00890
	B1	0.01401	0.01422	0.01417

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A2 * A3 * A4 * B1 * X)**	0.00075	0.00075	0.00075
	(A2 * A3 * A4 * B1 * X)	-0.00081	-0.00082	-0.00081
	(A2 * A3 * !A4 * B1 * X)	0.00067	0.00067	0.00067
	(A2 * A3 * !A4 * B1 * X)	-0.00086	-0.00086	-0.00086
	(A2 * A3 * !A4 * !B1 * !X)	0.00033	0.00033	0.00029
	(A2 * A3 * !A4 * !B1 * !X)	-0.00093	-0.00093	-0.00101
	(A2 * !A3 * B1 * X)	0.00068	0.00068	0.00068
	(A2 * !A3 * B1 * X)	-0.00086	-0.00086	-0.00086
	(A2 * !A3 * !B1 * !X)	0.00032	0.00032	0.00029
	(A2 * !A3 * !B1 * !X)	-0.00096	-0.00097	-0.00102
	(!A2 * B1 * X)	0.00069	0.00070	0.00070
	(!A2 * B1 * X)	-0.00085	-0.00086	-0.00086
	(!A2 * !B1 * !X)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !X)	-0.00100	-0.00101	-0.00102
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00074	0.00074	0.00074
	(A2 * A3 * A4 * B1 * X)	-0.00081	-0.00082	-0.00082
	(A2 * A3 * !A4 * B1 * X)	0.00066	0.00066	0.00066
	(A2 * A3 * !A4 * B1 * X)	-0.00086	-0.00087	-0.00086
	(A2 * A3 * !A4 * !B1 * !X)	0.00034	0.00034	0.00030
	(A2 * A3 * !A4 * !B1 * !X)	-0.00092	-0.00093	-0.00100
	(A2 * !A3 * B1 * X)	0.00067	0.00068	0.00067
	(A2 * !A3 * B1 * X)	-0.00086	-0.00086	-0.00086
	(A2 * !A3 * !B1 * !X)	0.00033	0.00033	0.00030
	(A2 * !A3 * !B1 * !X)	-0.00095	-0.00096	-0.00101
	(!A2 * B1 * X)	0.00070	0.00070	0.00070
	(!A2 * B1 * X)	-0.00086	-0.00086	-0.00086
	(!A2 * !B1 * !X)	0.00032	0.00032	0.00031
	(!A2 * !B1 * !X)	-0.00099	-0.00099	-0.00101

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00158	0.00158	0.00157
	(A2 * A3 * A4 * B1 * X)	-0.00165	-0.00167	-0.00166
	(A2 * A3 * !A4 * B1 * X)	0.00138	0.00138	0.00138
	(A2 * A3 * !A4 * B1 * X)	-0.00175	-0.00175	-0.00175
	(A2 * A3 * !A4 * !B1 * !X)	0.00073	0.00073	0.00063
	(A2 * A3 * !A4 * !B1 * !X)	-0.00187	-0.00189	-0.00206
	(A2 * !A3 * B1 * X)	0.00141	0.00141	0.00141
	(A2 * !A3 * B1 * X)	-0.00176	-0.00176	-0.00175
	(A2 * !A3 * !B1 * !X)	0.00069	0.00069	0.00063
	(A2 * !A3 * !B1 * !X)	-0.00196	-0.00197	-0.00207
	(!A2 * B1 * X)	0.00147	0.00148	0.00147
	(!A2 * B1 * X)	-0.00175	-0.00176	-0.00175
	(!A2 * !B1 * !X)	0.00070	0.00070	0.00066
	(!A2 * !B1 * !X)	-0.00203	-0.00205	-0.00209

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A2 * A3 * A4 * B1 * X)**	-0.00075	-0.00075	-0.00075
	(A2 * A3 * A4 * B1 * X)	0.00082	0.00082	0.00081
	(A2 * A3 * !A4 * B1 * X)	-0.00064	-0.00067	-0.00067
	(A2 * A3 * !A4 * B1 * X)	0.00086	0.00087	0.00086
	(A2 * A3 * !A4 * !B1 * !X)	-0.00029	-0.00029	-0.00028
	(A2 * A3 * !A4 * !B1 * !X)	0.00103	0.00102	0.00102
	(A2 * !A3 * B1 * X)	-0.00065	-0.00068	-0.00068
	(A2 * !A3 * B1 * X)	0.00086	0.00087	0.00086
	(A2 * !A3 * !B1 * !X)	-0.00029	-0.00029	-0.00028
	(A2 * !A3 * !B1 * !X)	0.00103	0.00102	0.00102
	(!A2 * B1 * X)	-0.00068	-0.00070	-0.00070
	(!A2 * B1 * X)	0.00085	0.00087	0.00086
	(!A2 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !X)	0.00103	0.00102	0.00102
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00074	-0.00074	-0.00074
	(A2 * A3 * A4 * B1 * X)	0.00082	0.00082	0.00082
	(A2 * A3 * !A4 * B1 * X)	-0.00063	-0.00066	-0.00066
	(A2 * A3 * !A4 * B1 * X)	0.00087	0.00087	0.00086
	(A2 * A3 * !A4 * !B1 * !X)	-0.00030	-0.00030	-0.00029
	(A2 * A3 * !A4 * !B1 * !X)	0.00102	0.00102	0.00101
	(A2 * !A3 * B1 * X)	-0.00065	-0.00068	-0.00067
	(A2 * !A3 * B1 * X)	0.00086	0.00087	0.00086
	(A2 * !A3 * !B1 * !X)	-0.00030	-0.00030	-0.00029
	(A2 * !A3 * !B1 * !X)	0.00102	0.00102	0.00101
	(!A2 * B1 * X)	-0.00069	-0.00070	-0.00070
	(!A2 * B1 * X)	0.00087	0.00087	0.00086
	(!A2 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * !X)	0.00102	0.00102	0.00101

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00157	-0.00158	-0.00157
	(A2 * A3 * A4 * B1 * X)	0.00166	0.00167	0.00166
	(A2 * A3 * !A4 * B1 * X)	-0.00131	-0.00138	-0.00138
	(A2 * A3 * !A4 * B1 * X)	0.00175	0.00177	0.00175
	(A2 * A3 * !A4 * !B1 * !X)	-0.00062	-0.00063	-0.00062
	(A2 * A3 * !A4 * !B1 * !X)	0.00208	0.00210	0.00209
	(A2 * !A3 * B1 * X)	-0.00135	-0.00141	-0.00141
	(A2 * !A3 * B1 * X)	0.00177	0.00177	0.00175
	(A2 * !A3 * !B1 * !X)	-0.00063	-0.00063	-0.00063
	(A2 * !A3 * !B1 * !X)	0.00209	0.00210	0.00209
	(!A2 * B1 * X)	-0.00145	-0.00148	-0.00147
	(!A2 * B1 * X)	0.00177	0.00177	0.00175
	(!A2 * !B1 * !X)	-0.00065	-0.00065	-0.00064
	(!A2 * !B1 * !X)	0.00211	0.00210	0.00209

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A3 * A4 * B1 * X)**	0.00077	0.00076	0.00076
	(A1 * A3 * A4 * B1 * X)	-0.00080	-0.00081	-0.00081
	(A1 * A3 * !A4 * B1 * X)	0.00069	0.00069	0.00069
	(A1 * A3 * !A4 * B1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * A3 * !A4 * !B1 * !X)	0.00039	0.00039	0.00039
	(A1 * A3 * !A4 * !B1 * !X)	-0.00085	-0.00086	-0.00085
	(A1 * !A3 * B1 * X)	0.00071	0.00072	0.00071
	(A1 * !A3 * B1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A3 * !B1 * !X)	0.00041	0.00041	0.00040
	(A1 * !A3 * !B1 * !X)	-0.00085	-0.00086	-0.00085
	(!A1 * A3 * A4 * B1 * X)	0.00071	0.00071	0.00071
	(!A1 * A3 * A4 * B1 * X)	-0.00085	-0.00085	-0.00085
	(!A1 * A3 * A4 * !B1 * !X)	0.00071	0.00071	0.00071
	(!A1 * A3 * A4 * !B1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * A3 * !A4 * B1 * X)	0.00047	0.00048	0.00047
	(!A1 * A3 * !A4 * B1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * A3 * !A4 * !B1 * !X)	0.00044	0.00044	0.00044
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * !A3 * B1 * X)	0.00047	0.00047	0.00047
	(!A1 * !A3 * B1 * X)	-0.00085	-0.00085	-0.00085
	(!A1 * !A3 * !B1 * !X)	0.00043	0.00043	0.00043
	(!A1 * !A3 * !B1 * !X)	-0.00086	-0.00086	-0.00086

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00077	0.00077	0.00077
	(A1 * A3 * A4 * B1 * X)	-0.00080	-0.00081	-0.00081
	(A1 * A3 * !A4 * B1 * X)	0.00070	0.00070	0.00070
	(A1 * A3 * !A4 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A1 * A3 * !A4 * !B1 * !X)	0.00040	0.00040	0.00041
	(A1 * A3 * !A4 * !B1 * !X)	-0.00086	-0.00086	-0.00085
	(A1 * !A3 * B1 * X)	0.00072	0.00073	0.00072
	(A1 * !A3 * B1 * X)	-0.00086	-0.00086	-0.00085
	(A1 * !A3 * !B1 * !X)	0.00042	0.00042	0.00042
	(A1 * !A3 * !B1 * !X)	-0.00086	-0.00086	-0.00085
	(!A1 * A3 * A4 * B1 * X)	0.00073	0.00073	0.00072
	(!A1 * A3 * A4 * B1 * X)	-0.00086	-0.00086	-0.00085
	(!A1 * A3 * A4 * !B1 * !X)	0.00072	0.00072	0.00072
	(!A1 * A3 * A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * A3 * !A4 * B1 * X)	0.00048	0.00048	0.00048
	(!A1 * A3 * !A4 * B1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * A3 * !A4 * !B1 * !X)	0.00045	0.00045	0.00045
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * !A3 * B1 * X)	0.00050	0.00050	0.00049
	(!A1 * !A3 * B1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * !A3 * !B1 * !X)	0.00045	0.00045	0.00045
	(!A1 * !A3 * !B1 * !X)	-0.00086	-0.00086	-0.00086

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00154	0.00154	0.00153
	(A1 * A3 * A4 * B1 * X)	-0.00162	-0.00164	-0.00163
	(A1 * A3 * !A4 * B1 * X)	0.00135	0.00136	0.00135
	(A1 * A3 * !A4 * B1 * X)	-0.00172	-0.00172	-0.00172
	(A1 * A3 * !A4 * !B1 * !X)	0.00076	0.00076	0.00077
	(A1 * A3 * !A4 * !B1 * !X)	-0.00172	-0.00172	-0.00170
	(A1 * !A3 * B1 * X)	0.00139	0.00140	0.00140
	(A1 * !A3 * B1 * X)	-0.00171	-0.00173	-0.00172
	(A1 * !A3 * !B1 * !X)	0.00078	0.00078	0.00078
	(A1 * !A3 * !B1 * !X)	-0.00172	-0.00173	-0.00172
	(!A1 * A3 * A4 * B1 * X)	0.00143	0.00144	0.00143
	(!A1 * A3 * A4 * B1 * X)	-0.00171	-0.00172	-0.00172
	(!A1 * A3 * A4 * !B1 * !X)	0.00143	0.00143	0.00143
	(!A1 * A3 * A4 * !B1 * !X)	-0.00172	-0.00173	-0.00172
	(!A1 * A3 * !A4 * B1 * X)	0.00092	0.00092	0.00092
	(!A1 * A3 * !A4 * B1 * X)	-0.00172	-0.00173	-0.00172
	(!A1 * A3 * !A4 * !B1 * !X)	0.00087	0.00087	0.00086
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A3 * B1 * X)	0.00091	0.00091	0.00091
	(!A1 * !A3 * B1 * X)	-0.00172	-0.00173	-0.00172
	(!A1 * !A3 * !B1 * !X)	0.00083	0.00083	0.00083
	(!A1 * !A3 * !B1 * !X)	-0.00173	-0.00174	-0.00173

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A3 * A4 * B1 * X)**	-0.00076	-0.00076	-0.00076
	(A1 * A3 * A4 * B1 * X)	0.00081	0.00081	0.00081
	(A1 * A3 * !A4 * B1 * X)	-0.00066	-0.00069	-0.00069
	(A1 * A3 * !A4 * B1 * X)	0.00085	0.00086	0.00085
	(A1 * A3 * !A4 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(A1 * A3 * !A4 * !B1 * !X)	0.00089	0.00088	0.00086
	(A1 * !A3 * B1 * X)	-0.00070	-0.00072	-0.00071
	(A1 * !A3 * B1 * X)	0.00086	0.00086	0.00085
	(A1 * !A3 * !B1 * !X)	-0.00039	-0.00039	-0.00039
	(A1 * !A3 * !B1 * !X)	0.00089	0.00088	0.00086
	(!A1 * A3 * A4 * B1 * X)	-0.00070	-0.00071	-0.00071
	(!A1 * A3 * A4 * B1 * X)	0.00085	0.00085	0.00085
	(!A1 * A3 * A4 * !B1 * !X)	-0.00069	-0.00071	-0.00071
	(!A1 * A3 * A4 * !B1 * !X)	0.00085	0.00085	0.00086
	(!A1 * A3 * !A4 * B1 * X)	-0.00047	-0.00048	-0.00047
	(!A1 * A3 * !A4 * B1 * X)	0.00086	0.00086	0.00085
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * A3 * !A4 * !B1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A3 * B1 * X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A3 * B1 * X)	0.00086	0.00086	0.00085
	(!A1 * !A3 * !B1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A3 * !B1 * !X)	0.00086	0.00086	0.00086

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00077	-0.00077	-0.00077
	(A1 * A3 * A4 * B1 * X)	0.00082	0.00081	0.00081
	(A1 * A3 * !A4 * B1 * X)	-0.00067	-0.00070	-0.00070
	(A1 * A3 * !A4 * B1 * X)	0.00086	0.00086	0.00086
	(A1 * A3 * !A4 * !B1 * !X)	-0.00039	-0.00039	-0.00040
	(A1 * A3 * !A4 * !B1 * !X)	0.00089	0.00089	0.00086
	(A1 * !A3 * B1 * X)	-0.00071	-0.00073	-0.00072
	(A1 * !A3 * B1 * X)	0.00086	0.00086	0.00086
	(A1 * !A3 * !B1 * !X)	-0.00040	-0.00040	-0.00041
	(A1 * !A3 * !B1 * !X)	0.00089	0.00089	0.00086
	(!A1 * A3 * A4 * B1 * X)	-0.00071	-0.00073	-0.00072
	(!A1 * A3 * A4 * B1 * X)	0.00086	0.00086	0.00086
	(!A1 * A3 * A4 * !B1 * !X)	-0.00071	-0.00072	-0.00072
	(!A1 * A3 * A4 * !B1 * !X)	0.00087	0.00087	0.00086
	(!A1 * A3 * !A4 * B1 * X)	-0.00048	-0.00048	-0.00048
	(!A1 * A3 * !A4 * B1 * X)	0.00086	0.00086	0.00086
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * A3 * !A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A3 * B1 * X)	-0.00050	-0.00050	-0.00049
	(!A1 * !A3 * B1 * X)	0.00087	0.00086	0.00086
	(!A1 * !A3 * !B1 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A3 * !B1 * !X)	0.00086	0.00087	0.00086

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00153	-0.00154	-0.00153
	(A1 * A3 * A4 * B1 * X)	0.00162	0.00164	0.00163
	(A1 * A3 * !A4 * B1 * X)	-0.00129	-0.00136	-0.00135
	(A1 * A3 * !A4 * B1 * X)	0.00172	0.00172	0.00172
	(A1 * A3 * !A4 * !B1 * !X)	-0.00073	-0.00072	-0.00073
	(A1 * A3 * !A4 * !B1 * !X)	0.00180	0.00178	0.00174
	(A1 * !A3 * B1 * X)	-0.00136	-0.00140	-0.00140
	(A1 * !A3 * B1 * X)	0.00172	0.00173	0.00172
	(A1 * !A3 * !B1 * !X)	-0.00074	-0.00074	-0.00075
	(A1 * !A3 * !B1 * !X)	0.00179	0.00178	0.00173
	(!A1 * A3 * A4 * B1 * X)	-0.00139	-0.00144	-0.00143
	(!A1 * A3 * A4 * B1 * X)	0.00171	0.00173	0.00172
	(!A1 * A3 * A4 * !B1 * !X)	-0.00139	-0.00143	-0.00143
	(!A1 * A3 * A4 * !B1 * !X)	0.00172	0.00173	0.00173
	(!A1 * A3 * !A4 * B1 * X)	-0.00092	-0.00092	-0.00092
	(!A1 * A3 * !A4 * B1 * X)	0.00175	0.00173	0.00172
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00087	-0.00087	-0.00086
	(!A1 * A3 * !A4 * !B1 * !X)	0.00175	0.00175	0.00173
	(!A1 * !A3 * B1 * X)	-0.00091	-0.00091	-0.00091
	(!A1 * !A3 * B1 * X)	0.00172	0.00173	0.00173
	(!A1 * !A3 * !B1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !A3 * !B1 * !X)	0.00174	0.00174	0.00174

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A4 * B1 * X)**	0.00075	0.00075	0.00075
	(A1 * A2 * A4 * B1 * X)	-0.00082	-0.00083	-0.00082
	(A1 * A2 * !A4 * B1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * !A4 * !B1 * !X)	0.00041	0.00041	0.00040
	(A1 * A2 * !A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * A4 * !B1 * !X)	0.00070	0.00071	0.00070
	(A1 * !A2 * A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * !A4 * !B1 * !X)	0.00045	0.00045	0.00044
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(!A2 * A4 * B1 * X)	0.00070	0.00070	0.00070
	(!A2 * A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(!A2 * !A4 * B1 * X)	0.00047	0.00047	0.00047
	(!A2 * !A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * A2 * A4 * B1 * X)	0.00068	0.00068	0.00068
	(!A1 * A2 * A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * A2 * A4 * !B1 * !X)	0.00068	0.00068	0.00068
	(!A1 * A2 * A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * A2 * !A4 * B1 * X)	0.00046	0.00046	0.00046
	(!A1 * A2 * !A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * A2 * !A4 * !B1 * !X)	0.00044	0.00044	0.00043
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * A4 * !B1 * !X)	0.00070	0.00071	0.00070
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00046	0.00046	0.00046
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00079	0.00078	0.00078
	(A1 * A2 * A4 * B1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * !A4 * B1 * X)	0.00073	0.00073	0.00073
	(A1 * A2 * !A4 * B1 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * !A4 * !B1 * !X)	0.00042	0.00042	0.00042
	(A1 * A2 * !A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * A4 * !B1 * !X)	0.00073	0.00074	0.00073
	(A1 * !A2 * A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * !A4 * !B1 * !X)	0.00046	0.00046	0.00046
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(!A2 * A4 * B1 * X)	0.00073	0.00073	0.00073
	(!A2 * A4 * B1 * X)	-0.00086	-0.00086	-0.00086
	(!A2 * !A4 * B1 * X)	0.00048	0.00048	0.00048
	(!A2 * !A4 * B1 * X)	-0.00086	-0.00086	-0.00086
	(!A1 * A2 * A4 * B1 * X)	0.00071	0.00072	0.00071
	(!A1 * A2 * A4 * B1 * X)	-0.00086	-0.00086	-0.00086
	(!A1 * A2 * A4 * !B1 * !X)	0.00071	0.00072	0.00071
	(!A1 * A2 * A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * A2 * !A4 * B1 * X)	0.00049	0.00049	0.00048
	(!A1 * A2 * !A4 * B1 * X)	-0.00086	-0.00086	-0.00086
	(!A1 * A2 * !A4 * !B1 * !X)	0.00046	0.00046	0.00045
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * A4 * !B1 * !X)	0.00073	0.00074	0.00073
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00157	0.00157	0.00156
	(A1 * A2 * A4 * B1 * X)	-0.00164	-0.00166	-0.00165
	(A1 * A2 * !A4 * B1 * X)	0.00145	0.00145	0.00145
	(A1 * A2 * !A4 * B1 * X)	-0.00174	-0.00174	-0.00174
	(A1 * A2 * !A4 * !B1 * !X)	0.00080	0.00080	0.00079
	(A1 * A2 * !A4 * !B1 * !X)	-0.00175	-0.00175	-0.00175
	(A1 * !A2 * A4 * !B1 * !X)	0.00142	0.00144	0.00143
	(A1 * !A2 * A4 * !B1 * !X)	-0.00174	-0.00175	-0.00174
	(A1 * !A2 * !A4 * !B1 * !X)	0.00087	0.00087	0.00087
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00175	-0.00175	-0.00175
	(!A2 * A4 * B1 * X)	0.00142	0.00144	0.00143
	(!A2 * A4 * B1 * X)	-0.00173	-0.00175	-0.00174
	(!A2 * !A4 * B1 * X)	0.00093	0.00093	0.00092
	(!A2 * !A4 * B1 * X)	-0.00175	-0.00176	-0.00175
	(!A1 * A2 * A4 * B1 * X)	0.00140	0.00140	0.00140
	(!A1 * A2 * A4 * B1 * X)	-0.00175	-0.00175	-0.00174
	(!A1 * A2 * A4 * !B1 * !X)	0.00140	0.00139	0.00139
	(!A1 * A2 * A4 * !B1 * !X)	-0.00175	-0.00175	-0.00175
	(!A1 * A2 * !A4 * B1 * X)	0.00093	0.00094	0.00093
	(!A1 * A2 * !A4 * B1 * X)	-0.00175	-0.00176	-0.00175
	(!A1 * A2 * !A4 * !B1 * !X)	0.00088	0.00088	0.00087
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00175	-0.00176	-0.00175
	(!A1 * !A2 * A4 * !B1 * !X)	0.00142	0.00144	0.00143
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00174	-0.00175	-0.00174
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00090	0.00090	0.00090
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00175	-0.00175	-0.00175

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A4 * B1 * X)**	-0.00075	-0.00075	-0.00075
	(A1 * A2 * A4 * B1 * X)	0.00083	0.00083	0.00082
	(A1 * A2 * !A4 * B1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * !A4 * B1 * X)	0.00087	0.00087	0.00087
	(A1 * A2 * !A4 * !B1 * !X)	-0.00039	-0.00040	-0.00039
	(A1 * A2 * !A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * !A2 * A4 * !B1 * !X)	-0.00069	-0.00071	-0.00070
	(A1 * !A2 * A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00045	-0.00045	-0.00044
	(A1 * !A2 * !A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(!A2 * A4 * B1 * X)	-0.00069	-0.00070	-0.00070
	(!A2 * A4 * B1 * X)	0.00087	0.00088	0.00087
	(!A2 * !A4 * B1 * X)	-0.00047	-0.00047	-0.00047
	(!A2 * !A4 * B1 * X)	0.00088	0.00088	0.00087
	(!A1 * A2 * A4 * B1 * X)	-0.00065	-0.00068	-0.00068
	(!A1 * A2 * A4 * B1 * X)	0.00087	0.00088	0.00087
	(!A1 * A2 * A4 * !B1 * !X)	-0.00065	-0.00068	-0.00068
	(!A1 * A2 * A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(!A1 * A2 * !A4 * B1 * X)	-0.00046	-0.00046	-0.00046
	(!A1 * A2 * !A4 * B1 * X)	0.00087	0.00088	0.00087
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * A2 * !A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00069	-0.00071	-0.00070
	(!A1 * !A2 * A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00088	0.00088	0.00087

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00078	-0.00078	-0.00078
	(A1 * A2 * A4 * B1 * X)	0.00082	0.00082	0.00081
	(A1 * A2 * !A4 * B1 * X)	-0.00072	-0.00073	-0.00073
	(A1 * A2 * !A4 * B1 * X)	0.00087	0.00087	0.00086
	(A1 * A2 * !A4 * !B1 * !X)	-0.00042	-0.00042	-0.00041
	(A1 * A2 * !A4 * !B1 * !X)	0.00087	0.00087	0.00086
	(A1 * !A2 * A4 * !B1 * !X)	-0.00072	-0.00074	-0.00073
	(A1 * !A2 * A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00046	-0.00046	-0.00046
	(A1 * !A2 * !A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A2 * A4 * B1 * X)	-0.00072	-0.00073	-0.00073
	(!A2 * A4 * B1 * X)	0.00086	0.00087	0.00086
	(!A2 * !A4 * B1 * X)	-0.00048	-0.00048	-0.00048
	(!A2 * !A4 * B1 * X)	0.00087	0.00087	0.00086
	(!A1 * A2 * A4 * B1 * X)	-0.00069	-0.00072	-0.00071
	(!A1 * A2 * A4 * B1 * X)	0.00087	0.00087	0.00086
	(!A1 * A2 * A4 * !B1 * !X)	-0.00069	-0.00072	-0.00071
	(!A1 * A2 * A4 * !B1 * !X)	0.00087	0.00087	0.00086
	(!A1 * A2 * !A4 * B1 * X)	-0.00049	-0.00049	-0.00048
	(!A1 * A2 * !A4 * B1 * X)	0.00087	0.00087	0.00086
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00046	-0.00046	-0.00045
	(!A1 * A2 * !A4 * !B1 * !X)	0.00087	0.00087	0.00086
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00072	-0.00074	-0.00073
	(!A1 * !A2 * A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00088	0.00087	0.00086

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00156	-0.00157	-0.00156
	(A1 * A2 * A4 * B1 * X)	0.00165	0.00166	0.00165
	(A1 * A2 * !A4 * B1 * X)	-0.00142	-0.00145	-0.00145
	(A1 * A2 * !A4 * B1 * X)	0.00175	0.00175	0.00175
	(A1 * A2 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00077
	(A1 * A2 * !A4 * !B1 * !X)	0.00178	0.00177	0.00175
	(A1 * !A2 * A4 * !B1 * !X)	-0.00140	-0.00144	-0.00143
	(A1 * !A2 * A4 * !B1 * !X)	0.00175	0.00176	0.00175
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * !A4 * !B1 * !X)	0.00175	0.00176	0.00175
	(!A2 * A4 * B1 * X)	-0.00140	-0.00144	-0.00143
	(!A2 * A4 * B1 * X)	0.00175	0.00176	0.00175
	(!A2 * !A4 * B1 * X)	-0.00093	-0.00093	-0.00092
	(!A2 * !A4 * B1 * X)	0.00177	0.00176	0.00175
	(!A1 * A2 * A4 * B1 * X)	-0.00135	-0.00140	-0.00140
	(!A1 * A2 * A4 * B1 * X)	0.00176	0.00176	0.00175
	(!A1 * A2 * A4 * !B1 * !X)	-0.00134	-0.00139	-0.00139
	(!A1 * A2 * A4 * !B1 * !X)	0.00176	0.00176	0.00175
	(!A1 * A2 * !A4 * B1 * X)	-0.00093	-0.00094	-0.00093
	(!A1 * A2 * !A4 * B1 * X)	0.00178	0.00176	0.00175
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00088	-0.00088	-0.00087
	(!A1 * A2 * !A4 * !B1 * !X)	0.00176	0.00177	0.00176
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00140	-0.00144	-0.00143
	(!A1 * !A2 * A4 * !B1 * !X)	0.00175	0.00176	0.00175
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00175	0.00176	0.00175

Passive power(pJ) for A4 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A3 * B1 * X)**	0.00081	0.00080	0.00080
	(A1 * A2 * A3 * B1 * X)	-0.00081	-0.00083	-0.00082
	(A1 * A2 * !A3 * !B1 * !X)	0.00075	0.00076	0.00076
	(A1 * A2 * !A3 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * A3 * !B1 * !X)	0.00074	0.00074	0.00073
	(A1 * !A2 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00086
	(A1 * !A2 * !A3 * !B1 * !X)	0.00075	0.00076	0.00076
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(!A3 * B1 * X)	0.00076	0.00076	0.00076
	(!A3 * B1 * X)	-0.00086	-0.00087	-0.00086
	(!A2 * A3 * B1 * X)	0.00074	0.00074	0.00073
	(!A2 * A3 * B1 * X)	-0.00087	-0.00087	-0.00086
	(!A1 * A2 * A3 * B1 * X)	0.00073	0.00073	0.00072
	(!A1 * A2 * A3 * B1 * X)	-0.00086	-0.00087	-0.00086
	(!A1 * A2 * A3 * !B1 * !X)	0.00073	0.00073	0.00072
	(!A1 * A2 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00086
	(!A1 * !A3 * !B1 * !X)	0.00075	0.00076	0.00076
	(!A1 * !A3 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * A3 * !B1 * !X)	0.00074	0.00074	0.00073
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00086

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00080	0.00080	0.00079
	(A1 * A2 * A3 * B1 * X)	-0.00081	-0.00083	-0.00082
	(A1 * A2 * !A3 * !B1 * !X)	0.00074	0.00075	0.00074
	(A1 * A2 * !A3 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * A3 * !B1 * !X)	0.00073	0.00073	0.00072
	(A1 * !A2 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00086
	(A1 * !A2 * !A3 * !B1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(!A3 * B1 * X)	0.00074	0.00075	0.00074
	(!A3 * B1 * X)	-0.00087	-0.00087	-0.00086
	(!A2 * A3 * B1 * X)	0.00073	0.00073	0.00072
	(!A2 * A3 * B1 * X)	-0.00087	-0.00087	-0.00086
	(!A1 * A2 * A3 * B1 * X)	0.00072	0.00072	0.00072
	(!A1 * A2 * A3 * B1 * X)	-0.00086	-0.00087	-0.00086
	(!A1 * A2 * A3 * !B1 * !X)	0.00072	0.00072	0.00072
	(!A1 * A2 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00086
	(!A1 * !A3 * !B1 * !X)	0.00074	0.00075	0.00074
	(!A1 * !A3 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * A3 * !B1 * !X)	0.00073	0.00073	0.00072
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00086

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00156	0.00155	0.00154
	(A1 * A2 * A3 * B1 * X)	-0.00160	-0.00163	-0.00162
	(A1 * A2 * !A3 * !B1 * !X)	0.00142	0.00144	0.00143
	(A1 * A2 * !A3 * !B1 * !X)	-0.00168	-0.00170	-0.00170
	(A1 * !A2 * A3 * !B1 * !X)	0.00138	0.00139	0.00138
	(A1 * !A2 * A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * !A3 * !B1 * !X)	0.00142	0.00144	0.00143
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00169	-0.00170	-0.00170
	(!A3 * B1 * X)	0.00144	0.00145	0.00144
	(!A3 * B1 * X)	-0.00170	-0.00170	-0.00170
	(!A2 * A3 * B1 * X)	0.00139	0.00139	0.00138
	(!A2 * A3 * B1 * X)	-0.00170	-0.00170	-0.00170
	(!A1 * A2 * A3 * B1 * X)	0.00138	0.00138	0.00137
	(!A1 * A2 * A3 * B1 * X)	-0.00170	-0.00171	-0.00170
	(!A1 * A2 * A3 * !B1 * !X)	0.00137	0.00138	0.00137
	(!A1 * A2 * A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A3 * !B1 * !X)	0.00142	0.00144	0.00143
	(!A1 * !A3 * !B1 * !X)	-0.00169	-0.00170	-0.00170
	(!A1 * !A2 * A3 * !B1 * !X)	0.00139	0.00139	0.00138
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170

Passive power(pJ) for A4 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A3 * B1 * X)**	-0.00080	-0.00080	-0.00080
	(A1 * A2 * A3 * B1 * X)	0.00082	0.00083	0.00082
	(A1 * A2 * !A3 * !B1 * !X)	-0.00074	-0.00076	-0.00076
	(A1 * A2 * !A3 * !B1 * !X)	0.00086	0.00087	0.00087
	(A1 * !A2 * A3 * !B1 * !X)	-0.00072	-0.00074	-0.00073
	(A1 * !A2 * A3 * !B1 * !X)	0.00087	0.00087	0.00087
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00074	-0.00076	-0.00076
	(A1 * !A2 * !A3 * !B1 * !X)	0.00086	0.00087	0.00087
	(!A3 * B1 * X)	-0.00074	-0.00076	-0.00076
	(!A3 * B1 * X)	0.00086	0.00087	0.00087
	(!A2 * A3 * B1 * X)	-0.00072	-0.00074	-0.00073
	(!A2 * A3 * B1 * X)	0.00087	0.00087	0.00087
	(!A1 * A2 * A3 * B1 * X)	-0.00071	-0.00073	-0.00072
	(!A1 * A2 * A3 * B1 * X)	0.00087	0.00087	0.00087
	(!A1 * A2 * A3 * !B1 * !X)	-0.00071	-0.00073	-0.00072
	(!A1 * A2 * A3 * !B1 * !X)	0.00087	0.00087	0.00087
	(!A1 * !A3 * !B1 * !X)	-0.00074	-0.00076	-0.00076
	(!A1 * !A3 * !B1 * !X)	0.00086	0.00087	0.00087
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00072	-0.00074	-0.00073
	(!A1 * !A2 * A3 * !B1 * !X)	0.00087	0.00087	0.00087

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00079	-0.00080	-0.00079
	(A1 * A2 * A3 * B1 * X)	0.00082	0.00083	0.00082
	(A1 * A2 * !A3 * !B1 * !X)	-0.00073	-0.00075	-0.00074
	(A1 * A2 * !A3 * !B1 * !X)	0.00087	0.00087	0.00087
	(A1 * !A2 * A3 * !B1 * !X)	-0.00071	-0.00073	-0.00072
	(A1 * !A2 * A3 * !B1 * !X)	0.00087	0.00087	0.00087
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00073	-0.00075	-0.00074
	(A1 * !A2 * !A3 * !B1 * !X)	0.00087	0.00087	0.00087
	(!A3 * B1 * X)	-0.00073	-0.00075	-0.00074
	(!A3 * B1 * X)	0.00087	0.00087	0.00087
	(!A2 * A3 * B1 * X)	-0.00071	-0.00073	-0.00072
	(!A2 * A3 * B1 * X)	0.00087	0.00087	0.00087
	(!A1 * A2 * A3 * B1 * X)	-0.00070	-0.00072	-0.00072
	(!A1 * A2 * A3 * B1 * X)	0.00087	0.00087	0.00087
	(!A1 * A2 * A3 * !B1 * !X)	-0.00070	-0.00072	-0.00072
	(!A1 * A2 * A3 * !B1 * !X)	0.00087	0.00087	0.00087
	(!A1 * !A3 * !B1 * !X)	-0.00073	-0.00075	-0.00074
	(!A1 * !A3 * !B1 * !X)	0.00087	0.00087	0.00087
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00071	-0.00073	-0.00072
	(!A1 * !A2 * A3 * !B1 * !X)	0.00087	0.00087	0.00087

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00155	-0.00155	-0.00154
	(A1 * A2 * A3 * B1 * X)	0.00162	0.00163	0.00162
	(A1 * A2 * !A3 * !B1 * !X)	-0.00141	-0.00144	-0.00143
	(A1 * A2 * !A3 * !B1 * !X)	0.00171	0.00171	0.00170
	(A1 * !A2 * A3 * !B1 * !X)	-0.00134	-0.00139	-0.00138
	(A1 * !A2 * A3 * !B1 * !X)	0.00171	0.00171	0.00170
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00141	-0.00144	-0.00143
	(A1 * !A2 * !A3 * !B1 * !X)	0.00171	0.00171	0.00170
	(!A3 * B1 * X)	-0.00142	-0.00145	-0.00144
	(!A3 * B1 * X)	0.00171	0.00171	0.00170
	(!A2 * A3 * B1 * X)	-0.00134	-0.00139	-0.00138
	(!A2 * A3 * B1 * X)	0.00171	0.00171	0.00170
	(!A1 * A2 * A3 * B1 * X)	-0.00132	-0.00138	-0.00137
	(!A1 * A2 * A3 * B1 * X)	0.00170	0.00171	0.00170
	(!A1 * A2 * A3 * !B1 * !X)	-0.00132	-0.00138	-0.00137
	(!A1 * A2 * A3 * !B1 * !X)	0.00170	0.00171	0.00170
	(!A1 * !A3 * !B1 * !X)	-0.00141	-0.00144	-0.00143
	(!A1 * !A3 * !B1 * !X)	0.00171	0.00171	0.00170
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00134	-0.00139	-0.00138
	(!A1 * !A2 * A3 * !B1 * !X)	0.00171	0.00171	0.00170

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	(A1 * A2 * A3 * A4 * X)	0.00093	0.00092	0.00091
	(A1 * A2 * A3 * A4 * X)	-0.00056	-0.00055	-0.00055
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00094	0.00093	0.00092
	(A1 * A2 * A3 * A4 * X)	-0.00057	-0.00056	-0.00056
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00173	0.00174	0.00173
	(A1 * A2 * A3 * A4 * X)	-0.00114	-0.00114	-0.00114

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	(A1 * A2 * A3 * A4 * X)	-0.00080	-0.00081	-0.00090
	(A1 * A2 * A3 * A4 * X)	0.00064	0.00064	0.00057
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00081	-0.00082	-0.00091
	(A1 * A2 * A3 * A4 * X)	0.00065	0.00065	0.00058
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00150	-0.00152	-0.00170
	(A1 * A2 * A3 * A4 * X)	0.00134	0.00133	0.00118

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A_N	B	X
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2b_1	11.18880
sky130_fd_sc_hs__and2b_2	11.18880
sky130_fd_sc_hs__and2b_4	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	X
sky130_fd_sc_hs__and2b_1	0.00234	0.00218	0.18863
sky130_fd_sc_hs__and2b_2	0.00209	0.00254	0.35867
sky130_fd_sc_hs__and2b_4	0.00235	0.00458	0.71597

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.00012	0.00014
sky130_fd_sc_hs__and2b_2	0.00000	0.00016	0.00019
sky130_fd_sc_hs__and2b_4	0.00000	0.00029	0.00031

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2b_1	A_N->X (FR)	0.58179	2.27325	12.84800
	B->X (RR)	0.26918	1.62253	9.68210
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.59111	2.11340	12.98870
	B->X (RR)	0.26194	1.46260	9.85719
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.62046	1.99698	13.09630
	B->X (RR)	0.26622	1.31715	9.77428

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2b_1	A_N->X (RF)	0.42022	1.10199	3.96051
	B->X (FF)	0.39816	1.41284	7.05285
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.51982	1.20563	4.08233
	B->X (FF)	0.49516	1.52084	7.47962
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.50297	1.16567	4.06083
	B->X (FF)	0.49362	1.48708	7.40188

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00345	0.00336	0.00329
	A_N	0.00524	0.00515	0.00508
	B	0.00402	0.00398	0.00395
	B	0.00224	0.00219	0.00217
sky130_fd_sc_hs__and2b_2	A_N	0.00512	0.00516	0.00512
	A_N	0.00671	0.00676	0.00673
	B	0.00561	0.00566	0.00564
	B	0.00350	0.00354	0.00353
sky130_fd_sc_hs__and2b_4	A_N	0.00950	0.00971	0.00981
	A_N	0.01121	0.01141	0.01158
	B	0.01064	0.01073	0.01081
	B	0.00695	0.00710	0.00713

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00571	0.00554	0.00544
	A_N	0.00392	0.00376	0.00364
	B	0.00194	0.00183	0.00191
	B	0.00372	0.00365	0.00362
sky130_fd_sc_hs__and2b_2	A_N	0.00688	0.00681	0.00667
	A_N	0.00529	0.00522	0.00507
	B	0.00308	0.00312	0.00318
	B	0.00518	0.00522	0.00519
sky130_fd_sc_hs__and2b_4	A_N	0.01069	0.01085	0.01074
	A_N	0.00899	0.00917	0.00904
	B	0.00596	0.00607	0.00624
	B	0.00963	0.00976	0.00976

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00315	0.00305	0.00298
	(!B * !X)	0.00113	0.00102	0.00096
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00299	0.00289	0.00284
	(!B * !X)	0.00112	0.00102	0.00097
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00368	0.00357	0.00351
	(!B * !X)	0.00153	0.00142	0.00136

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00012	0.00002	-0.00002
	(!B * !X)	0.00214	0.00204	0.00200
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00026	0.00018	0.00014
	(!B * !X)	0.00213	0.00205	0.00201
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00043	0.00034	0.00030
	(!B * !X)	0.00259	0.00250	0.00245

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00068	0.00068	0.00068
	(A_N * !X)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00083	0.00084	0.00084
	(A_N * !X)	-0.00093	-0.00094	-0.00093
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00147	0.00146	0.00146
	(A_N * !X)	-0.00165	-0.00166	-0.00165

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00067	-0.00068	-0.00068
	(A_N * !X)	0.00082	0.00083	0.00082
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00083	-0.00084	-0.00084
	(A_N * !X)	0.00093	0.00095	0.00093
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00145	-0.00146	-0.00146
	(A_N * !X)	0.00165	0.00167	0.00166

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	X
0	x	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2_1	7.99200
sky130_fd_sc_hs__and2_2	7.99200
sky130_fd_sc_hs__and2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__and2_1	0.00226	0.00218	0.18686
sky130_fd_sc_hs__and2_2	0.00246	0.00271	0.37222
sky130_fd_sc_hs__and2_4	0.00395	0.00437	0.73410

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.00009	0.00010
sky130_fd_sc_hs__and2_2	0.00000	0.00013	0.00015
sky130_fd_sc_hs__and2_4	0.00000	0.00025	0.00028

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (RR)	0.25301	1.60515	9.46536
	B->X (RR)	0.26232	1.63096	9.71244
sky130_fd_sc_hs__and2_2	A->X (RR)	0.24186	1.44494	9.68823
	B->X (RR)	0.25123	1.45630	9.86083
sky130_fd_sc_hs__and2_4	A->X (RR)	0.23772	1.30217	9.74601
	B->X (RR)	0.24880	1.31864	9.93837

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.35467	1.36957	6.93691
	B->X (FF)	0.40339	1.41766	7.06298
sky130_fd_sc_hs__and2_2	A->X (FF)	0.43330	1.46311	7.39829
	B->X (FF)	0.48758	1.51490	7.51890
sky130_fd_sc_hs__and2_4	A->X (FF)	0.44915	1.43982	7.30006
	B->X (FF)	0.48972	1.48344	7.39372

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00384	0.00378	0.00374
	A	0.00187	0.00180	0.00177
	B	0.00410	0.00405	0.00401
	B	0.00187	0.00182	0.00179
sky130_fd_sc_hs__and2_2	A	0.00526	0.00526	0.00523
	A	0.00309	0.00309	0.00307
	B	0.00581	0.00583	0.00579
	B	0.00313	0.00315	0.00313
sky130_fd_sc_hs__and2_4	A	0.00967	0.00969	0.00974
	A	0.00629	0.00632	0.00638
	B	0.01072	0.01084	0.01090
	B	0.00627	0.00641	0.00645

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00150	0.00129	0.00150
	A	0.00348	0.00341	0.00339
	B	0.00190	0.00179	0.00181
	B	0.00410	0.00403	0.00399
sky130_fd_sc_hs__and2_2	A	0.00293	0.00294	0.00303
	A	0.00511	0.00513	0.00512
	B	0.00314	0.00316	0.00409
	B	0.00576	0.00579	0.00576
sky130_fd_sc_hs__and2_4	A	0.00558	0.00562	0.00575
	A	0.00896	0.00904	0.00908
	B	0.00581	0.00594	0.00601
	B	0.01019	0.01034	0.01031

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00045	0.00045	0.00043
	(!B * !X)	-0.00086	-0.00086	-0.00088
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00033	0.00033	0.00032
	(!B * !X)	-0.00103	-0.00103	-0.00104
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00050	0.00050	0.00048
	(!B * !X)	-0.00166	-0.00167	-0.00170

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00043	-0.00043	-0.00043
	(!B * !X)	0.00087	0.00089	0.00088
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00032	-0.00032	-0.00032
	(!B * !X)	0.00105	0.00105	0.00104
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00048	-0.00047	-0.00047
	(!B * !X)	0.00172	0.00171	0.00170

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00059	0.00059	0.00059
	(!A * !X)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00069	0.00069	0.00069
	(!A * !X)	-0.00101	-0.00101	-0.00101
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00139	0.00139	0.00139
	(!A * !X)	-0.00152	-0.00152	-0.00152

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00058	-0.00059	-0.00059
	(!A * !X)	0.00082	0.00083	0.00083
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00067	-0.00069	-0.00069
	(!A * !X)	0.00101	0.00102	0.00101
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00137	-0.00139	-0.00139
	(!A * !X)	0.00152	0.00153	0.00152

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A_N	B	C	X
x	0	x	0
x	1	0	0
0	1	1	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3b_1	12.78720
sky130_fd_sc_hs__and3b_2	14.38560
sky130_fd_sc_hs__and3b_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	X
sky130_fd_sc_hs__and3b_1	0.00204	0.00213	0.00212	0.18630
sky130_fd_sc_hs__and3b_2	0.00211	0.00258	0.00246	0.35877
sky130_fd_sc_hs__and3b_4	0.00238	0.00435	0.00448	0.71139

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3b_1	0.00000	0.00013	0.00017
sky130_fd_sc_hs__and3b_2	0.00000	0.00017	0.00023
sky130_fd_sc_hs__and3b_4	0.00000	0.00031	0.00043

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3b_1	A_N->X (FR)	0.60532	2.30629	12.86750
	B->X (RR)	0.33783	1.72524	9.90377
	C->X (RR)	0.34725	1.70997	9.91925
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.64378	2.16958	13.02290
	B->X (RR)	0.34066	1.57255	10.07940
	C->X (RR)	0.34970	1.54986	10.05950
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.72903	2.11411	13.21850
	B->X (RR)	0.38197	1.46614	10.03400
	C->X (RR)	0.38944	1.42947	9.96821

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3b_1	A_N->X (RF)	0.47196	1.14240	3.91263
	B->X (FF)	0.45206	1.47103	7.18064
	C->X (FF)	0.48197	1.50195	7.26559
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.54709	1.23125	4.07240
	B->X (FF)	0.52573	1.55811	7.57457
	C->X (FF)	0.58126	1.61561	7.68324
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.50365	1.17000	4.07306
	B->X (FF)	0.49135	1.49739	7.51845
	C->X (FF)	0.52277	1.53087	7.59594

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00416	0.00410	0.00404
	A_N	0.00560	0.00555	0.00548
	B	0.00453	0.00451	0.00449
	B	0.00271	0.00268	0.00266
	C	0.00491	0.00488	0.00486
	C	0.00278	0.00275	0.00273
sky130_fd_sc_hs__and3b_2	A_N	0.00584	0.00587	0.00586
	A_N	0.00738	0.00739	0.00740
	B	0.00637	0.00641	0.00641
	B	0.00420	0.00425	0.00425
	C	0.00678	0.00684	0.00682
	C	0.00429	0.00435	0.00434
sky130_fd_sc_hs__and3b_4	A_N	0.01050	0.01070	0.01080
	A_N	0.01198	0.01218	0.01227
	B	0.01158	0.01168	0.01179
	B	0.00780	0.00790	0.00801
	C	0.01241	0.01257	0.01264
	C	0.00784	0.00801	0.00807

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00529	0.00511	0.00499
	A_N	0.00383	0.00367	0.00354
	B	0.00194	0.00186	0.00189
	B	0.00377	0.00371	0.00366
	C	0.00214	0.00208	0.00206
	C	0.00421	0.00416	0.00410
sky130_fd_sc_hs__and3b_2	A_N	0.00672	0.00668	0.00655
	A_N	0.00519	0.00516	0.00502
	B	0.00304	0.00307	0.00351
	B	0.00518	0.00522	0.00519
	C	0.00329	0.00334	0.00378
	C	0.00572	0.00576	0.00571
sky130_fd_sc_hs__and3b_4	A_N	0.01115	0.01131	0.01113
	A_N	0.00968	0.00984	0.00966
	B	0.00636	0.00645	0.00646
	B	0.01013	0.01021	0.01019
	C	0.00667	0.00683	0.00785
	C	0.01112	0.01128	0.01122

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(B * !C * !X)	0.00265	0.00257	0.00252
	(B * !C * !X)	0.00087	0.00077	0.00072
	(!B * !X)	0.00265	0.00256	0.00251
	(!B * !X)	0.00087	0.00077	0.00073
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00289	0.00279	0.00274
	(B * !C * !X)	0.00102	0.00092	0.00087
	(!B * !X)	0.00289	0.00279	0.00273
	(!B * !X)	0.00103	0.00092	0.00087
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00394	0.00383	0.00376
	(B * !C * !X)	0.00186	0.00175	0.00168
	(!B * !X)	0.00392	0.00381	0.00374
	(!B * !X)	0.00186	0.00175	0.00169

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(B * !C * !X)	0.00014	0.00007	0.00003
	(B * !C * !X)	0.00196	0.00189	0.00184
	(!B * !X)	0.00013	0.00006	0.00003
	(!B * !X)	0.00191	0.00185	0.00182
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00021	0.00013	0.00008
	(B * !C * !X)	0.00213	0.00204	0.00198
	(!B * !X)	0.00020	0.00012	0.00009
	(!B * !X)	0.00207	0.00198	0.00195
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00037	0.00028	0.00020
	(B * !C * !X)	0.00254	0.00243	0.00233
	(!B * !X)	0.00038	0.00029	0.00023
	(!B * !X)	0.00245	0.00234	0.00229

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(A_N * C * !X)	0.00068	0.00068	0.00068
	(A_N * C * !X)	-0.00075	-0.00075	-0.00075
	(A_N * !C * !X)	0.00046	0.00046	0.00046
	(A_N * !C * !X)	-0.00075	-0.00075	-0.00075
	(!A_N * !C * !X)	0.00032	0.00032	0.00032
	(!A_N * !C * !X)	-0.00086	-0.00087	-0.00087
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00085	0.00086	0.00085
	(A_N * C * !X)	-0.00090	-0.00091	-0.00090
	(A_N * !C * !X)	0.00058	0.00058	0.00058
	(A_N * !C * !X)	-0.00090	-0.00091	-0.00090
	(!A_N * !C * !X)	0.00043	0.00043	0.00043
	(!A_N * !C * !X)	-0.00104	-0.00103	-0.00104
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00132	0.00133	0.00132
	(A_N * C * !X)	-0.00171	-0.00172	-0.00171
	(A_N * !C * !X)	0.00085	0.00085	0.00085
	(A_N * !C * !X)	-0.00172	-0.00173	-0.00173
	(!A_N * !C * !X)	0.00069	0.00069	0.00069
	(!A_N * !C * !X)	-0.00183	-0.00184	-0.00184

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(A_N * C * !X)	-0.00067	-0.00068	-0.00068
	(A_N * C * !X)	0.00075	0.00076	0.00075
	(A_N * !C * !X)	-0.00046	-0.00046	-0.00046
	(A_N * !C * !X)	0.00075	0.00076	0.00075
	(!A_N * !C * !X)	-0.00031	-0.00030	-0.00031
	(!A_N * !C * !X)	0.00089	0.00089	0.00087
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00084	-0.00086	-0.00085
	(A_N * C * !X)	0.00090	0.00091	0.00090
	(A_N * !C * !X)	-0.00058	-0.00058	-0.00058
	(A_N * !C * !X)	0.00090	0.00091	0.00090
	(!A_N * !C * !X)	-0.00041	-0.00041	-0.00041
	(!A_N * !C * !X)	0.00106	0.00106	0.00104
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00130	-0.00133	-0.00132
	(A_N * C * !X)	0.00171	0.00173	0.00172
	(A_N * !C * !X)	-0.00085	-0.00085	-0.00085
	(A_N * !C * !X)	0.00173	0.00174	0.00173
	(!A_N * !C * !X)	-0.00066	-0.00065	-0.00067
	(!A_N * !C * !X)	0.00190	0.00189	0.00186

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(A_N * B * !X)	0.00058	0.00058	0.00058
	(A_N * B * !X)	-0.00079	-0.00079	-0.00078
	(A_N * !B * !X)	0.00059	0.00060	0.00059
	(A_N * !B * !X)	-0.00079	-0.00079	-0.00079
	(!A_N * !B * !X)	0.00059	0.00060	0.00059
	(!A_N * !B * !X)	-0.00078	-0.00079	-0.00078
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00074	0.00074	0.00074
	(A_N * B * !X)	-0.00090	-0.00090	-0.00090
	(A_N * !B * !X)	0.00075	0.00076	0.00075
	(A_N * !B * !X)	-0.00090	-0.00090	-0.00090
	(!A_N * !B * !X)	0.00075	0.00076	0.00075
	(!A_N * !B * !X)	-0.00090	-0.00090	-0.00090
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00123	0.00123	0.00123
	(A_N * B * !X)	-0.00178	-0.00178	-0.00178
	(A_N * !B * !X)	0.00123	0.00125	0.00123
	(A_N * !B * !X)	-0.00178	-0.00179	-0.00178
	(!A_N * !B * !X)	0.00123	0.00124	0.00123
	(!A_N * !B * !X)	-0.00178	-0.00179	-0.00178

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	(A_N * B * !X)	-0.00057	-0.00058	-0.00058
	(A_N * B * !X)	0.00079	0.00079	0.00079
	(A_N * !B * !X)	-0.00058	-0.00060	-0.00059
	(A_N * !B * !X)	0.00079	0.00079	0.00079
	(!A_N * !B * !X)	-0.00058	-0.00060	-0.00059
	(!A_N * !B * !X)	0.00079	0.00079	0.00079
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00072	-0.00074	-0.00074
	(A_N * B * !X)	0.00090	0.00091	0.00090
	(A_N * !B * !X)	-0.00074	-0.00076	-0.00075
	(A_N * !B * !X)	0.00090	0.00091	0.00090
	(!A_N * !B * !X)	-0.00074	-0.00076	-0.00075
	(!A_N * !B * !X)	0.00090	0.00091	0.00090
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00120	-0.00123	-0.00123
	(A_N * B * !X)	0.00179	0.00180	0.00178
	(A_N * !B * !X)	-0.00122	-0.00125	-0.00123
	(A_N * !B * !X)	0.00179	0.00180	0.00178
	(!A_N * !B * !X)	-0.00122	-0.00124	-0.00123
	(!A_N * !B * !X)	0.00179	0.00180	0.00178

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	x	x	0
1	0	x	0
1	1	0	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3_1	9.59040
sky130_fd_sc_hs__and3_2	11.18880
sky130_fd_sc_hs__and3_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__and3_1	0.00233	0.00211	0.00207	0.18992
sky130_fd_sc_hs__and3_2	0.00231	0.00208	0.00210	0.37446
sky130_fd_sc_hs__and3_4	0.00417	0.00398	0.00412	0.73278

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.00009	0.00014
sky130_fd_sc_hs__and3_2	0.00000	0.00013	0.00017
sky130_fd_sc_hs__and3_4	0.00000	0.00026	0.00035

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (RR)	0.30264	1.67384	9.61732
	B->X (RR)	0.31666	1.70446	9.86034
	C->X (RR)	0.32336	1.68691	9.87734
sky130_fd_sc_hs__and3_2	A->X (RR)	0.32379	1.56214	9.95235
	B->X (RR)	0.33796	1.57910	10.14370
	C->X (RR)	0.34439	1.55314	10.11670
sky130_fd_sc_hs__and3_4	A->X (RR)	0.33814	1.44161	10.00200
	B->X (RR)	0.35750	1.46632	10.21780
	C->X (RR)	0.36463	1.42721	10.15470

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.39637	1.41399	7.05576
	B->X (FF)	0.44291	1.46018	7.17145
	C->X (FF)	0.46290	1.48429	7.24821
sky130_fd_sc_hs__and3_2	A->X (FF)	0.50703	1.52994	7.43509
	B->X (FF)	0.55344	1.57476	7.53327
	C->X (FF)	0.58264	1.60603	7.59940
sky130_fd_sc_hs__and3_4	A->X (FF)	0.48105	1.47760	7.40446
	B->X (FF)	0.52897	1.52779	7.51045
	C->X (FF)	0.56790	1.56787	7.59567

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00432	0.00427	0.00423
	A	0.00222	0.00217	0.00213
	B	0.00444	0.00442	0.00439
	B	0.00222	0.00220	0.00217
	C	0.00482	0.00481	0.00476
	C	0.00221	0.00220	0.00216
sky130_fd_sc_hs__and3_2	A	0.00568	0.00570	0.00570
	A	0.00358	0.00361	0.00361
	B	0.00579	0.00584	0.00586
	B	0.00359	0.00364	0.00366
	C	0.00618	0.00623	0.00626
	C	0.00358	0.00363	0.00367
sky130_fd_sc_hs__and3_4	A	0.01059	0.01063	0.01071
	A	0.00675	0.00681	0.00689
	B	0.01130	0.01142	0.01156
	B	0.00678	0.00690	0.00704
	C	0.01213	0.01235	0.01241
	C	0.00676	0.00699	0.00705

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00142	0.00134	0.00134
	A	0.00352	0.00343	0.00340
	B	0.00189	0.00180	0.00181
	B	0.00409	0.00402	0.00397
	C	0.00208	0.00202	0.00211
	C	0.00459	0.00455	0.00449
sky130_fd_sc_hs__and3_2	A	0.00267	0.00269	0.00269
	A	0.00476	0.00479	0.00478
	B	0.00314	0.00320	0.00382
	B	0.00532	0.00537	0.00536
	C	0.00329	0.00335	0.00341
	C	0.00581	0.00587	0.00583
sky130_fd_sc_hs__and3_4	A	0.00572	0.00576	0.00582
	A	0.00957	0.00962	0.00962
	B	0.00637	0.00646	0.00668
	B	0.01081	0.01093	0.01090
	C	0.00671	0.00689	0.00788
	C	0.01190	0.01206	0.01200

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00048	0.00048	0.00046
	(B * !C * !X)	-0.00083	-0.00083	-0.00087
	(!B * !X)	0.00048	0.00048	0.00047
	(!B * !X)	-0.00086	-0.00086	-0.00087
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00049	0.00048	0.00047
	(B * !C * !X)	-0.00081	-0.00081	-0.00086
	(!B * !X)	0.00049	0.00049	0.00048
	(!B * !X)	-0.00084	-0.00084	-0.00086
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00059	0.00058	0.00053
	(B * !C * !X)	-0.00169	-0.00170	-0.00179
	(!B * !X)	0.00059	0.00059	0.00056
	(!B * !X)	-0.00175	-0.00176	-0.00180

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00046	-0.00046	-0.00045
	(B * !C * !X)	0.00087	0.00088	0.00087
	(!B * !X)	-0.00047	-0.00046	-0.00046
	(!B * !X)	0.00088	0.00088	0.00087
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00046	-0.00047	-0.00047
	(B * !C * !X)	0.00086	0.00086	0.00086
	(!B * !X)	-0.00048	-0.00047	-0.00047
	(!B * !X)	0.00087	0.00086	0.00086
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00053	-0.00053	-0.00052
	(B * !C * !X)	0.00180	0.00181	0.00180
	(!B * !X)	-0.00055	-0.00054	-0.00054
	(!B * !X)	0.00182	0.00181	0.00180

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00031	0.00031	0.00031
	(A * !C * !X)	-0.00074	-0.00075	-0.00074
	(!A * C * !X)	0.00057	0.00057	0.00057
	(!A * C * !X)	-0.00075	-0.00075	-0.00075
	(!A * !C * !X)	0.00033	0.00034	0.00033
	(!A * !C * !X)	-0.00075	-0.00075	-0.00075
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00030	0.00030	0.00030
	(A * !C * !X)	-0.00073	-0.00073	-0.00073
	(!A * C * !X)	0.00056	0.00057	0.00056
	(!A * C * !X)	-0.00073	-0.00073	-0.00073
	(!A * !C * !X)	0.00032	0.00033	0.00032
	(!A * !C * !X)	-0.00073	-0.00073	-0.00073
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00071	0.00072	0.00072
	(A * !C * !X)	-0.00145	-0.00146	-0.00145
	(!A * C * !X)	0.00125	0.00126	0.00125
	(!A * C * !X)	-0.00145	-0.00146	-0.00145
	(!A * !C * !X)	0.00076	0.00076	0.00076
	(!A * !C * !X)	-0.00145	-0.00146	-0.00146

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00030	-0.00030	-0.00030
	(A * !C * !X)	0.00077	0.00077	0.00075
	(!A * C * !X)	-0.00056	-0.00057	-0.00057
	(!A * C * !X)	0.00075	0.00075	0.00075
	(!A * !C * !X)	-0.00033	-0.00034	-0.00033
	(!A * !C * !X)	0.00075	0.00075	0.00075
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00029	-0.00029	-0.00029
	(A * !C * !X)	0.00076	0.00075	0.00073
	(!A * C * !X)	-0.00056	-0.00057	-0.00056
	(!A * C * !X)	0.00073	0.00074	0.00073
	(!A * !C * !X)	-0.00032	-0.00033	-0.00032
	(!A * !C * !X)	0.00073	0.00074	0.00073
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00069	-0.00068	-0.00069
	(A * !C * !X)	0.00151	0.00150	0.00146
	(!A * C * !X)	-0.00124	-0.00126	-0.00125
	(!A * C * !X)	0.00146	0.00147	0.00145
	(!A * !C * !X)	-0.00076	-0.00076	-0.00076
	(!A * !C * !X)	0.00146	0.00147	0.00146

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00059	0.00059	0.00059
	(A * !B * !X)	-0.00077	-0.00077	-0.00077
	(!A * B * !X)	0.00057	0.00058	0.00057
	(!A * B * !X)	-0.00077	-0.00077	-0.00077
	(!A * !B * !X)	0.00059	0.00059	0.00059
	(!A * !B * !X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00058	0.00058	0.00058
	(A * !B * !X)	-0.00077	-0.00078	-0.00078
	(!A * B * !X)	0.00055	0.00057	0.00056
	(!A * B * !X)	-0.00077	-0.00078	-0.00078
	(!A * !B * !X)	0.00058	0.00058	0.00058
	(!A * !B * !X)	-0.00077	-0.00078	-0.00078
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00122	0.00124	0.00123
	(A * !B * !X)	-0.00153	-0.00154	-0.00153
	(!A * B * !X)	0.00121	0.00121	0.00120
	(!A * B * !X)	-0.00154	-0.00155	-0.00154
	(!A * !B * !X)	0.00121	0.00124	0.00123
	(!A * !B * !X)	-0.00152	-0.00154	-0.00153

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00058	-0.00059	-0.00059
	(A * !B * !X)	0.00077	0.00078	0.00077
	(!A * B * !X)	-0.00056	-0.00058	-0.00057
	(!A * B * !X)	0.00077	0.00078	0.00077
	(!A * !B * !X)	-0.00058	-0.00059	-0.00059
	(!A * !B * !X)	0.00077	0.00078	0.00077
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00057	-0.00058	-0.00058
	(A * !B * !X)	0.00078	0.00078	0.00078
	(!A * B * !X)	-0.00055	-0.00057	-0.00056
	(!A * B * !X)	0.00078	0.00078	0.00078
	(!A * !B * !X)	-0.00057	-0.00058	-0.00058
	(!A * !B * !X)	0.00078	0.00078	0.00078
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00121	-0.00124	-0.00123
	(A * !B * !X)	0.00154	0.00155	0.00154
	(!A * B * !X)	-0.00117	-0.00121	-0.00120
	(!A * B * !X)	0.00155	0.00155	0.00154
	(!A * !B * !X)	-0.00121	-0.00124	-0.00123
	(!A * !B * !X)	0.00154	0.00155	0.00154

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A_N	B_N	C	D	X
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4bb_1	15.98400
sky130_fd_sc_hs__and4bb_2	17.58240
sky130_fd_sc_hs__and4bb_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	X
sky130_fd_sc_hs__and4bb_1	0.00209	0.00212	0.00221	0.00216	0.18033
sky130_fd_sc_hs__and4bb_2	0.00212	0.00200	0.00243	0.00248	0.36038
sky130_fd_sc_hs__and4bb_4	0.00229	0.00245	0.00448	0.00432	0.73058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4bb_1	0.00000	0.00016	0.00024
sky130_fd_sc_hs__and4bb_2	0.00000	0.00020	0.00031
sky130_fd_sc_hs__and4bb_4	0.00000	0.00035	0.00055

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4bb_1	A_N->X (FR)	0.70824	2.42190	13.03320
	B_N->X (FR)	0.72706	2.44473	13.04440
	C->X (RR)	0.44246	1.83656	10.12830
	D->X (RR)	0.44873	1.82305	10.10860
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.68690	2.20052	12.82730
	B_N->X (FR)	0.74245	2.25431	12.94440
	C->X (RR)	0.43666	1.63535	10.03790
	D->X (RR)	0.44681	1.61848	9.99670
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.84476	2.25796	13.60050
	B_N->X (FR)	0.92140	2.32859	13.71790
	C->X (RR)	0.51891	1.59130	10.43510
	D->X (RR)	0.52615	1.57220	10.35930

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4bb_1	A_N->X (RF)	0.50228	1.18732	3.99071
	B_N->X (RF)	0.52890	1.21742	4.01861
	C->X (FF)	0.50763	1.53047	7.33562
	D->X (FF)	0.54079	1.56673	7.41378
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.56140	1.25122	4.12075
	B_N->X (RF)	0.61350	1.32160	4.24158
	C->X (FF)	0.58743	1.62943	7.76609
	D->X (FF)	0.62776	1.67212	7.84287
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.55715	1.23797	4.20649
	B_N->X (RF)	0.58939	1.28170	4.27930
	C->X (FF)	0.54758	1.56318	7.70478
	D->X (FF)	0.58473	1.60329	7.78274

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00446	0.00443	0.00435
	A_N	0.00595	0.00591	0.00585
	B_N	0.00471	0.00471	0.00469
	B_N	0.00642	0.00641	0.00640
	C	0.00508	0.00510	0.00510
	C	0.00327	0.00329	0.00329
	D	0.00539	0.00544	0.00544
	D	0.00334	0.00338	0.00338
sky130_fd_sc_hs__and4bb_2	A_N	0.00600	0.00601	0.00598
	A_N	0.00741	0.00742	0.00738
	B_N	0.00663	0.00664	0.00659
	B_N	0.00810	0.00811	0.00807
	C	0.00690	0.00697	0.00695
	C	0.00479	0.00487	0.00484
	D	0.00737	0.00741	0.00740
	D	0.00487	0.00491	0.00491
sky130_fd_sc_hs__and4bb_4	A_N	0.01185	0.01207	0.01223
	A_N	0.01309	0.01330	0.01346
	B_N	0.01274	0.01294	0.01313
	B_N	0.01424	0.01443	0.01469
	C	0.01349	0.01368	0.01377
	C	0.00957	0.00976	0.00987
	D	0.01414	0.01434	0.01446
	D	0.00961	0.00979	0.00994

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00570	0.00546	0.00531
	A_N	0.00421	0.00398	0.00382
	B_N	0.00581	0.00569	0.00558
	B_N	0.00411	0.00399	0.00388
	C	0.00244	0.00240	0.00239
	C	0.00423	0.00420	0.00416
	D	0.00263	0.00263	0.00261
	D	0.00463	0.00463	0.00457
sky130_fd_sc_hs__and4bb_2	A_N	0.00667	0.00658	0.00651
	A_N	0.00526	0.00524	0.00509
	B_N	0.00694	0.00686	0.00674
	B_N	0.00547	0.00544	0.00528
	C	0.00343	0.00348	0.00346
	C	0.00554	0.00559	0.00555
	D	0.00363	0.00369	0.00450
	D	0.00606	0.00612	0.00606
sky130_fd_sc_hs__and4bb_4	A_N	0.01115	0.01130	0.01117
	A_N	0.00992	0.01013	0.00994
	B_N	0.01185	0.01206	0.01187
	B_N	0.01037	0.01057	0.01038
	C	0.00653	0.00666	0.00666
	C	0.01042	0.01056	0.01052
	D	0.00706	0.00726	0.00723
	D	0.01148	0.01166	0.01157

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	(B_N * !X)	0.00266	0.00256	0.00251
	(B_N * !X)	0.00094	0.00084	0.00079
	(!B_N * C * !D * !X)	0.00278	0.00269	0.00263
	(!B_N * C * !D * !X)	0.00106	0.00096	0.00092
	(!B_N * !C * !X)	0.00278	0.00268	0.00263
	(!B_N * !C * !X)	0.00106	0.00096	0.00092
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00271	0.00261	0.00256
	(B_N * !X)	0.00097	0.00087	0.00082
	(!B_N * C * !D * !X)	0.00283	0.00273	0.00267
	(!B_N * C * !D * !X)	0.00108	0.00098	0.00093
	(!B_N * !C * !X)	0.00283	0.00273	0.00267
	(!B_N * !C * !X)	0.00108	0.00098	0.00093
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00371	0.00363	0.00357
	(B_N * !X)	0.00191	0.00182	0.00177
	(!B_N * C * !D * !X)	0.00395	0.00386	0.00380
	(!B_N * C * !D * !X)	0.00214	0.00204	0.00200
	(!B_N * !C * !X)	0.00394	0.00386	0.00380
	(!B_N * !C * !X)	0.00214	0.00205	0.00200

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	(B_N * !X)	0.00033	0.00025	0.00022
	(B_N * !X)	0.00204	0.00197	0.00193
	(!B_N * C * !D * !X)	0.00023	0.00015	0.00010
	(!B_N * C * !D * !X)	0.00199	0.00191	0.00184
	(!B_N * !C * !X)	0.00022	0.00014	0.00010
	(!B_N * !C * !X)	0.00195	0.00187	0.00182
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00027	0.00019	0.00015
	(B_N * !X)	0.00201	0.00193	0.00189
	(!B_N * C * !D * !X)	0.00019	0.00010	0.00004
	(!B_N * C * !D * !X)	0.00198	0.00189	0.00182
	(!B_N * !C * !X)	0.00017	0.00009	0.00004
	(!B_N * !C * !X)	0.00193	0.00184	0.00179
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00081	0.00075	0.00069
	(B_N * !X)	0.00262	0.00255	0.00249
	(!B_N * C * !D * !X)	0.00063	0.00055	0.00046
	(!B_N * C * !D * !X)	0.00254	0.00246	0.00233
	(!B_N * !C * !X)	0.00059	0.00052	0.00046
	(!B_N * !C * !X)	0.00243	0.00236	0.00228

Passive power(pJ) for B_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00264	0.00255	0.00249
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00071	0.00061	0.00056
	(!C * !X)	0.00268	0.00258	0.00252
	(!C * !X)	0.00071	0.00061	0.00057
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00266	0.00257	0.00251
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00086	0.00077	0.00072
	(!C * !X)	0.00270	0.00261	0.00255
	(!C * !X)	0.00086	0.00076	0.00072
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00361	0.00351	0.00344
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00155	0.00144	0.00138
	(!C * !X)	0.00369	0.00360	0.00353
	(!C * !X)	0.00156	0.00145	0.00139

Passive power(pJ) for B_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00058	0.00050	0.00047
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00251	0.00243	0.00240
	(!C * !X)	0.00036	0.00029	0.00026
	(!C * !X)	0.00232	0.00224	0.00221
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00082	0.00075	0.00072
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00263	0.00254	0.00251
	(!C * !X)	0.00056	0.00049	0.00046
	(!C * !X)	0.00240	0.00232	0.00229
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00161	0.00152	0.00148
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00368	0.00358	0.00355
	(!C * !X)	0.00115	0.00106	0.00102
	(!C * !X)	0.00328	0.00319	0.00314

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__and4bb_1	**(A_N * B_N * D * !X)**	0.00077	0.00077	0.00077
	(A_N * B_N * D * !X)	-0.00072	-0.00073	-0.00073
	(A_N * B_N * !D * !X)	0.00058	0.00058	0.00058
	(A_N * B_N * !D * !X)	-0.00073	-0.00073	-0.00073
	(A_N * !B_N * D * !X)	0.00058	0.00058	0.00058
	(A_N * !B_N * D * !X)	-0.00093	-0.00093	-0.00092
	(A_N * !B_N * !D * !X)	0.00037	0.00037	0.00037
	(A_N * !B_N * !D * !X)	-0.00096	-0.00097	-0.00096
	(!A_N * B_N * D * !X)	0.00077	0.00077	0.00077
	(!A_N * B_N * D * !X)	-0.00072	-0.00073	-0.00073
	(!A_N * B_N * !D * !X)	0.00056	0.00057	0.00056
	(!A_N * B_N * !D * !X)	-0.00073	-0.00073	-0.00073
	(!A_N * !B_N * !D * !X)	0.00033	0.00034	0.00034
	(!A_N * !B_N * !D * !X)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00082	0.00082	0.00082
	(A_N * B_N * D * !X)	-0.00086	-0.00087	-0.00086
	(A_N * B_N * !D * !X)	0.00059	0.00059	0.00059
	(A_N * B_N * !D * !X)	-0.00087	-0.00087	-0.00086
	(A_N * !B_N * D * !X)	0.00066	0.00067	0.00066
	(A_N * !B_N * D * !X)	-0.00103	-0.00104	-0.00102
	(A_N * !B_N * !D * !X)	0.00041	0.00042	0.00041
	(A_N * !B_N * !D * !X)	-0.00107	-0.00107	-0.00107
	(!A_N * B_N * D * !X)	0.00082	0.00083	0.00082
	(!A_N * B_N * D * !X)	-0.00086	-0.00087	-0.00086
	(!A_N * B_N * !D * !X)	0.00057	0.00057	0.00057
	(!A_N * B_N * !D * !X)	-0.00087	-0.00087	-0.00086
	(!A_N * !B_N * !D * !X)	0.00038	0.00038	0.00037
	(!A_N * !B_N * !D * !X)	-0.00103	-0.00102	-0.00102

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00136	0.00137	0.00136
	(A_N * B_N * D * !X)	-0.00180	-0.00180	-0.00180
	(A_N * B_N * !D * !X)	0.00093	0.00094	0.00093
	(A_N * B_N * !D * !X)	-0.00180	-0.00181	-0.00180
	(A_N * !B_N * D * !X)	0.00127	0.00126	0.00126
	(A_N * !B_N * D * !X)	-0.00193	-0.00192	-0.00190
	(A_N * !B_N * !D * !X)	0.00082	0.00083	0.00082
	(A_N * !B_N * !D * !X)	-0.00199	-0.00201	-0.00199
	(!A_N * B_N * D * !X)	0.00136	0.00137	0.00136
	(!A_N * B_N * D * !X)	-0.00180	-0.00181	-0.00180
	(!A_N * B_N * !D * !X)	0.00090	0.00091	0.00090
	(!A_N * B_N * !D * !X)	-0.00181	-0.00182	-0.00181
	(!A_N * !B_N * !D * !X)	0.00074	0.00074	0.00074
	(!A_N * !B_N * !D * !X)	-0.00190	-0.00191	-0.00191

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__and4bb_1	**(A_N * B_N * D * !X)**	-0.00076	-0.00077	-0.00077
	(A_N * B_N * D * !X)	0.00073	0.00073	0.00073
	(A_N * B_N * !D * !X)	-0.00058	-0.00058	-0.00058
	(A_N * B_N * !D * !X)	0.00074	0.00073	0.00073
	(A_N * !B_N * D * !X)	-0.00056	-0.00058	-0.00058
	(A_N * !B_N * D * !X)	0.00094	0.00093	0.00092
	(A_N * !B_N * !D * !X)	-0.00037	-0.00037	-0.00037
	(A_N * !B_N * !D * !X)	0.00099	0.00100	0.00099
	(!A_N * B_N * D * !X)	-0.00076	-0.00077	-0.00077
	(!A_N * B_N * D * !X)	0.00073	0.00073	0.00073
	(!A_N * B_N * !D * !X)	-0.00056	-0.00057	-0.00056
	(!A_N * B_N * !D * !X)	0.00073	0.00073	0.00073
	(!A_N * !B_N * !D * !X)	-0.00033	-0.00033	-0.00033
	(!A_N * !B_N * !D * !X)	0.00094	0.00094	0.00093
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00081	-0.00082	-0.00082
	(A_N * B_N * D * !X)	0.00087	0.00087	0.00087
	(A_N * B_N * !D * !X)	-0.00059	-0.00059	-0.00059
	(A_N * B_N * !D * !X)	0.00087	0.00087	0.00087
	(A_N * !B_N * D * !X)	-0.00064	-0.00067	-0.00066
	(A_N * !B_N * D * !X)	0.00105	0.00104	0.00102
	(A_N * !B_N * !D * !X)	-0.00041	-0.00042	-0.00041
	(A_N * !B_N * !D * !X)	0.00109	0.00112	0.00111
	(!A_N * B_N * D * !X)	-0.00081	-0.00083	-0.00082
	(!A_N * B_N * D * !X)	0.00087	0.00087	0.00087
	(!A_N * B_N * !D * !X)	-0.00057	-0.00057	-0.00057
	(!A_N * B_N * !D * !X)	0.00087	0.00087	0.00087
	(!A_N * !B_N * !D * !X)	-0.00037	-0.00037	-0.00036
	(!A_N * !B_N * !D * !X)	0.00104	0.00104	0.00103

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00135	-0.00137	-0.00136
	(A_N * B_N * D * !X)	0.00180	0.00182	0.00180
	(A_N * B_N * !D * !X)	-0.00093	-0.00094	-0.00093
	(A_N * B_N * !D * !X)	0.00180	0.00182	0.00181
	(A_N * !B_N * D * !X)	-0.00122	-0.00126	-0.00126
	(A_N * !B_N * D * !X)	0.00194	0.00193	0.00190
	(A_N * !B_N * !D * !X)	-0.00082	-0.00083	-0.00082
	(A_N * !B_N * !D * !X)	0.00203	0.00207	0.00205
	(!A_N * B_N * D * !X)	-0.00135	-0.00137	-0.00136
	(!A_N * B_N * D * !X)	0.00180	0.00182	0.00180
	(!A_N * B_N * !D * !X)	-0.00090	-0.00091	-0.00090
	(!A_N * B_N * !D * !X)	0.00181	0.00182	0.00181
	(!A_N * !B_N * !D * !X)	-0.00073	-0.00072	-0.00072
	(!A_N * !B_N * !D * !X)	0.00195	0.00194	0.00192

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	(A_N * B_N * C * !X)	0.00067	0.00068	0.00068
	(A_N * B_N * C * !X)	-0.00070	-0.00071	-0.00071
	(A_N * !C * !X)	0.00069	0.00069	0.00069
	(A_N * !C * !X)	-0.00071	-0.00071	-0.00071
	(A_N * !B_N * C * !X)	0.00058	0.00058	0.00058
	(A_N * !B_N * C * !X)	-0.00083	-0.00083	-0.00082
	(!A_N * B_N * C * !X)	0.00067	0.00069	0.00068
	(!A_N * B_N * C * !X)	-0.00070	-0.00071	-0.00071
	(!A_N * B_N * !C * !X)	0.00069	0.00070	0.00069
	(!A_N * B_N * !C * !X)	-0.00070	-0.00071	-0.00071
	(!A_N * !B_N * !C * !X)	0.00060	0.00060	0.00060
	(!A_N * !B_N * !C * !X)	-0.00080	-0.00080	-0.00080

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00072	0.00072	0.00071
	(A_N * B_N * C * !X)	-0.00093	-0.00093	-0.00092
	(A_N * !C * !X)	0.00072	0.00073	0.00073
	(A_N * !C * !X)	-0.00092	-0.00092	-0.00092
	(A_N * !B_N * C * !X)	0.00067	0.00067	0.00067
	(A_N * !B_N * C * !X)	-0.00099	-0.00099	-0.00098
	(!A_N * B_N * C * !X)	0.00072	0.00072	0.00071
	(!A_N * B_N * C * !X)	-0.00093	-0.00093	-0.00092
	(!A_N * B_N * !C * !X)	0.00072	0.00073	0.00073
	(!A_N * B_N * !C * !X)	-0.00092	-0.00093	-0.00092
	(!A_N * !B_N * !C * !X)	0.00069	0.00070	0.00069
	(!A_N * !B_N * !C * !X)	-0.00095	-0.00096	-0.00096
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00119	0.00120	0.00119
	(A_N * B_N * C * !X)	-0.00178	-0.00179	-0.00178
	(A_N * !C * !X)	0.00121	0.00121	0.00121
	(A_N * !C * !X)	-0.00178	-0.00179	-0.00178
	(A_N * !B_N * C * !X)	0.00117	0.00118	0.00117
	(A_N * !B_N * C * !X)	-0.00184	-0.00184	-0.00183
	(!A_N * B_N * C * !X)	0.00119	0.00119	0.00119
	(!A_N * B_N * C * !X)	-0.00178	-0.00178	-0.00178
	(!A_N * B_N * !C * !X)	0.00121	0.00122	0.00121
	(!A_N * B_N * !C * !X)	-0.00178	-0.00179	-0.00178
	(!A_N * !B_N * !C * !X)	0.00121	0.00121	0.00120
	(!A_N * !B_N * !C * !X)	-0.00178	-0.00179	-0.00178

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__and4bb_1	**(A_N * B_N * C * !X)**	-0.00067	-0.00068	-0.00068
	(A_N * B_N * C * !X)	0.00071	0.00071	0.00071
	(A_N * !C * !X)	-0.00068	-0.00069	-0.00069
	(A_N * !C * !X)	0.00071	0.00071	0.00071
	(A_N * !B_N * C * !X)	-0.00057	-0.00058	-0.00058
	(A_N * !B_N * C * !X)	0.00084	0.00083	0.00082
	(!A_N * B_N * C * !X)	-0.00067	-0.00069	-0.00068
	(!A_N * B_N * C * !X)	0.00071	0.00071	0.00071
	(!A_N * B_N * !C * !X)	-0.00068	-0.00070	-0.00069
	(!A_N * B_N * !C * !X)	0.00071	0.00071	0.00071
	(!A_N * !B_N * !C * !X)	-0.00059	-0.00060	-0.00060
	(!A_N * !B_N * !C * !X)	0.00080	0.00081	0.00080
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00070	-0.00072	-0.00071
	(A_N * B_N * C * !X)	0.00093	0.00093	0.00093
	(A_N * !C * !X)	-0.00071	-0.00073	-0.00073
	(A_N * !C * !X)	0.00092	0.00094	0.00093
	(A_N * !B_N * C * !X)	-0.00065	-0.00067	-0.00067
	(A_N * !B_N * C * !X)	0.00100	0.00099	0.00098
	(!A_N * B_N * C * !X)	-0.00070	-0.00072	-0.00071
	(!A_N * B_N * C * !X)	0.00093	0.00093	0.00093
	(!A_N * B_N * !C * !X)	-0.00071	-0.00073	-0.00073
	(!A_N * B_N * !C * !X)	0.00092	0.00094	0.00093
	(!A_N * !B_N * !C * !X)	-0.00068	-0.00070	-0.00069
	(!A_N * !B_N * !C * !X)	0.00096	0.00097	0.00096

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00116	-0.00120	-0.00119
	(A_N * B_N * C * !X)	0.00179	0.00179	0.00178
	(A_N * !C * !X)	-0.00119	-0.00121	-0.00121
	(A_N * !C * !X)	0.00178	0.00179	0.00178
	(A_N * !B_N * C * !X)	-0.00113	-0.00118	-0.00117
	(A_N * !B_N * C * !X)	0.00185	0.00184	0.00183
	(!A_N * B_N * C * !X)	-0.00116	-0.00119	-0.00119
	(!A_N * B_N * C * !X)	0.00179	0.00179	0.00178
	(!A_N * B_N * !C * !X)	-0.00118	-0.00122	-0.00121
	(!A_N * B_N * !C * !X)	0.00178	0.00180	0.00178
	(!A_N * !B_N * !C * !X)	-0.00118	-0.00121	-0.00120
	(!A_N * !B_N * !C * !X)	0.00178	0.00180	0.00179

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A_N	B	C	D	X
x	0	x	x	0
x	1	0	x	0
x	1	1	0	0
0	1	1	1	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4b_1	14.38560
sky130_fd_sc_hs__and4b_2	14.38560
sky130_fd_sc_hs__and4b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	X
sky130_fd_sc_hs__and4b_1	0.00222	0.00233	0.00223	0.00215	0.18595
sky130_fd_sc_hs__and4b_2	0.00205	0.00248	0.00247	0.00255	0.35907
sky130_fd_sc_hs__and4b_4	0.00225	0.00455	0.00492	0.00451	0.68164

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4b_1	0.00000	0.00013	0.00021
sky130_fd_sc_hs__and4b_2	0.00000	0.00017	0.00027
sky130_fd_sc_hs__and4b_4	0.00000	0.00031	0.00051

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4b_1	A_N->X (FR)	0.66438	2.36471	12.90700
	B->X (RR)	0.40560	1.81410	10.07750
	C->X (RR)	0.41596	1.80073	10.08740
	D->X (RR)	0.42602	1.78963	10.08010
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.72010	2.25130	13.15340
	B->X (RR)	0.40895	1.65684	10.23370
	C->X (RR)	0.42326	1.64416	10.22810
	D->X (RR)	0.43144	1.62825	10.18620
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.89877	2.30622	13.62670
	B->X (RR)	0.46045	1.57887	10.29650
	C->X (RR)	0.49023	1.57789	10.30110
	D->X (RR)	0.49327	1.55894	10.25010

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4b_1	A_N->X (RF)	0.47375	1.15683	3.96182
	B->X (FF)	0.46682	1.49254	7.27094
	C->X (FF)	0.49929	1.52705	7.34433
	D->X (FF)	0.54152	1.56899	7.43862
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.57746	1.27736	4.16701
	B->X (FF)	0.55515	1.58814	7.63826
	C->X (FF)	0.59784	1.63176	7.72342
	D->X (FF)	0.63415	1.67204	7.79528
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.60046	1.29521	4.27563
	B->X (FF)	0.52942	1.53676	7.57263
	C->X (FF)	0.57808	1.58635	7.66983
	D->X (FF)	0.64287	1.65207	7.77145

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00430	0.00422	0.00415
	A_N	0.00570	0.00562	0.00555
	B	0.00483	0.00480	0.00476
	B	0.00268	0.00265	0.00261
	C	0.00521	0.00518	0.00515
	C	0.00279	0.00276	0.00273
	D	0.00548	0.00544	0.00540
	D	0.00278	0.00274	0.00270
sky130_fd_sc_hs__and4b_2	A_N	0.00594	0.00596	0.00593
	A_N	0.00726	0.00727	0.00726
	B	0.00631	0.00637	0.00638
	B	0.00402	0.00408	0.00409
	C	0.00670	0.00677	0.00678
	C	0.00412	0.00420	0.00420
	D	0.00718	0.00726	0.00725
	D	0.00412	0.00419	0.00419
sky130_fd_sc_hs__and4b_4	A_N	0.01186	0.01207	0.01224
	A_N	0.01336	0.01356	0.01379
	B	0.01256	0.01272	0.01286
	B	0.00839	0.00854	0.00870
	C	0.01369	0.01387	0.01400
	C	0.00865	0.00883	0.00898
	D	0.01406	0.01425	0.01442
	D	0.00863	0.00881	0.00900

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00525	0.00508	0.00495
	A_N	0.00384	0.00368	0.00355
	B	0.00195	0.00186	0.00206
	B	0.00409	0.00400	0.00395
	C	0.00202	0.00197	0.00203
	C	0.00440	0.00435	0.00428
	D	0.00238	0.00232	0.00228
	D	0.00497	0.00492	0.00483
sky130_fd_sc_hs__and4b_2	A_N	0.00698	0.00693	0.00676
	A_N	0.00567	0.00562	0.00545
	B	0.00321	0.00325	0.00369
	B	0.00549	0.00552	0.00549
	C	0.00347	0.00352	0.00363
	C	0.00598	0.00604	0.00599
	D	0.00362	0.00367	0.00362
	D	0.00656	0.00660	0.00652
sky130_fd_sc_hs__and4b_4	A_N	0.01202	0.01217	0.01191
	A_N	0.01054	0.01069	0.01042
	B	0.00600	0.00610	0.00620
	B	0.01016	0.01025	0.01026
	C	0.00642	0.00652	0.00739
	C	0.01131	0.01142	0.01135
	D	0.00708	0.00729	0.00726
	D	0.01227	0.01247	0.01236

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(B * C * !D * !X)	0.00274	0.00263	0.00258
	(B * C * !D * !X)	0.00079	0.00067	0.00062
	(B * !C * !X)	0.00274	0.00263	0.00258
	(B * !C * !X)	0.00079	0.00067	0.00062
	(!B * !X)	0.00273	0.00262	0.00257
	(!B * !X)	0.00079	0.00067	0.00062
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00304	0.00294	0.00289
	(B * C * !D * !X)	0.00118	0.00109	0.00104
	(B * !C * !X)	0.00303	0.00294	0.00289
	(B * !C * !X)	0.00118	0.00109	0.00104
	(!B * !X)	0.00302	0.00293	0.00288
	(!B * !X)	0.00119	0.00109	0.00104
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00468	0.00459	0.00452
	(B * C * !D * !X)	0.00242	0.00233	0.00227
	(B * !C * !X)	0.00468	0.00458	0.00452
	(B * !C * !X)	0.00242	0.00233	0.00227
	(!B * !X)	0.00464	0.00455	0.00449
	(!B * !X)	0.00242	0.00233	0.00227

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(B * C * !D * !X)	0.00020	0.00011	0.00005
	(B * C * !D * !X)	0.00220	0.00211	0.00203
	(B * !C * !X)	0.00018	0.00009	0.00005
	(B * !C * !X)	0.00217	0.00208	0.00202
	(!B * !X)	0.00018	0.00009	0.00006
	(!B * !X)	0.00213	0.00204	0.00200
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00025	0.00017	0.00011
	(B * C * !D * !X)	0.00217	0.00208	0.00200
	(B * !C * !X)	0.00024	0.00016	0.00011
	(B * !C * !X)	0.00214	0.00205	0.00199
	(!B * !X)	0.00024	0.00016	0.00012
	(!B * !X)	0.00209	0.00200	0.00196
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00049	0.00040	0.00030
	(B * C * !D * !X)	0.00287	0.00278	0.00262
	(B * !C * !X)	0.00047	0.00038	0.00030
	(B * !C * !X)	0.00280	0.00271	0.00260
	(!B * !X)	0.00046	0.00038	0.00033
	(!B * !X)	0.00269	0.00260	0.00255

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__and4b_1	**(A_N * C * D * !X)**	0.00070	0.00071	0.00071
	(A_N * C * D * !X)	-0.00083	-0.00084	-0.00084
	(A_N * C * !D * !X)	0.00050	0.00050	0.00050
	(A_N * C * !D * !X)	-0.00084	-0.00084	-0.00084
	(A_N * !C * !X)	0.00047	0.00048	0.00047
	(A_N * !C * !X)	-0.00084	-0.00084	-0.00084
	(!A_N * C * !D * !X)	0.00033	0.00034	0.00034
	(!A_N * C * !D * !X)	-0.00094	-0.00094	-0.00095
	(!A_N * !C * !X)	0.00034	0.00034	0.00034
	(!A_N * !C * !X)	-0.00095	-0.00096	-0.00096
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00081	0.00082	0.00081
	(A_N * C * D * !X)	-0.00087	-0.00088	-0.00087
	(A_N * C * !D * !X)	0.00056	0.00056	0.00055
	(A_N * C * !D * !X)	-0.00088	-0.00088	-0.00087
	(A_N * !C * !X)	0.00055	0.00055	0.00055
	(A_N * !C * !X)	-0.00088	-0.00088	-0.00088
	(!A_N * C * !D * !X)	0.00036	0.00036	0.00037
	(!A_N * C * !D * !X)	-0.00100	-0.00100	-0.00101
	(!A_N * !C * !X)	0.00038	0.00039	0.00038
	(!A_N * !C * !X)	-0.00101	-0.00102	-0.00102
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00167	0.00168	0.00167
	(A_N * C * D * !X)	-0.00165	-0.00165	-0.00165
	(A_N * C * !D * !X)	0.00123	0.00123	0.00123
	(A_N * C * !D * !X)	-0.00166	-0.00165	-0.00165
	(A_N * !C * !X)	0.00124	0.00124	0.00124
	(A_N * !C * !X)	-0.00165	-0.00166	-0.00165
	(!A_N * C * !D * !X)	0.00081	0.00081	0.00081
	(!A_N * C * !D * !X)	-0.00195	-0.00196	-0.00198
	(!A_N * !C * !X)	0.00084	0.00084	0.00084
	(!A_N * !C * !X)	-0.00198	-0.00199	-0.00199

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(A_N * C * D * !X)	-0.00070	-0.00071	-0.00071
	(A_N * C * D * !X)	0.00084	0.00084	0.00084
	(A_N * C * !D * !X)	-0.00050	-0.00050	-0.00050
	(A_N * C * !D * !X)	0.00084	0.00084	0.00084
	(A_N * !C * !X)	-0.00047	-0.00048	-0.00047
	(A_N * !C * !X)	0.00084	0.00084	0.00084
	(!A_N * C * !D * !X)	-0.00032	-0.00032	-0.00032
	(!A_N * C * !D * !X)	0.00097	0.00098	0.00096
	(!A_N * !C * !X)	-0.00032	-0.00032	-0.00033
	(!A_N * !C * !X)	0.00098	0.00098	0.00096
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00081	-0.00082	-0.00081
	(A_N * C * D * !X)	0.00088	0.00088	0.00087
	(A_N * C * !D * !X)	-0.00056	-0.00056	-0.00055
	(A_N * C * !D * !X)	0.00088	0.00088	0.00088
	(A_N * !C * !X)	-0.00055	-0.00055	-0.00055
	(A_N * !C * !X)	0.00088	0.00088	0.00088
	(!A_N * C * !D * !X)	-0.00036	-0.00036	-0.00036
	(!A_N * C * !D * !X)	0.00105	0.00104	0.00103
	(!A_N * !C * !X)	-0.00037	-0.00036	-0.00037
	(!A_N * !C * !X)	0.00105	0.00104	0.00103

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00166	-0.00168	-0.00167
	(A_N * C * D * !X)	0.00165	0.00166	0.00165
	(A_N * C * !D * !X)	-0.00123	-0.00123	-0.00123
	(A_N * C * !D * !X)	0.00166	0.00166	0.00165
	(A_N * !C * !X)	-0.00124	-0.00124	-0.00124
	(A_N * !C * !X)	0.00165	0.00166	0.00166
	(!A_N * C * !D * !X)	-0.00079	-0.00078	-0.00079
	(!A_N * C * !D * !X)	0.00204	0.00204	0.00201
	(!A_N * !C * !X)	-0.00079	-0.00080	-0.00081
	(!A_N * !C * !X)	0.00203	0.00204	0.00201

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__and4b_1	**(A_N * B * D * !X)**	0.00071	0.00071	0.00070
	(A_N * B * D * !X)	-0.00074	-0.00074	-0.00074
	(A_N * B * !D * !X)	0.00051	0.00051	0.00051
	(A_N * B * !D * !X)	-0.00075	-0.00075	-0.00075
	(A_N * !B * D * !X)	0.00071	0.00072	0.00071
	(A_N * !B * D * !X)	-0.00074	-0.00075	-0.00074
	(A_N * !B * !D * !X)	0.00051	0.00051	0.00051
	(A_N * !B * !D * !X)	-0.00075	-0.00075	-0.00075
	(!A_N * B * !D * !X)	0.00046	0.00046	0.00046
	(!A_N * B * !D * !X)	-0.00075	-0.00075	-0.00075
	(!A_N * !B * D * !X)	0.00071	0.00071	0.00071
	(!A_N * !B * D * !X)	-0.00075	-0.00075	-0.00075
	(!A_N * !B * !D * !X)	0.00049	0.00049	0.00049
	(!A_N * !B * !D * !X)	-0.00075	-0.00075	-0.00075

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00068	0.00068	0.00068
	(A_N * B * D * !X)	-0.00086	-0.00087	-0.00086
	(A_N * B * !D * !X)	0.00043	0.00043	0.00043
	(A_N * B * !D * !X)	-0.00086	-0.00087	-0.00086
	(A_N * !B * D * !X)	0.00069	0.00070	0.00069
	(A_N * !B * D * !X)	-0.00086	-0.00087	-0.00086
	(A_N * !B * !D * !X)	0.00043	0.00043	0.00043
	(A_N * !B * !D * !X)	-0.00086	-0.00087	-0.00086
	(!A_N * B * !D * !X)	0.00037	0.00037	0.00037
	(!A_N * B * !D * !X)	-0.00087	-0.00088	-0.00087
	(!A_N * !B * D * !X)	0.00068	0.00069	0.00068
	(!A_N * !B * D * !X)	-0.00087	-0.00087	-0.00087
	(!A_N * !B * !D * !X)	0.00040	0.00041	0.00040
	(!A_N * !B * !D * !X)	-0.00087	-0.00088	-0.00087
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00154	0.00154	0.00153
	(A_N * B * D * !X)	-0.00177	-0.00177	-0.00176
	(A_N * B * !D * !X)	0.00112	0.00112	0.00111
	(A_N * B * !D * !X)	-0.00177	-0.00177	-0.00176
	(A_N * !B * D * !X)	0.00155	0.00156	0.00155
	(A_N * !B * D * !X)	-0.00176	-0.00177	-0.00176
	(A_N * !B * !D * !X)	0.00114	0.00114	0.00114
	(A_N * !B * !D * !X)	-0.00176	-0.00177	-0.00176
	(!A_N * B * !D * !X)	0.00101	0.00102	0.00102
	(!A_N * B * !D * !X)	-0.00179	-0.00180	-0.00179
	(!A_N * !B * D * !X)	0.00152	0.00153	0.00153
	(!A_N * !B * D * !X)	-0.00179	-0.00179	-0.00179
	(!A_N * !B * !D * !X)	0.00108	0.00108	0.00108
	(!A_N * !B * !D * !X)	-0.00180	-0.00180	-0.00179

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(A_N * B * D * !X)	-0.00068	-0.00071	-0.00070
	(A_N * B * D * !X)	0.00074	0.00075	0.00074
	(A_N * B * !D * !X)	-0.00051	-0.00051	-0.00051
	(A_N * B * !D * !X)	0.00075	0.00076	0.00075
	(A_N * !B * D * !X)	-0.00070	-0.00072	-0.00071
	(A_N * !B * D * !X)	0.00074	0.00075	0.00074
	(A_N * !B * !D * !X)	-0.00051	-0.00051	-0.00051
	(A_N * !B * !D * !X)	0.00075	0.00076	0.00075
	(!A_N * B * !D * !X)	-0.00045	-0.00045	-0.00045
	(!A_N * B * !D * !X)	0.00076	0.00076	0.00076
	(!A_N * !B * D * !X)	-0.00070	-0.00071	-0.00071
	(!A_N * !B * D * !X)	0.00075	0.00076	0.00075
	(!A_N * !B * !D * !X)	-0.00049	-0.00049	-0.00049
	(!A_N * !B * !D * !X)	0.00076	0.00076	0.00075
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00066	-0.00068	-0.00068
	(A_N * B * D * !X)	0.00087	0.00087	0.00086
	(A_N * B * !D * !X)	-0.00043	-0.00043	-0.00043
	(A_N * B * !D * !X)	0.00087	0.00087	0.00087
	(A_N * !B * D * !X)	-0.00068	-0.00070	-0.00069
	(A_N * !B * D * !X)	0.00086	0.00087	0.00086
	(A_N * !B * !D * !X)	-0.00043	-0.00043	-0.00043
	(A_N * !B * !D * !X)	0.00088	0.00087	0.00087
	(!A_N * B * !D * !X)	-0.00036	-0.00037	-0.00036
	(!A_N * B * !D * !X)	0.00088	0.00089	0.00088
	(!A_N * !B * D * !X)	-0.00067	-0.00069	-0.00068
	(!A_N * !B * D * !X)	0.00087	0.00088	0.00087
	(!A_N * !B * !D * !X)	-0.00040	-0.00041	-0.00040
	(!A_N * !B * !D * !X)	0.00087	0.00088	0.00088

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00150	-0.00154	-0.00153
	(A_N * B * D * !X)	0.00177	0.00177	0.00177
	(A_N * B * !D * !X)	-0.00112	-0.00112	-0.00111
	(A_N * B * !D * !X)	0.00177	0.00178	0.00177
	(A_N * !B * D * !X)	-0.00154	-0.00156	-0.00155
	(A_N * !B * D * !X)	0.00177	0.00178	0.00177
	(A_N * !B * !D * !X)	-0.00114	-0.00114	-0.00114
	(A_N * !B * !D * !X)	0.00176	0.00178	0.00177
	(!A_N * B * !D * !X)	-0.00101	-0.00100	-0.00100
	(!A_N * B * !D * !X)	0.00182	0.00181	0.00180
	(!A_N * !B * D * !X)	-0.00151	-0.00153	-0.00153
	(!A_N * !B * D * !X)	0.00180	0.00180	0.00179
	(!A_N * !B * !D * !X)	-0.00108	-0.00108	-0.00108
	(!A_N * !B * !D * !X)	0.00180	0.00181	0.00180

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	(A_N * B * C * !X)	0.00057	0.00057	0.00057
	(A_N * B * C * !X)	-0.00081	-0.00082	-0.00082
	(A_N * !C * !X)	0.00060	0.00060	0.00059
	(A_N * !C * !X)	-0.00082	-0.00082	-0.00082
	(A_N * !B * C * !X)	0.00057	0.00058	0.00057
	(A_N * !B * C * !X)	-0.00082	-0.00082	-0.00082
	(!A_N * B * !C * !X)	0.00060	0.00060	0.00059
	(!A_N * B * !C * !X)	-0.00082	-0.00082	-0.00082
	(!A_N * !B * C * !X)	0.00057	0.00057	0.00057
	(!A_N * !B * C * !X)	-0.00082	-0.00082	-0.00082
	(!A_N * !B * !C * !X)	0.00060	0.00060	0.00059
	(!A_N * !B * !C * !X)	-0.00082	-0.00082	-0.00082

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00068	0.00068	0.00068
	(A_N * B * C * !X)	-0.00094	-0.00094	-0.00094
	(A_N * !C * !X)	0.00070	0.00070	0.00070
	(A_N * !C * !X)	-0.00094	-0.00094	-0.00094
	(A_N * !B * C * !X)	0.00067	0.00068	0.00068
	(A_N * !B * C * !X)	-0.00094	-0.00094	-0.00094
	(!A_N * B * !C * !X)	0.00069	0.00069	0.00069
	(!A_N * B * !C * !X)	-0.00095	-0.00095	-0.00095
	(!A_N * !B * C * !X)	0.00067	0.00067	0.00067
	(!A_N * !B * C * !X)	-0.00095	-0.00096	-0.00095
	(!A_N * !B * !C * !X)	0.00069	0.00069	0.00069
	(!A_N * !B * !C * !X)	-0.00095	-0.00095	-0.00095
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00123	0.00123	0.00122
	(A_N * B * C * !X)	-0.00176	-0.00176	-0.00175
	(A_N * !C * !X)	0.00124	0.00125	0.00124
	(A_N * !C * !X)	-0.00175	-0.00176	-0.00175
	(A_N * !B * C * !X)	0.00123	0.00123	0.00122
	(A_N * !B * C * !X)	-0.00174	-0.00175	-0.00175
	(!A_N * B * !C * !X)	0.00122	0.00122	0.00122
	(!A_N * B * !C * !X)	-0.00177	-0.00178	-0.00177
	(!A_N * !B * C * !X)	0.00121	0.00121	0.00120
	(!A_N * !B * C * !X)	-0.00177	-0.00178	-0.00178
	(!A_N * !B * !C * !X)	0.00122	0.00122	0.00122
	(!A_N * !B * !C * !X)	-0.00177	-0.00177	-0.00177

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__and4b_1	**(A_N * B * C * !X)**	-0.00056	-0.00057	-0.00057
	(A_N * B * C * !X)	0.00082	0.00082	0.00082
	(A_N * !C * !X)	-0.00058	-0.00060	-0.00059
	(A_N * !C * !X)	0.00082	0.00082	0.00082
	(A_N * !B * C * !X)	-0.00056	-0.00058	-0.00057
	(A_N * !B * C * !X)	0.00082	0.00082	0.00082
	(!A_N * B * !C * !X)	-0.00058	-0.00060	-0.00059
	(!A_N * B * !C * !X)	0.00082	0.00082	0.00082
	(!A_N * !B * C * !X)	-0.00056	-0.00057	-0.00057
	(!A_N * !B * C * !X)	0.00082	0.00082	0.00082
	(!A_N * !B * !C * !X)	-0.00058	-0.00060	-0.00059
	(!A_N * !B * !C * !X)	0.00082	0.00082	0.00082
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00066	-0.00068	-0.00068
	(A_N * B * C * !X)	0.00095	0.00095	0.00094
	(A_N * !C * !X)	-0.00068	-0.00070	-0.00070
	(A_N * !C * !X)	0.00094	0.00095	0.00094
	(A_N * !B * C * !X)	-0.00066	-0.00068	-0.00068
	(A_N * !B * C * !X)	0.00094	0.00095	0.00094
	(!A_N * B * !C * !X)	-0.00067	-0.00069	-0.00069
	(!A_N * B * !C * !X)	0.00095	0.00096	0.00095
	(!A_N * !B * C * !X)	-0.00065	-0.00067	-0.00067
	(!A_N * !B * C * !X)	0.00095	0.00096	0.00095
	(!A_N * !B * !C * !X)	-0.00067	-0.00069	-0.00069
	(!A_N * !B * !C * !X)	0.00095	0.00096	0.00095

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00118	-0.00123	-0.00122
	(A_N * B * C * !X)	0.00176	0.00176	0.00175
	(A_N * !C * !X)	-0.00123	-0.00125	-0.00124
	(A_N * !C * !X)	0.00176	0.00177	0.00175
	(A_N * !B * C * !X)	-0.00118	-0.00123	-0.00122
	(A_N * !B * C * !X)	0.00174	0.00177	0.00175
	(!A_N * B * !C * !X)	-0.00120	-0.00122	-0.00122
	(!A_N * B * !C * !X)	0.00178	0.00179	0.00178
	(!A_N * !B * C * !X)	-0.00115	-0.00121	-0.00120
	(!A_N * !B * C * !X)	0.00177	0.00179	0.00178
	(!A_N * !B * !C * !X)	-0.00121	-0.00122	-0.00122
	(!A_N * !B * !C * !X)	0.00178	0.00179	0.00178

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D	X
0	x	x	x	0
1	0	x	x	0
1	1	0	x	0
1	1	1	0	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4_1	11.18880
sky130_fd_sc_hs__and4_2	12.78720
sky130_fd_sc_hs__and4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__and4_1	0.00237	0.00231	0.00222	0.00224	0.18660
sky130_fd_sc_hs__and4_2	0.00255	0.00260	0.00245	0.00241	0.35833
sky130_fd_sc_hs__and4_4	0.00436	0.00447	0.00493	0.00434	0.73135

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.00009	0.00017
sky130_fd_sc_hs__and4_2	0.00000	0.00014	0.00024
sky130_fd_sc_hs__and4_4	0.00000	0.00027	0.00048

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (RR)	0.37892	1.77979	9.83937
	B->X (RR)	0.39527	1.80972	10.07210
	C->X (RR)	0.40448	1.79659	10.08420
	D->X (RR)	0.41579	1.78453	10.07690
sky130_fd_sc_hs__and4_2	A->X (RR)	0.38498	1.64386	10.07420
	B->X (RR)	0.40427	1.66857	10.26660
	C->X (RR)	0.41535	1.65060	10.25510
	D->X (RR)	0.42319	1.63071	10.21240
sky130_fd_sc_hs__and4_4	A->X (RR)	0.40616	1.52141	10.15100
	B->X (RR)	0.42831	1.55102	10.36750
	C->X (RR)	0.45061	1.54405	10.37330
	D->X (RR)	0.45277	1.52145	10.32260

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.42886	1.45216	7.15499
	B->X (FF)	0.46642	1.49059	7.25074
	C->X (FF)	0.49961	1.52496	7.33193
	D->X (FF)	0.54204	1.56668	7.41835
sky130_fd_sc_hs__and4_2	A->X (FF)	0.49965	1.53720	7.54432
	B->X (FF)	0.55062	1.58732	7.64642
	C->X (FF)	0.59029	1.62770	7.72485
	D->X (FF)	0.64493	1.68635	7.82269
sky130_fd_sc_hs__and4_4	A->X (FF)	0.47862	1.49170	7.53320
	B->X (FF)	0.50035	1.51156	7.59776
	C->X (FF)	0.54496	1.55701	7.68920
	D->X (FF)	0.57233	1.58822	7.75402

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00463	0.00458	0.00454
	A	0.00243	0.00239	0.00234
	B	0.00490	0.00488	0.00486
	B	0.00244	0.00242	0.00240
	C	0.00523	0.00523	0.00520
	C	0.00244	0.00244	0.00241
	D	0.00565	0.00563	0.00560
	D	0.00245	0.00244	0.00240
sky130_fd_sc_hs__and4_2	A	0.00623	0.00625	0.00623
	A	0.00378	0.00382	0.00380
	B	0.00663	0.00670	0.00670
	B	0.00383	0.00390	0.00391
	C	0.00698	0.00703	0.00706
	C	0.00384	0.00391	0.00392
	D	0.00743	0.00749	0.00751
	D	0.00384	0.00390	0.00392
sky130_fd_sc_hs__and4_4	A	0.01148	0.01151	0.01161
	A	0.00732	0.00736	0.00747
	B	0.01234	0.01244	0.01261
	B	0.00729	0.00740	0.00759
	C	0.01342	0.01357	0.01370
	C	0.00735	0.00749	0.00765
	D	0.01369	0.01388	0.01403
	D	0.00732	0.00750	0.00769

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00174	0.00160	0.00160
	A	0.00393	0.00383	0.00379
	B	0.00196	0.00185	0.00189
	B	0.00439	0.00432	0.00427
	C	0.00211	0.00206	0.00222
	C	0.00484	0.00479	0.00473
	D	0.00233	0.00228	0.00246
	D	0.00540	0.00535	0.00526
sky130_fd_sc_hs__and4_2	A	0.00288	0.00287	0.00336
	A	0.00532	0.00533	0.00530
	B	0.00313	0.00314	0.00359
	B	0.00588	0.00590	0.00586
	C	0.00341	0.00346	0.00365
	C	0.00644	0.00650	0.00645
	D	0.00362	0.00368	0.00364
	D	0.00705	0.00710	0.00701
sky130_fd_sc_hs__and4_4	A	0.00575	0.00580	0.00583
	A	0.00992	0.00997	0.00996
	B	0.00597	0.00605	0.00726
	B	0.01096	0.01103	0.01102
	C	0.00633	0.00642	0.00640
	C	0.01221	0.01231	0.01222
	D	0.00703	0.00722	0.00759
	D	0.01311	0.01329	0.01319

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(B * C * !D * !X)	0.00031	0.00030	0.00027
	(B * C * !D * !X)	-0.00089	-0.00089	-0.00095
	(B * !C * !X)	0.00029	0.00029	0.00027
	(B * !C * !X)	-0.00092	-0.00092	-0.00096
	(!B * !X)	0.00028	0.00028	0.00028
	(!B * !X)	-0.00095	-0.00095	-0.00096
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00037	0.00037	0.00033
	(B * C * !D * !X)	-0.00100	-0.00101	-0.00109
	(B * !C * !X)	0.00035	0.00036	0.00033
	(B * !C * !X)	-0.00104	-0.00105	-0.00109
	(!B * !X)	0.00034	0.00034	0.00033
	(!B * !X)	-0.00108	-0.00109	-0.00110
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00054	0.00054	0.00046
	(B * C * !D * !X)	-0.00184	-0.00185	-0.00198
	(B * !C * !X)	0.00052	0.00052	0.00046
	(B * !C * !X)	-0.00190	-0.00191	-0.00200
	(!B * !X)	0.00049	0.00049	0.00047
	(!B * !X)	-0.00198	-0.00199	-0.00201

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(B * C * !D * !X)	-0.00027	-0.00027	-0.00027
	(B * C * !D * !X)	0.00096	0.00097	0.00096
	(B * !C * !X)	-0.00027	-0.00027	-0.00027
	(B * !C * !X)	0.00096	0.00097	0.00096
	(!B * !X)	-0.00027	-0.00027	-0.00027
	(!B * !X)	0.00097	0.00097	0.00096
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00033	-0.00032	-0.00032
	(B * C * !D * !X)	0.00111	0.00110	0.00110
	(B * !C * !X)	-0.00033	-0.00032	-0.00032
	(B * !C * !X)	0.00111	0.00110	0.00110
	(!B * !X)	-0.00033	-0.00033	-0.00033
	(!B * !X)	0.00111	0.00110	0.00110
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00045	-0.00045	-0.00044
	(B * C * !D * !X)	0.00203	0.00202	0.00201
	(B * !C * !X)	-0.00046	-0.00045	-0.00044
	(B * !C * !X)	0.00203	0.00202	0.00201
	(!B * !X)	-0.00047	-0.00046	-0.00046
	(!B * !X)	0.00203	0.00202	0.00201

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__and4_1	**(A * C * !D * !X)**	0.00033	0.00033	0.00033
	(A * C * !D * !X)	-0.00076	-0.00076	-0.00075
	(A * !C * !X)	0.00033	0.00033	0.00033
	(A * !C * !X)	-0.00076	-0.00076	-0.00076
	(!A * C * D * !X)	0.00059	0.00060	0.00059
	(!A * C * D * !X)	-0.00076	-0.00076	-0.00076
	(!A * C * !D * !X)	0.00036	0.00037	0.00036
	(!A * C * !D * !X)	-0.00076	-0.00077	-0.00076
	(!A * !C * !X)	0.00035	0.00035	0.00035
	(!A * !C * !X)	-0.00076	-0.00077	-0.00076
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00039	0.00039	0.00039
	(A * C * !D * !X)	-0.00092	-0.00092	-0.00091
	(A * !C * !X)	0.00040	0.00040	0.00040
	(A * !C * !X)	-0.00092	-0.00092	-0.00091
	(!A * C * D * !X)	0.00070	0.00070	0.00070
	(!A * C * D * !X)	-0.00092	-0.00092	-0.00092
	(!A * C * !D * !X)	0.00043	0.00043	0.00043
	(!A * C * !D * !X)	-0.00092	-0.00092	-0.00092
	(!A * !C * !X)	0.00042	0.00042	0.00042
	(!A * !C * !X)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00080	0.00080	0.00080
	(A * C * !D * !X)	-0.00172	-0.00172	-0.00171
	(A * !C * !X)	0.00083	0.00083	0.00082
	(A * !C * !X)	-0.00172	-0.00172	-0.00171
	(!A * C * D * !X)	0.00135	0.00136	0.00135
	(!A * C * D * !X)	-0.00171	-0.00172	-0.00171
	(!A * C * !D * !X)	0.00087	0.00088	0.00087
	(!A * C * !D * !X)	-0.00173	-0.00173	-0.00172
	(!A * !C * !X)	0.00087	0.00088	0.00087
	(!A * !C * !X)	-0.00173	-0.00173	-0.00173

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(A * C * !D * !X)	-0.00031	-0.00031	-0.00032
	(A * C * !D * !X)	0.00079	0.00078	0.00076
	(A * !C * !X)	-0.00032	-0.00032	-0.00032
	(A * !C * !X)	0.00079	0.00078	0.00076
	(!A * C * D * !X)	-0.00058	-0.00060	-0.00059
	(!A * C * D * !X)	0.00076	0.00076	0.00076
	(!A * C * !D * !X)	-0.00036	-0.00037	-0.00036
	(!A * C * !D * !X)	0.00076	0.00077	0.00076
	(!A * !C * !X)	-0.00035	-0.00035	-0.00035
	(!A * !C * !X)	0.00076	0.00077	0.00076
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00038	-0.00037	-0.00038
	(A * C * !D * !X)	0.00095	0.00094	0.00092
	(A * !C * !X)	-0.00038	-0.00038	-0.00038
	(A * !C * !X)	0.00095	0.00094	0.00092
	(!A * C * D * !X)	-0.00069	-0.00070	-0.00070
	(!A * C * D * !X)	0.00092	0.00092	0.00092
	(!A * C * !D * !X)	-0.00043	-0.00043	-0.00043
	(!A * C * !D * !X)	0.00092	0.00093	0.00092
	(!A * !C * !X)	-0.00042	-0.00042	-0.00042
	(!A * !C * !X)	0.00092	0.00093	0.00092

sky130_fd_sc_hs__and4_4	(A * C * !D * !X)	-0.00077	-0.00077	-0.00078
	(A * C * !D * !X)	0.00176	0.00176	0.00173
	(A * !C * !X)	-0.00079	-0.00079	-0.00080
	(A * !C * !X)	0.00176	0.00176	0.00173
	(!A * C * D * !X)	-0.00133	-0.00136	-0.00135
	(!A * C * D * !X)	0.00172	0.00173	0.00172
	(!A * C * !D * !X)	-0.00087	-0.00088	-0.00087
	(!A * C * !D * !X)	0.00173	0.00173	0.00173
	(!A * !C * !X)	-0.00087	-0.00088	-0.00087
	(!A * !C * !X)	0.00173	0.00174	0.00174

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(A * B * !D * !X)	0.00037	0.00037	0.00037
	(A * B * !D * !X)	-0.00074	-0.00073	-0.00073
	(A * !B * D * !X)	0.00062	0.00063	0.00062
	(A * !B * D * !X)	-0.00073	-0.00073	-0.00073
	(A * !B * !D * !X)	0.00040	0.00040	0.00040
	(A * !B * !D * !X)	-0.00073	-0.00073	-0.00073
	(!A * B * D * !X)	0.00060	0.00060	0.00060
	(!A * B * D * !X)	-0.00073	-0.00073	-0.00073
	(!A * B * !D * !X)	0.00039	0.00039	0.00039
	(!A * B * !D * !X)	-0.00073	-0.00073	-0.00073
	(!A * !B * D * !X)	0.00062	0.00063	0.00062
	(!A * !B * D * !X)	-0.00073	-0.00073	-0.00073
	(!A * !B * !D * !X)	0.00041	0.00041	0.00041
	(!A * !B * !D * !X)	-0.00073	-0.00073	-0.00073

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00040	0.00041	0.00041
	(A * B * !D * !X)	-0.00085	-0.00086	-0.00086
	(A * !B * D * !X)	0.00070	0.00071	0.00071
	(A * !B * D * !X)	-0.00085	-0.00086	-0.00086
	(A * !B * !D * !X)	0.00044	0.00045	0.00044
	(A * !B * !D * !X)	-0.00085	-0.00086	-0.00086
	(!A * B * D * !X)	0.00068	0.00069	0.00068
	(!A * B * D * !X)	-0.00086	-0.00086	-0.00086
	(!A * B * !D * !X)	0.00043	0.00043	0.00043
	(!A * B * !D * !X)	-0.00086	-0.00086	-0.00086
	(!A * !B * D * !X)	0.00070	0.00071	0.00071
	(!A * !B * D * !X)	-0.00085	-0.00086	-0.00086
	(!A * !B * !D * !X)	0.00046	0.00046	0.00046
	(!A * !B * !D * !X)	-0.00086	-0.00086	-0.00086
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00101	0.00101	0.00101
	(A * B * !D * !X)	-0.00179	-0.00179	-0.00179
	(A * !B * D * !X)	0.00153	0.00154	0.00153
	(A * !B * D * !X)	-0.00178	-0.00179	-0.00179
	(A * !B * !D * !X)	0.00108	0.00108	0.00107
	(A * !B * !D * !X)	-0.00179	-0.00180	-0.00179
	(!A * B * D * !X)	0.00150	0.00150	0.00149
	(!A * B * D * !X)	-0.00179	-0.00179	-0.00178
	(!A * B * !D * !X)	0.00105	0.00106	0.00105
	(!A * B * !D * !X)	-0.00179	-0.00179	-0.00179
	(!A * !B * D * !X)	0.00153	0.00154	0.00153
	(!A * !B * D * !X)	-0.00178	-0.00179	-0.00179
	(!A * !B * !D * !X)	0.00110	0.00110	0.00110
	(!A * !B * !D * !X)	-0.00179	-0.00180	-0.00179

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(A * B * !D * !X)	-0.00036	-0.00036	-0.00036
	(A * B * !D * !X)	0.00074	0.00074	0.00073
	(A * !B * D * !X)	-0.00061	-0.00063	-0.00062
	(A * !B * D * !X)	0.00073	0.00074	0.00073
	(A * !B * !D * !X)	-0.00040	-0.00040	-0.00040
	(A * !B * !D * !X)	0.00074	0.00074	0.00073
	(!A * B * D * !X)	-0.00059	-0.00060	-0.00060
	(!A * B * D * !X)	0.00074	0.00074	0.00073
	(!A * B * !D * !X)	-0.00039	-0.00039	-0.00039
	(!A * B * !D * !X)	0.00073	0.00074	0.00073
	(!A * !B * D * !X)	-0.00061	-0.00063	-0.00062
	(!A * !B * D * !X)	0.00073	0.00074	0.00073
	(!A * !B * !D * !X)	-0.00041	-0.00041	-0.00041
	(!A * !B * !D * !X)	0.00074	0.00074	0.00073
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00040	-0.00040	-0.00040
	(A * B * !D * !X)	0.00087	0.00086	0.00086
	(A * !B * D * !X)	-0.00069	-0.00071	-0.00071
	(A * !B * D * !X)	0.00086	0.00087	0.00086
	(A * !B * !D * !X)	-0.00044	-0.00045	-0.00044
	(A * !B * !D * !X)	0.00085	0.00086	0.00086
	(!A * B * D * !X)	-0.00066	-0.00069	-0.00068
	(!A * B * D * !X)	0.00086	0.00086	0.00086
	(!A * B * !D * !X)	-0.00043	-0.00043	-0.00043
	(!A * B * !D * !X)	0.00086	0.00086	0.00086
	(!A * !B * D * !X)	-0.00069	-0.00071	-0.00071
	(!A * !B * D * !X)	0.00086	0.00087	0.00086
	(!A * !B * !D * !X)	-0.00046	-0.00046	-0.00046
	(!A * !B * !D * !X)	0.00087	0.00086	0.00086

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00099	-0.00100	-0.00099
	(A * B * !D * !X)	0.00179	0.00180	0.00179
	(A * !B * D * !X)	-0.00152	-0.00154	-0.00153
	(A * !B * D * !X)	0.00180	0.00179	0.00179
	(A * !B * !D * !X)	-0.00108	-0.00108	-0.00107
	(A * !B * !D * !X)	0.00179	0.00181	0.00180
	(!A * B * D * !X)	-0.00145	-0.00150	-0.00149
	(!A * B * D * !X)	0.00179	0.00179	0.00179
	(!A * B * !D * !X)	-0.00105	-0.00106	-0.00105
	(!A * B * !D * !X)	0.00179	0.00181	0.00180
	(!A * !B * D * !X)	-0.00152	-0.00154	-0.00153
	(!A * !B * D * !X)	0.00180	0.00179	0.00179
	(!A * !B * !D * !X)	-0.00110	-0.00110	-0.00110
	(!A * !B * !D * !X)	0.00179	0.00181	0.00180

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	(A * B * !C * !X)	0.00061	0.00061	0.00061
	(A * B * !C * !X)	-0.00082	-0.00082	-0.00082
	(A * !B * C * !X)	0.00059	0.00059	0.00059
	(A * !B * C * !X)	-0.00082	-0.00082	-0.00082
	(A * !B * !C * !X)	0.00061	0.00062	0.00061
	(A * !B * !C * !X)	-0.00082	-0.00082	-0.00082
	(!A * B * C * !X)	0.00058	0.00058	0.00058
	(!A * B * C * !X)	-0.00082	-0.00082	-0.00082
	(!A * !C * !X)	0.00061	0.00062	0.00061
	(!A * !C * !X)	-0.00082	-0.00082	-0.00082
	(!A * !B * C * !X)	0.00059	0.00059	0.00059
	(!A * !B * C * !X)	-0.00082	-0.00082	-0.00082

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00072	0.00073	0.00072
	(A * B * !C * !X)	-0.00089	-0.00089	-0.00089
	(A * !B * C * !X)	0.00070	0.00071	0.00070
	(A * !B * C * !X)	-0.00089	-0.00089	-0.00089
	(A * !B * !C * !X)	0.00072	0.00073	0.00072
	(A * !B * !C * !X)	-0.00089	-0.00089	-0.00089
	(!A * B * C * !X)	0.00069	0.00070	0.00069
	(!A * B * C * !X)	-0.00089	-0.00089	-0.00089
	(!A * !C * !X)	0.00072	0.00073	0.00072
	(!A * !C * !X)	-0.00089	-0.00089	-0.00089
	(!A * !B * C * !X)	0.00070	0.00071	0.00070
	(!A * !B * C * !X)	-0.00089	-0.00089	-0.00089
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00117	0.00118	0.00117
	(A * B * !C * !X)	-0.00173	-0.00175	-0.00174
	(A * !B * C * !X)	0.00116	0.00116	0.00115
	(A * !B * C * !X)	-0.00173	-0.00174	-0.00174
	(A * !B * !C * !X)	0.00118	0.00118	0.00118
	(A * !B * !C * !X)	-0.00173	-0.00174	-0.00174
	(!A * B * C * !X)	0.00114	0.00114	0.00113
	(!A * B * C * !X)	-0.00174	-0.00175	-0.00174
	(!A * !C * !X)	0.00117	0.00118	0.00117
	(!A * !C * !X)	-0.00173	-0.00174	-0.00174
	(!A * !B * C * !X)	0.00116	0.00116	0.00115
	(!A * !B * C * !X)	-0.00173	-0.00174	-0.00174

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__and4_1	**(A * B * !C * !X)**	-0.00060	-0.00061	-0.00061
	(A * B * !C * !X)	0.00082	0.00083	0.00082
	(A * !B * C * !X)	-0.00058	-0.00059	-0.00059
	(A * !B * C * !X)	0.00082	0.00083	0.00082
	(A * !B * !C * !X)	-0.00060	-0.00062	-0.00061
	(A * !B * !C * !X)	0.00082	0.00083	0.00082
	(!A * B * C * !X)	-0.00057	-0.00058	-0.00058
	(!A * B * C * !X)	0.00083	0.00083	0.00082
	(!A * !C * !X)	-0.00060	-0.00062	-0.00061
	(!A * !C * !X)	0.00082	0.00083	0.00082
	(!A * !B * C * !X)	-0.00058	-0.00059	-0.00059
	(!A * !B * C * !X)	0.00082	0.00083	0.00082
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00071	-0.00073	-0.00072
	(A * B * !C * !X)	0.00089	0.00090	0.00089
	(A * !B * C * !X)	-0.00069	-0.00071	-0.00070
	(A * !B * C * !X)	0.00089	0.00090	0.00089
	(A * !B * !C * !X)	-0.00071	-0.00073	-0.00072
	(A * !B * !C * !X)	0.00089	0.00090	0.00089
	(!A * B * C * !X)	-0.00068	-0.00070	-0.00069
	(!A * B * C * !X)	0.00090	0.00090	0.00089
	(!A * !C * !X)	-0.00071	-0.00073	-0.00072
	(!A * !C * !X)	0.00089	0.00090	0.00089
	(!A * !B * C * !X)	-0.00069	-0.00071	-0.00070
	(!A * !B * C * !X)	0.00089	0.00090	0.00089

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00116	-0.00118	-0.00117
	(A * B * !C * !X)	0.00175	0.00175	0.00174
	(A * !B * C * !X)	-0.00110	-0.00116	-0.00115
	(A * !B * C * !X)	0.00173	0.00175	0.00174
	(A * !B * !C * !X)	-0.00116	-0.00118	-0.00118
	(A * !B * !C * !X)	0.00175	0.00175	0.00174
	(!A * B * C * !X)	-0.00109	-0.00114	-0.00113
	(!A * B * C * !X)	0.00175	0.00175	0.00174
	(!A * !C * !X)	-0.00116	-0.00118	-0.00117
	(!A * !C * !X)	0.00175	0.00175	0.00174
	(!A * !B * C * !X)	-0.00110	-0.00116	-0.00115
	(!A * !B * C * !X)	0.00173	0.00175	0.00174

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__buf_1	6.39360
sky130_fd_sc_hs__buf_16	35.16480
sky130_fd_sc_hs__buf_2	7.99200
sky130_fd_sc_hs__buf_4	11.18880
sky130_fd_sc_hs__buf_8	19.18080
sky130_fd_sc_hs__bufbuf_16	43.15680
sky130_fd_sc_hs__bufbuf_8	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__buf_1	0.00227	0.18725
sky130_fd_sc_hs__buf_16	0.01466	2.94928
sky130_fd_sc_hs__buf_2	0.00244	0.36748
sky130_fd_sc_hs__buf_4	0.00331	0.73654
sky130_fd_sc_hs__buf_8	0.00752	1.44427
sky130_fd_sc_hs__bufbuf_16	0.00272	2.92302
sky130_fd_sc_hs__bufbuf_8	0.00211	1.44046

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.00007	0.00007
sky130_fd_sc_hs__buf_16	0.00000	0.00082	0.00086
sky130_fd_sc_hs__buf_2	0.00000	0.00011	0.00012
sky130_fd_sc_hs__buf_4	0.00000	0.00020	0.00021
sky130_fd_sc_hs__buf_8	0.00000	0.00041	0.00043
sky130_fd_sc_hs__bufbuf_16	0.00000	0.00097	0.00101
sky130_fd_sc_hs__bufbuf_8	0.00000	0.00048	0.00050

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (RR)	0.22546	1.59215	9.62629
sky130_fd_sc_hs__buf_16	A->X (RR)	0.19779	1.04464	9.71296
sky130_fd_sc_hs__buf_2	A->X (RR)	0.20475	1.41103	9.69980
sky130_fd_sc_hs__buf_4	A->X (RR)	0.22618	1.32515	9.98151
sky130_fd_sc_hs__buf_8	A->X (RR)	0.19730	1.13882	9.69485
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.71551	1.58273	10.33540
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.87226	1.78914	10.24520

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.34824	1.35660	6.87907
sky130_fd_sc_hs__buf_16	A->X (FF)	0.48515	1.46840	7.67432
sky130_fd_sc_hs__buf_2	A->X (FF)	0.44983	1.47645	7.39552
sky130_fd_sc_hs__buf_4	A->X (FF)	0.41531	1.40591	7.22775
sky130_fd_sc_hs__buf_8	A->X (FF)	0.49216	1.49974	7.73276
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	1.13327	2.11854	8.34992
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.89858	1.88416	7.42574

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00356	0.00346	0.00342
	A	0.00170	0.00161	0.00157
sky130_fd_sc_hs__buf_16	A	0.03554	0.03544	0.03604
	A	0.02348	0.02344	0.02409
sky130_fd_sc_hs__buf_2	A	0.00522	0.00520	0.00516
	A	0.00323	0.00320	0.00317
sky130_fd_sc_hs__buf_4	A	0.00839	0.00841	0.00843
	A	0.00568	0.00571	0.00656
sky130_fd_sc_hs__buf_8	A	0.01805	0.01806	0.01818
	A	0.01188	0.01189	0.01205
sky130_fd_sc_hs__bufbuf_16	A	0.04222	0.04352	0.04480
	A	0.04000	0.04117	0.04258
sky130_fd_sc_hs__bufbuf_8	A	0.02111	0.02167	0.02228
	A	0.01938	0.02000	0.02061

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00176	0.00164	0.00167
	A	0.00361	0.00354	0.00352
sky130_fd_sc_hs__buf_16	A	0.02318	0.02386	0.02600
	A	0.03526	0.03587	0.03639
sky130_fd_sc_hs__buf_2	A	0.00297	0.00300	0.00308
	A	0.00498	0.00501	0.00500
sky130_fd_sc_hs__buf_4	A	0.00599	0.00602	0.00621
	A	0.00872	0.00884	0.00889
sky130_fd_sc_hs__buf_8	A	0.01153	0.01185	0.01353
	A	0.01772	0.01806	0.01819
sky130_fd_sc_hs__bufbuf_16	A	0.04004	0.04175	0.04171
	A	0.04228	0.04398	0.04389
sky130_fd_sc_hs__bufbuf_8	A	0.01896	0.01981	0.02126
	A	0.02069	0.02153	0.02138

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkbuf_1	6.39360
sky130_fd_sc_hs__clkbuf_16	31.96800
sky130_fd_sc_hs__clkbuf_2	6.39360
sky130_fd_sc_hs__clkbuf_4	9.59040
sky130_fd_sc_hs__clkbuf_8	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__clkbuf_1	0.00240	0.18660
sky130_fd_sc_hs__clkbuf_16	0.00794	2.93338
sky130_fd_sc_hs__clkbuf_2	0.00240	0.35910
sky130_fd_sc_hs__clkbuf_4	0.00219	0.72143
sky130_fd_sc_hs__clkbuf_8	0.00409	1.44096

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	0.00007	0.00007
sky130_fd_sc_hs__clkbuf_16	0.00000	0.00074	0.00078
sky130_fd_sc_hs__clkbuf_2	0.00000	0.00011	0.00011
sky130_fd_sc_hs__clkbuf_4	0.00000	0.00018	0.00020
sky130_fd_sc_hs__clkbuf_8	0.00000	0.00037	0.00039

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	A->X (RR)	0.22069	1.58232	9.52232
sky130_fd_sc_hs__clkbuf_16	A->X (RR)	0.24390	1.17273	10.11550
sky130_fd_sc_hs__clkbuf_2	A->X (RR)	0.21190	1.44666	9.81795
sky130_fd_sc_hs__clkbuf_4	A->X (RR)	0.25612	1.39126	10.07440
sky130_fd_sc_hs__clkbuf_8	A->X (RR)	0.24397	1.25890	10.05150

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	A->X (FF)	0.31912	1.42013	7.60292
sky130_fd_sc_hs__clkbuf_16	A->X (FF)	0.54543	1.57735	8.46949
sky130_fd_sc_hs__clkbuf_2	A->X (FF)	0.40739	1.49252	7.94963
sky130_fd_sc_hs__clkbuf_4	A->X (FF)	0.56505	1.65555	8.48626
sky130_fd_sc_hs__clkbuf_8	A->X (FF)	0.53539	1.59218	8.43280

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00340	0.00328	0.00323
	A	0.00144	0.00132	0.00128
sky130_fd_sc_hs__clkbuf_16	A	0.02634	0.02647	0.02697
	A	0.01983	0.01998	0.02047
sky130_fd_sc_hs__clkbuf_2	A	0.00457	0.00449	0.00443
	A	0.00265	0.00258	0.00254
sky130_fd_sc_hs__clkbuf_4	A	0.00706	0.00710	0.00713
	A	0.00527	0.00532	0.00534
sky130_fd_sc_hs__clkbuf_8	A	0.01345	0.01353	0.01369
	A	0.01010	0.01019	0.01035

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00140	0.00124	0.00146
	A	0.00337	0.00330	0.00328
sky130_fd_sc_hs__clkbuf_16	A	0.01745	0.01831	0.01887
	A	0.02400	0.02489	0.02537
sky130_fd_sc_hs__clkbuf_2	A	0.00218	0.00215	0.00229
	A	0.00409	0.00409	0.00407
sky130_fd_sc_hs__clkbuf_4	A	0.00451	0.00473	0.00480
	A	0.00631	0.00654	0.00658
sky130_fd_sc_hs__clkbuf_8	A	0.00874	0.00918	0.00938
	A	0.01211	0.01257	0.01272

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkdlyinv3sd1_1	9.59040
sky130_fd_sc_hs__clkdlyinv3sd2_1	9.59040
sky130_fd_sc_hs__clkdlyinv3sd3_1	9.59040
sky130_fd_sc_hs__clkdlyinv5sd1_1	17.58240
sky130_fd_sc_hs__clkdlyinv5sd2_1	17.58240
sky130_fd_sc_hs__clkdlyinv5sd3_1	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00226	0.18751
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00230	0.18579
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00232	0.18933
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00225	0.18970
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00229	0.18394
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00232	0.18325

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.00011	0.00011
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.00011	0.00011
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.00011	0.00011
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.00019	0.00019
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.00017	0.00018
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.00018	0.00018

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (FR)**	0.46620	2.18574	12.85530
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.48628	2.19967	12.83070
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.53492	2.25749	13.10630
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.78697	2.51132	13.25810
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	1.16640	2.87256	13.45160
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	2.34184	4.04727	14.71170

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.35432	1.08316	4.38141
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.64749	1.41745	4.75063
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	1.40718	2.28326	5.78225
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.70047	1.43723	4.75100
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	1.39422	2.17569	5.49154
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	3.33000	4.22205	7.68195

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00282	0.00274	0.00268
	A	0.00467	0.00460	0.00453
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00292	0.00284	0.00275
	A	0.00481	0.00472	0.00464
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00306	0.00299	0.00286
	A	0.00497	0.00488	0.00477
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.00621	0.00610	0.00596
	A	0.00804	0.00795	0.00782
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.00650	0.00638	0.00624
	A	0.00838	0.00825	0.00814
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.00709	0.00698	0.00685
	A	0.00900	0.00888	0.00875

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00463	0.00450	0.00443
	A	0.00278	0.00265	0.00255
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00477	0.00467	0.00458
	A	0.00289	0.00279	0.00269
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.00532	0.00527	0.00520
	A	0.00342	0.00336	0.00328
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.00793	0.00778	0.00769
	A	0.00609	0.00594	0.00581
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.00825	0.00814	0.00804
	A	0.00637	0.00627	0.00614
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.00944	0.00939	0.00929
	A	0.00754	0.00749	0.00740

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkinv_1	4.79520
sky130_fd_sc_hs__clkinv_16	38.36160
sky130_fd_sc_hs__clkinv_2	6.39360
sky130_fd_sc_hs__clkinv_4	11.18880
sky130_fd_sc_hs__clkinv_8	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkinv_1	0.00286	0.31420
sky130_fd_sc_hs__clkinv_16	0.04235	4.30921
sky130_fd_sc_hs__clkinv_2	0.00547	0.53273
sky130_fd_sc_hs__clkinv_4	0.01083	1.06864
sky130_fd_sc_hs__clkinv_8	0.02168	2.15507

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	0.00005	0.00007
sky130_fd_sc_hs__clkinv_16	0.00000	0.00075	0.00098
sky130_fd_sc_hs__clkinv_2	0.00000	0.00009	0.00012
sky130_fd_sc_hs__clkinv_4	0.00000	0.00019	0.00024
sky130_fd_sc_hs__clkinv_8	0.00000	0.00038	0.00049

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (FR)	0.11941	1.62495	12.89950
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.09744	1.23741	13.30320
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.12094	1.55854	13.33250
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.10833	1.42202	13.36200
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.10706	1.32734	13.48980

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.07249	1.03484	7.90617
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.06095	0.73748	7.60430
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.06812	0.92219	7.46920
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.06413	0.85380	7.52575
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.06437	0.79652	7.60344

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00007	-0.00008	-0.00006
	A	0.00228	0.00221	0.00234
sky130_fd_sc_hs__clkinv_16	A	-0.00484	-0.00495	-0.00424
	A	0.02985	0.02982	0.03058
sky130_fd_sc_hs__clkinv_2	A	-0.00033	-0.00035	-0.00030
	A	0.00414	0.00409	0.00425
sky130_fd_sc_hs__clkinv_4	A	-0.00080	-0.00080	-0.00069
	A	0.00807	0.00804	0.00833
sky130_fd_sc_hs__clkinv_8	A	-0.00143	-0.00149	-0.00117
	A	0.01633	0.01622	0.01665

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00179	0.00181	0.00180
	A	-0.00055	-0.00056	-0.00054
sky130_fd_sc_hs__clkinv_16	A	0.02547	0.02508	0.02770
	A	-0.00917	-0.00965	-0.00832
sky130_fd_sc_hs__clkinv_2	A	0.00362	0.00360	0.00368
	A	-0.00084	-0.00087	-0.00081
sky130_fd_sc_hs__clkinv_4	A	0.00657	0.00654	0.00692
	A	-0.00226	-0.00230	-0.00212
sky130_fd_sc_hs__clkinv_8	A	0.01302	0.01293	0.01417
	A	-0.00463	-0.00484	-0.00432

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__conb_1	4.79520

Pin Capacitance Information

Cell Name	Max Cap(pf)	
	HI	LO
sky130_fd_sc_hs__conb_1	-	-

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__conb_1	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DELAYx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlymetal6s2s_1	15.98400
sky130_fd_sc_hs__dlymetal6s4s_1	15.98400
sky130_fd_sc_hs__dlymetal6s6s_1	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlymetal6s2s_1	0.00142	0.18765
sky130_fd_sc_hs__dlymetal6s4s_1	0.00142	0.18712
sky130_fd_sc_hs__dlymetal6s6s_1	0.00142	0.18334

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.00022	0.00022
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.00022	0.00022
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.00022	0.00022

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (RR)**	0.27723	1.63260	9.54158
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.57287	1.92381	9.83839
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.83115	2.17208	9.95815

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.59826	1.66386	7.86192
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	1.21392	2.27708	8.41181
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	1.80844	2.87705	8.99931

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.00912	0.00896	0.00880
	A	0.00796	0.00785	0.00765
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.00911	0.00898	0.00876
	A	0.00795	0.00782	0.00761
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.00912	0.00909	0.00894
	A	0.00796	0.00792	0.00778

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.00772	0.00766	0.00762
	A	0.00889	0.00883	0.00873
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.00774	0.00765	0.00752
	A	0.00891	0.00881	0.00864
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.00775	0.00771	0.00752
	A	0.00891	0.00887	0.00873

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT	
D	RESET_B	SET_B	CLK_N	Q	Q_N
0	1	1	F	0	1
1	1	1	F	1	0
x	x	0	x	1	0
x	0	1	x	0	1
x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbn_1	44.75520
sky130_fd_sc_hs__dfbbn_2	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RESET_B	SET_B	CLK_N	Q	Q_N
sky130_fd_sc_hs__dfbbn_1	0.00156	0.00153	0.00492	0.00272	0.18455	0.18114
sky130_fd_sc_hs__dfbbn_2	0.00157	0.00155	0.00489	0.00272	0.36782	0.36764

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	0.00057	0.00063
sky130_fd_sc_hs__dfbbn_2	0.00000	0.00065	0.00071

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q (FR)	2.34013	3.98491	15.09850
	SET_B->Q (FR)	0.98159	2.63864	13.77790
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	2.74488	4.15323	15.50000
	SET_B->Q (FR)	1.15164	2.60378	14.07210

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q (FF)	2.15867	3.19649	9.19845
	RESET_B->Q (FF)	1.08632	2.09828	7.94442
	SET_B->Q (RF)	0.50704	1.22726	4.39316
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	2.32143	3.33904	9.36413
	RESET_B->Q (FF)	1.25509	2.24514	8.14205
	SET_B->Q (RF)	0.66907	1.38715	4.71112

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q_N (FR)	2.01739	3.75627	14.95350
	RESET_B->Q_N (FR)	0.94684	2.66659	13.72120
	SET_B->Q_N (RR)	0.36751	1.79765	10.19950
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	2.01830	3.57908	14.99610
	RESET_B->Q_N (FR)	0.95290	2.48781	13.78480
	SET_B->Q_N (RR)	0.36787	1.63084	10.38060

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q_N (FF)	1.97324	3.20455	9.42414
	SET_B->Q_N (FF)	0.68862	1.81171	8.09897
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	2.24136	3.51249	9.85099
	SET_B->Q_N (FF)	0.82432	1.93326	8.34514

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	hold	CLK_N (F)	0.32164	0.46897	3.52683
	setup	CLK_N (F)	0.51125	0.28162	-3.30282
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.32322	0.46818	3.53566
	setup	CLK_N (F)	0.46187	0.22856	-3.31882

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	hold	CLK_N (F)	-1.13227	-1.20662	-3.15340
	setup	CLK_N (F)	1.31296	1.36633	3.36246
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-1.13093	-1.20529	-3.14305
	setup	CLK_N (F)	1.30968	1.35959	3.36185

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	hold	CLK_N (F)	0.32164	0.46897	3.52683
	setup	CLK_N (F)	0.51125	0.28162	-3.30282
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.32322	0.46818	3.53566
	setup	CLK_N (F)	0.46187	0.22856	-3.31882

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	hold	CLK_N (F)	-1.13227	-1.20662	-3.15340
	setup	CLK_N (F)	1.31296	1.36633	3.36246
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-1.13093	-1.20529	-3.14305
	setup	CLK_N (F)	1.30968	1.35959	3.36185

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	recovery	CLK_N (F)	0.50565	0.29423	-3.37892
	removal	CLK_N (F)	0.40739	0.54191	3.69289
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.45721	0.25406	-3.39238
	removal	CLK_N (F)	0.39766	0.53931	3.69220

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	recovery	CLK_N (F)	0.50565	0.29423	-3.37892
	removal	CLK_N (F)	0.40739	0.54191	3.69289
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.45721	0.25406	-3.39238
	removal	CLK_N (F)	0.39766	0.53931	3.69220

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	min_pulse_width	RESET_B ()	1.14246	1.73099	16.50020
	min_pulse_width	RESET_B ()	0.93897	1.73099	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	1.14611	1.75179	16.50020
	min_pulse_width	RESET_B ()	0.93536	1.75526	16.50020

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	recovery	CLK_N (F)	-0.33045	-0.52380	-3.70806
	removal	CLK_N (F)	0.37829	0.58324	3.83958
	hold	RESET_B (R)	-0.17408	-0.31129	-1.38842
	setup	RESET_B (R)	0.80236	0.69178	1.71868
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.33273	-0.52500	-3.71031
	removal	CLK_N (F)	0.37820	0.58603	3.84609
	hold	RESET_B (R)	-0.24530	-0.39423	-1.65338
	setup	RESET_B (R)	0.81580	0.71524	1.92541

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	recovery	CLK_N (F)	-0.33045	-0.52380	-3.70806
	removal	CLK_N (F)	0.37829	0.58324	3.83958
	hold	RESET_B (R)	-0.17526	-0.31335	-1.39071
	hold	RESET_B (R)	-0.17408	-0.31129	-1.38842
	setup	RESET_B (R)	0.80236	0.69178	1.66665
	setup	RESET_B (R)	0.46245	0.46948	1.71868
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.33273	-0.52500	-3.71031
	removal	CLK_N (F)	0.37820	0.58603	3.84609
	hold	RESET_B (R)	-0.26360	-0.41744	-1.71353
	hold	RESET_B (R)	-0.24530	-0.39423	-1.65338
	setup	RESET_B (R)	0.81580	0.71524	1.92541
	setup	RESET_B (R)	0.45629	0.51570	1.92097

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	min_pulse_width	SET_B ()	0.74089	1.79686	16.50020
	min_pulse_width	SET_B ()	0.73311	1.79339	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.91607	1.97019	16.50020
	min_pulse_width	SET_B ()	0.85320	1.90432	16.50020

Constraints(ns) for CLK_N rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	min_pulse_width	CLK_N ()	0.92087	1.45020	16.50020
	min_pulse_width	CLK_N ()	0.90280	1.45020	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.87181	1.45020	16.50020
	min_pulse_width	CLK_N ()	0.90538	1.45020	16.50020

Constraints(ns) for CLK_N falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbn_1	min_pulse_width	CLK_N ()	1.22643	1.70326	16.50020
	min_pulse_width	CLK_N ()	1.40418	1.65819	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	1.48808	1.78992	16.50020
	min_pulse_width	CLK_N ()	1.42790	1.66859	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00695	0.00697	0.00689
	CLK_N	0.00806	0.00807	0.00798
	SET_B	0.00691	0.00687	0.00688
	SET_B	0.00895	0.00889	0.00877
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00835	0.00847	0.00846
	CLK_N	0.00947	0.00958	0.00958
	SET_B	0.00831	0.00837	0.00831
	SET_B	0.01034	0.01039	0.01031

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00774	0.00774	0.00752
	CLK_N	0.00874	0.00873	0.00851
	RESET_B	0.00885	0.00890	0.00859
	RESET_B	0.00941	0.00946	0.00914
	SET_B	0.00914	0.00904	0.00873
	SET_B	0.00711	0.00701	0.00669
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00920	0.00931	0.00900
	CLK_N	0.01018	0.01029	0.01002
	RESET_B	0.01033	0.01050	0.01014
	RESET_B	0.01089	0.01106	0.01069
	SET_B	0.01061	0.01063	0.01024
	SET_B	0.00859	0.00861	0.00821

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00775	0.00774	0.00767
	CLK_N	0.00875	0.00874	0.00869
	RESET_B	0.00886	0.00891	0.00878
	RESET_B	0.00942	0.00947	0.00934
	SET_B	0.00915	0.00905	0.00893
	SET_B	0.00712	0.00702	0.00690
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00920	0.00931	0.00928
	CLK_N	0.01019	0.01029	0.01030
	RESET_B	0.01034	0.01051	0.01056
	RESET_B	0.01090	0.01107	0.01099
	SET_B	0.01062	0.01060	0.01054
	SET_B	0.00860	0.00860	0.00852

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00694	0.00695	0.00671
	CLK_N	0.00805	0.00806	0.00780
	SET_B	0.00688	0.00683	0.00654
	SET_B	0.00892	0.00885	0.00853
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.00834	0.00846	0.00820
	CLK_N	0.00946	0.00957	0.00932
	SET_B	0.00828	0.00834	0.00801
	SET_B	0.01031	0.01034	0.01001

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00531	0.00521	0.00512
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00431	0.00420	0.00411
	(CLK_N * !SET_B * Q * !Q_N)	0.00341	0.00338	0.00334
	(CLK_N * !SET_B * Q * !Q_N)	0.00212	0.00208	0.00204
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00302	0.00299	0.00294
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00174	0.00170	0.00166
	!CLK_N	0.00188	0.00183	0.00179
	!CLK_N	0.00060	0.00054	0.00051
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00533	0.00522	0.00513
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00432	0.00421	0.00412
	(CLK_N * !SET_B * Q * !Q_N)	0.00342	0.00339	0.00335
	(CLK_N * !SET_B * Q * !Q_N)	0.00213	0.00209	0.00205
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00301	0.00298	0.00293
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00172	0.00169	0.00164
	!CLK_N	0.00187	0.00182	0.00178
	!CLK_N	0.00059	0.00054	0.00050

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00520	0.00513	0.00500
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00621	0.00614	0.00599
	(CLK_N * !SET_B * Q * !Q_N)	0.00151	0.00145	0.00141
	(CLK_N * !SET_B * Q * !Q_N)	0.00282	0.00275	0.00270
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00191	0.00185	0.00181
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00320	0.00313	0.00309
	!CLK_N	0.00087	0.00081	0.00080
	!CLK_N	0.00216	0.00209	0.00207
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00519	0.00512	0.00498
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00620	0.00614	0.00598
	(CLK_N * !SET_B * Q * !Q_N)	0.00148	0.00141	0.00137
	(CLK_N * !SET_B * Q * !Q_N)	0.00278	0.00271	0.00267
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00190	0.00183	0.00180
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00319	0.00312	0.00308
	!CLK_N	0.00085	0.00079	0.00078
	!CLK_N	0.00214	0.00208	0.00206

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * D * SET_B * !Q * Q_N)	0.00567	0.00555	0.00546
	(CLK_N * D * SET_B * !Q * Q_N)	0.00444	0.00432	0.00424
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00339	0.00334	0.00329
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00189	0.00183	0.00179
	(!SET_B * Q * !Q_N)	0.00340	0.00334	0.00329
	(!SET_B * Q * !Q_N)	0.00186	0.00180	0.00176
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00569	0.00556	0.00548
	(CLK_N * D * SET_B * !Q * Q_N)	0.00444	0.00431	0.00423
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00338	0.00333	0.00328
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00186	0.00180	0.00176
	(!SET_B * Q * !Q_N)	0.00340	0.00335	0.00330
	(!SET_B * Q * !Q_N)	0.00185	0.00179	0.00175

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * D * SET_B * !Q * Q_N)	0.00504	0.00496	0.00486
	(CLK_N * D * SET_B * !Q * Q_N)	0.00628	0.00619	0.00609
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00166	0.00160	0.00158
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00317	0.00311	0.00308
	(!SET_B * Q * !Q_N)	0.00131	0.00124	0.00118
	(!SET_B * Q * !Q_N)	0.00286	0.00279	0.00272
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00506	0.00497	0.00488
	(CLK_N * D * SET_B * !Q * Q_N)	0.00632	0.00623	0.00613
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00168	0.00161	0.00159
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00320	0.00314	0.00312
	(!SET_B * Q * !Q_N)	0.00132	0.00125	0.00119
	(!SET_B * Q * !Q_N)	0.00288	0.00281	0.00275

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00166	0.00167	0.00166
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00183	-0.00184	-0.00183
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00531	0.00525	0.00520
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00148	0.00141	0.00136
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00164	0.00165	0.00164
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00182	-0.00183	-0.00182
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00531	0.00525	0.00519
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00151	0.00144	0.00140

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00165	-0.00167	-0.00166
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00184	0.00185	0.00184
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00045	0.00034	0.00027
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00428	0.00417	0.00411
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00163	-0.00165	-0.00164
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00183	0.00184	0.00183
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00042	0.00031	0.00025
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00422	0.00412	0.00406

Passive power(pJ) for CLK_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__dfbbn_1	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01010	0.00995	0.00987
	(D * RESET_B * SET_B * !Q * Q_N)	0.00829	0.00814	0.00806
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00662	0.00646	0.00632
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00454	0.00436	0.00423
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00783	0.00767	0.00760
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00574	0.00558	0.00551
	(!D * SET_B * !Q * Q_N)	0.00618	0.00600	0.00587
	(!D * SET_B * !Q * Q_N)	0.00409	0.00391	0.00378
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01079	0.01059	0.01042
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00843	0.00821	0.00806
	(!D * !SET_B * Q * !Q_N)	0.00700	0.00678	0.00661
	(!D * !SET_B * Q * !Q_N)	0.00493	0.00470	0.00453

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01013	0.00998	0.00990
	(D * RESET_B * SET_B * !Q * Q_N)	0.00832	0.00816	0.00809
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00662	0.00645	0.00631
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00453	0.00436	0.00422
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00783	0.00767	0.00760
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00575	0.00559	0.00551
	(!D * SET_B * !Q * Q_N)	0.00619	0.00601	0.00588
	(!D * SET_B * !Q * Q_N)	0.00410	0.00391	0.00379
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01080	0.01059	0.01043
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00844	0.00822	0.00806
	(!D * !SET_B * Q * !Q_N)	0.00698	0.00675	0.00658
	(!D * !SET_B * Q * !Q_N)	0.00490	0.00467	0.00450

Passive power(pJ) for CLK_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00517	0.00500	0.00488
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00726	0.00710	0.00697
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00706	0.00689	0.00669
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00915	0.00899	0.00878
	(!D * SET_B * !Q * Q_N)	0.00548	0.00531	0.00520
	(!D * SET_B * !Q * Q_N)	0.00757	0.00741	0.00729
	(!D * !SET_B * Q * !Q_N)	0.00698	0.00680	0.00664
	(!D * !SET_B * Q * !Q_N)	0.00907	0.00889	0.00873
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00517	0.00500	0.00488
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00726	0.00710	0.00697
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00704	0.00687	0.00667
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00913	0.00897	0.00876
	(!D * SET_B * !Q * Q_N)	0.00547	0.00530	0.00519
	(!D * SET_B * !Q * Q_N)	0.00756	0.00740	0.00727
	(!D * !SET_B * Q * !Q_N)	0.00701	0.00683	0.00667
	(!D * !SET_B * Q * !Q_N)	0.00910	0.00891	0.00875

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT	
D	RESET_B	SET_B	CLK	Q	Q_N
0	1	1	R	0	1
1	1	1	R	1	0
x	x	0	x	1	0
x	0	1	x	0	1
x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RESET_B	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfbbp_1	0.00135	0.00169	0.00578	0.00268	0.18186	0.17693

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	0.00057	0.00063

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RR)	2.09971	3.41132	11.32200
	SET_B->Q (FR)	0.91826	2.56635	13.58310

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	1.39959	2.08498	4.98558
	RESET_B->Q (FF)	1.04218	2.05150	7.85313
	SET_B->Q (RF)	0.51794	1.21637	4.34097

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q_N (RR)	1.26282	2.63589	10.60350
	RESET_B->Q_N (FR)	0.90672	2.61406	13.49620
	SET_B->Q_N (RR)	0.38214	1.78152	10.01150

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q_N (RF)	1.74363	2.63203	5.69528
	SET_B->Q_N (FF)	0.64097	1.74454	7.96907

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	hold	CLK (R)	-0.08743	-0.18216	-0.80238
	setup	CLK (R)	0.50849	0.50890	1.00196

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	hold	CLK (R)	-0.92762	-1.04968	-4.71115
	setup	CLK (R)	1.33625	1.46980	4.95535

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	hold	CLK (R)	-0.08743	-0.18216	-0.80238
	setup	CLK (R)	0.50849	0.50890	1.00196

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	hold	CLK (R)	-0.92762	-1.04968	-4.71115
	setup	CLK (R)	1.33625	1.46980	4.95535

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	recovery	CLK (R)	0.53457	0.55890	0.78489
	removal	CLK (R)	-0.11848	-0.15106	-0.20805

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	recovery	CLK (R)	0.53457	0.55890	0.78489
	removal	CLK (R)	-0.11848	-0.15106	-0.20805

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	min_pulse_width	RESET_B ()	0.96552	1.69286	16.50020
	min_pulse_width	RESET_B ()	0.98080	1.69286	16.50020

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	recovery	CLK (R)	0.05133	0.00350	0.18417
	removal	CLK (R)	0.34732	0.39338	0.63965
	hold	RESET_B (R)	-0.18849	-0.35400	-1.54574
	setup	RESET_B (R)	0.60243	0.61847	1.91662

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	recovery	CLK (R)	0.05133	0.00350	0.18417
	removal	CLK (R)	0.34732	0.39338	0.63965
	hold	RESET_B (R)	-0.18920	-0.35707	-1.54909
	hold	RESET_B (R)	-0.18849	-0.35400	-1.54574
	setup	RESET_B (R)	0.55632	0.59008	1.91662
	setup	RESET_B (R)	0.60243	0.61847	1.85329

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	min_pulse_width	SET_B ()	0.66266	1.73792	16.50020
	min_pulse_width	SET_B ()	0.67561	1.74832	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	min_pulse_width	CLK ()	0.39929	1.45020	16.50020
	min_pulse_width	CLK ()	0.72980	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfbbp_1	min_pulse_width	CLK ()	1.07762	1.66166	16.50020
	min_pulse_width	CLK ()	1.72774	1.90085	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00810	0.00813	0.00815
	CLK	0.00706	0.00709	0.00710
	SET_B	0.00687	0.00681	0.00683
	SET_B	0.00909	0.00904	0.00891

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00822	0.00817	0.00793
	CLK	0.00704	0.00700	0.00676
	RESET_B	0.00806	0.00809	0.00791
	RESET_B	0.00863	0.00867	0.00833
	SET_B	0.00863	0.00852	0.00818
	SET_B	0.00640	0.00629	0.00594

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00823	0.00818	0.00814
	CLK	0.00705	0.00701	0.00696
	RESET_B	0.00806	0.00810	0.00812
	RESET_B	0.00864	0.00868	0.00854
	SET_B	0.00864	0.00853	0.00839
	SET_B	0.00641	0.00630	0.00617

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00809	0.00813	0.00796
	CLK	0.00704	0.00708	0.00691
	SET_B	0.00683	0.00679	0.00645
	SET_B	0.00905	0.00902	0.00866

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00122	0.00117	0.00115
	CLK	0.00011	0.00006	0.00004
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00502	0.00492	0.00483
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00406	0.00395	0.00386
	(!CLK * !SET_B * Q * !Q_N)	0.00285	0.00282	0.00279
	(!CLK * !SET_B * Q * !Q_N)	0.00161	0.00157	0.00154
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00239	0.00237	0.00233
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00116	0.00112	0.00109

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00001	-0.00004	-0.00005
	CLK	0.00110	0.00107	0.00105
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00380	0.00374	0.00365
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00478	0.00471	0.00461
	(!CLK * !SET_B * Q * !Q_N)	0.00098	0.00094	0.00089
	(!CLK * !SET_B * Q * !Q_N)	0.00224	0.00219	0.00214
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00141	0.00137	0.00135
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00265	0.00261	0.00259

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00307	0.00301	0.00295
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00166	0.00159	0.00155
	(!SET_B * Q * !Q_N)	0.00333	0.00326	0.00322
	(!SET_B * Q * !Q_N)	0.00189	0.00182	0.00178
	(!CLK * D * SET_B * !Q * Q_N)	0.00571	0.00556	0.00547
	(!CLK * D * SET_B * !Q * Q_N)	0.00457	0.00442	0.00433

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00159	0.00152	0.00150
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00301	0.00293	0.00291
	(!SET_B * Q * !Q_N)	0.00099	0.00091	0.00085
	(!SET_B * Q * !Q_N)	0.00244	0.00235	0.00229
	(!CLK * D * SET_B * !Q * Q_N)	0.00419	0.00410	0.00399
	(!CLK * D * SET_B * !Q * Q_N)	0.00535	0.00524	0.00513

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00168	0.00169	0.00168
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00237	-0.00238	-0.00237
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00436	0.00430	0.00424
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00001	-0.00009	-0.00013

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00167	-0.00169	-0.00168
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00237	0.00239	0.00237
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00091	0.00078	0.00071
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00526	0.00516	0.00508

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00763	0.00746	0.00731
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00541	0.00524	0.00509
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00907	0.00884	0.00867
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00698	0.00675	0.00659
	(!D * SET_B * !Q * Q_N)	0.00762	0.00743	0.00729
	(!D * SET_B * !Q * Q_N)	0.00539	0.00521	0.00507
	(!D * !SET_B * Q * !Q_N)	0.00949	0.00933	0.00924
	(!D * !SET_B * Q * !Q_N)	0.00712	0.00698	0.00688

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	(D * RESET_B * SET_B * !Q * Q_N)	0.00791	0.00775	0.00755
	(D * RESET_B * SET_B * !Q * Q_N)	0.01027	0.01010	0.00991
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00410	0.00395	0.00384
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00633	0.00617	0.00606
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00516	0.00499	0.00485
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00725	0.00707	0.00693
	(!D * SET_B * !Q * Q_N)	0.00399	0.00383	0.00372
	(!D * SET_B * !Q * Q_N)	0.00621	0.00605	0.00594
	(!D * RESET_B * SET_B * Q * !Q_N)	0.00835	0.00817	0.00816
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01045	0.01026	0.01024
	(!D * !SET_B * Q * !Q_N)	0.00551	0.00534	0.00532
	(!D * !SET_B * Q * !Q_N)	0.00788	0.00770	0.00768

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	RESET_B	CLK	Q	Q_N
0	1	R	0	1
1	1	R	1	0
x	0	x	0	1
x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrbp_1	38.36160
sky130_fd_sc_hs__dfrbp_2	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	RESET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfrbp_1	0.00163	0.00513	0.00275	0.18506	0.18337
sky130_fd_sc_hs__dfrbp_2	0.00148	0.00493	0.00275	0.37168	0.37470

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.00050	0.00058
sky130_fd_sc_hs__dfrbp_2	0.00000	0.00058	0.00066

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RR)	1.41826	2.73158	10.67270
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	1.79157	2.87198	11.21960

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.95202	1.65314	4.54030
	RESET_B->Q (FF)	1.49731	2.52938	8.90951
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	1.07559	1.76398	4.67244
	RESET_B->Q (FF)	1.72025	2.74933	9.20209

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q_N (RR)	0.81374	2.20701	10.19020
	RESET_B->Q_N (FR)	1.35990	3.07127	14.54590
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.76662	1.98843	10.26060
	RESET_B->Q_N (FR)	1.41378	2.96827	14.78430

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q_N (RF)	1.05444	1.98743	5.00569
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	1.26365	2.20867	5.33630

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	hold	CLK (R)	-0.12337	-0.25490	-1.06472
	setup	CLK (R)	0.48002	0.51771	1.49759
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.12700	-0.26668	-1.16318
	setup	CLK (R)	0.50525	0.52874	1.56761

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	hold	CLK (R)	-0.17690	-0.47130	-4.60028
	setup	CLK (R)	1.62201	1.72282	5.45007
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.28600	-0.59981	-5.02949
	setup	CLK (R)	1.73230	1.86485	5.61180

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	hold	CLK (R)	-0.12337	-0.25490	-1.06472
	setup	CLK (R)	0.48002	0.51771	1.49759
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.12700	-0.26668	-1.16318
	setup	CLK (R)	0.50525	0.52874	1.56761

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	hold	CLK (R)	-0.17690	-0.47130	-4.60028
	setup	CLK (R)	1.62201	1.72282	5.45007
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.28600	-0.59981	-5.02949
	setup	CLK (R)	1.73230	1.86485	5.61180

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	recovery	CLK (R)	0.49738	0.51258	1.56130
	removal	CLK (R)	-0.24792	-0.35958	-1.50036
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.52134	0.52350	1.62044
	removal	CLK (R)	-0.25679	-0.37122	-1.55762

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	recovery	CLK (R)	0.49738	0.51258	1.56130
	removal	CLK (R)	-0.24792	-0.35958	-1.50036
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.52134	0.52350	1.62044
	removal	CLK (R)	-0.25679	-0.37122	-1.55762

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	min_pulse_width	RESET_B ()	0.95612	2.02912	16.50020
	min_pulse_width	RESET_B ()	0.65346	1.74832	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	1.01934	2.05338	16.50020
	min_pulse_width	RESET_B ()	0.64359	1.72752	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	min_pulse_width	CLK ()	0.95186	1.45020	16.50020
	min_pulse_width	CLK ()	0.34765	1.45020	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	1.33142	1.45020	16.50020
	min_pulse_width	CLK ()	0.36831	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrbp_1	min_pulse_width	CLK ()	0.97088	1.65819	16.50020
	min_pulse_width	CLK ()	1.77166	1.91472	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.97516	1.63393	16.50020
	min_pulse_width	CLK ()	1.75833	1.90779	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00764	0.00762	0.00756
	CLK	0.00652	0.00649	0.00644
sky130_fd_sc_hs__dfrbp_2	CLK	0.00833	0.00842	0.00846
	CLK	0.00723	0.00732	0.00736

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00778	0.00776	0.00758
	CLK	0.00664	0.00662	0.00644
	RESET_B	0.00589	0.00587	0.00557
	RESET_B	0.00805	0.00803	0.00772
sky130_fd_sc_hs__dfrbp_2	CLK	0.00858	0.00869	0.00846
	CLK	0.00748	0.00757	0.00737
	RESET_B	0.00743	0.00756	0.00724
	RESET_B	0.00942	0.00955	0.00922

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00779	0.00776	0.00779
	CLK	0.00664	0.00662	0.00665
	RESET_B	0.00590	0.00587	0.00576
	RESET_B	0.00805	0.00803	0.00792
sky130_fd_sc_hs__dfrbp_2	CLK	0.00859	0.00870	0.00876
	CLK	0.00749	0.00759	0.00767
	RESET_B	0.00744	0.00757	0.00745
	RESET_B	0.00943	0.00956	0.00950

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00764	0.00760	0.00737
	CLK	0.00652	0.00648	0.00626
sky130_fd_sc_hs__dfrbp_2	CLK	0.00832	0.00842	0.00820
	CLK	0.00722	0.00731	0.00710

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00200	0.00194	0.00190
	(CLK * RESET_B)	0.00052	0.00046	0.00042
	(CLK * !RESET_B)	0.00024	0.00023	0.00023
	(CLK * !RESET_B)	-0.00062	-0.00062	-0.00063
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00570	0.00565	0.00557
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00414	0.00409	0.00401
	(!CLK * !RESET_B)	0.00024	0.00024	0.00023
	(!CLK * !RESET_B)	-0.00062	-0.00062	-0.00063
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00231	0.00227	0.00223
	(CLK * RESET_B)	0.00104	0.00099	0.00095
	(CLK * !RESET_B)	0.00027	0.00027	0.00026
	(CLK * !RESET_B)	-0.00052	-0.00052	-0.00053
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00708	0.00705	0.00698
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00589	0.00585	0.00579
	(!CLK * !RESET_B)	0.00027	0.00027	0.00026
	(!CLK * !RESET_B)	-0.00052	-0.00052	-0.00053

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00034	0.00027	0.00025
	(CLK * RESET_B)	0.00183	0.00174	0.00173
	(CLK * !RESET_B)	-0.00022	-0.00023	-0.00023
	(CLK * !RESET_B)	0.00062	0.00064	0.00063
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00344	0.00335	0.00313
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00501	0.00491	0.00465
	(!CLK * !RESET_B)	-0.00023	-0.00023	-0.00023
	(!CLK * !RESET_B)	0.00063	0.00064	0.00063
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00053	0.00045	0.00043
	(CLK * RESET_B)	0.00181	0.00173	0.00171
	(CLK * !RESET_B)	-0.00026	-0.00026	-0.00026
	(CLK * !RESET_B)	0.00054	0.00054	0.00053
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00429	0.00419	0.00392
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00549	0.00539	0.00507
	(!CLK * !RESET_B)	-0.00026	-0.00026	-0.00026
	(!CLK * !RESET_B)	0.00053	0.00053	0.00053

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * D * !Q * Q_N)	0.00361	0.00358	0.00353
	(CLK * D * !Q * Q_N)	-0.00059	-0.00066	-0.00069
	(CLK * !D * !Q * Q_N)	0.00168	0.00169	0.00168
	(CLK * !D * !Q * Q_N)	-0.00186	-0.00187	-0.00186
	(!CLK * D * !Q * Q_N)	0.00745	0.00730	0.00717
	(!CLK * D * !Q * Q_N)	0.00316	0.00302	0.00289
	(!CLK * !D * !Q * Q_N)	0.00163	0.00166	0.00163
	(!CLK * !D * !Q * Q_N)	-0.00190	-0.00192	-0.00190
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00407	0.00403	0.00400
	(CLK * D * !Q * Q_N)	0.00006	0.00002	-0.00001
	(CLK * !D * !Q * Q_N)	0.00185	0.00186	0.00185
	(CLK * !D * !Q * Q_N)	-0.00161	-0.00162	-0.00161
	(!CLK * D * !Q * Q_N)	0.00896	0.00881	0.00868
	(!CLK * D * !Q * Q_N)	0.00505	0.00490	0.00477
	(!CLK * !D * !Q * Q_N)	0.00183	0.00183	0.00182
	(!CLK * !D * !Q * Q_N)	-0.00164	-0.00164	-0.00164

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * D * !Q * Q_N)	-0.00092	-0.00100	-0.00103
	(CLK * D * !Q * Q_N)	0.00332	0.00323	0.00319
	(CLK * !D * !Q * Q_N)	-0.00166	-0.00169	-0.00168
	(CLK * !D * !Q * Q_N)	0.00186	0.00188	0.00186
	(!CLK * D * !Q * Q_N)	0.00263	0.00243	0.00225
	(!CLK * D * !Q * Q_N)	0.00691	0.00670	0.00652
	(!CLK * !D * !Q * Q_N)	-0.00162	-0.00165	-0.00163
	(!CLK * !D * !Q * Q_N)	0.00190	0.00192	0.00191
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00091	-0.00099	-0.00102
	(CLK * D * !Q * Q_N)	0.00309	0.00303	0.00299
	(CLK * !D * !Q * Q_N)	-0.00183	-0.00186	-0.00185
	(CLK * !D * !Q * Q_N)	0.00161	0.00163	0.00162
	(!CLK * D * !Q * Q_N)	0.00333	0.00315	0.00300
	(!CLK * D * !Q * Q_N)	0.00723	0.00708	0.00690
	(!CLK * !D * !Q * Q_N)	-0.00180	-0.00183	-0.00182
	(!CLK * !D * !Q * Q_N)	0.00164	0.00166	0.00164

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(D * RESET_B * Q * !Q_N)	0.00729	0.00712	0.00699
	(D * RESET_B * Q * !Q_N)	0.00502	0.00485	0.00472
	(D * !RESET_B * !Q * Q_N)	0.00756	0.00738	0.00725
	(D * !RESET_B * !Q * Q_N)	0.00528	0.00511	0.00499
	(!D * !Q * Q_N)	0.00756	0.00737	0.00724
	(!D * !Q * Q_N)	0.00529	0.00511	0.00498
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00661	0.00644	0.00632
	(D * RESET_B * Q * !Q_N)	0.00442	0.00424	0.00411
	(D * !RESET_B * !Q * Q_N)	0.00668	0.00651	0.00637
	(D * !RESET_B * !Q * Q_N)	0.00447	0.00430	0.00417
	(!D * !Q * Q_N)	0.00668	0.00651	0.00637
	(!D * !Q * Q_N)	0.00447	0.00430	0.00417

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(D * RESET_B * Q * !Q_N)	0.00419	0.00404	0.00393
	(D * RESET_B * Q * !Q_N)	0.00647	0.00631	0.00620
	(D * RESET_B * !Q * Q_N)	0.00763	0.00747	0.00730
	(D * RESET_B * !Q * Q_N)	0.00983	0.00966	0.00950
	(D * !RESET_B * !Q * Q_N)	0.00392	0.00376	0.00365
	(D * !RESET_B * !Q * Q_N)	0.00619	0.00603	0.00592
	(!D * RESET_B * Q * !Q_N)	0.00779	0.00762	0.00759
	(!D * RESET_B * Q * !Q_N)	0.01014	0.00996	0.00991
	(!D * !Q * Q_N)	0.00392	0.00376	0.00365
	(!D * !Q * Q_N)	0.00619	0.00603	0.00592
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00422	0.00406	0.00395
	(D * RESET_B * Q * !Q_N)	0.00643	0.00627	0.00615
	(D * RESET_B * !Q * Q_N)	0.00926	0.00909	0.00891
	(D * RESET_B * !Q * Q_N)	0.01155	0.01138	0.01119
	(D * !RESET_B * !Q * Q_N)	0.00418	0.00403	0.00392
	(D * !RESET_B * !Q * Q_N)	0.00640	0.00623	0.00613
	(!D * RESET_B * Q * !Q_N)	0.00854	0.00838	0.00833
	(!D * RESET_B * Q * !Q_N)	0.01067	0.01050	0.01043
	(!D * !Q * Q_N)	0.00418	0.00403	0.00392
	(!D * !Q * Q_N)	0.00640	0.00623	0.00613

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK_N	Q
0	1	F	0
1	1	F	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtn_1	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK_N	Q
sky130_fd_sc_hs__dfrtn_1	0.00160	0.00493	0.00262	0.18358

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.00047	0.00054

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtn_1	CLK_N->Q (FR)	1.61518	3.32782	14.47810

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtn_1	CLK_N->Q (FF)	1.00111	2.02761	8.08090
	RESET_B->Q (FF)	1.41967	2.45232	8.81932

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	hold	CLK_N (F)	0.37122	0.51823	3.61836
	setup	CLK_N (F)	-0.02554	-0.21353	-3.13354

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	hold	CLK_N (F)	-0.03240	-0.09978	-2.86253
	setup	CLK_N (F)	1.83116	1.75053	3.93843

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	hold	CLK_N (F)	0.37122	0.51823	3.61836
	setup	CLK_N (F)	-0.02554	-0.21353	-3.13354

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	hold	CLK_N (F)	-0.03240	-0.09978	-2.86253
	setup	CLK_N (F)	1.83116	1.75053	3.93843

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	recovery	CLK_N (F)	-0.01134	-0.21224	-3.12332
	removal	CLK_N (F)	0.22493	0.37023	3.23220

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	recovery	CLK_N (F)	-0.01134	-0.21224	-3.12332
	removal	CLK_N (F)	0.22493	0.37023	3.23220

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	min_pulse_width	RESET_B ()	0.63970	1.74486	16.50020
	min_pulse_width	RESET_B ()	0.94199	2.03952	16.50020

Constraints(ns) for CLK_N rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	min_pulse_width	CLK_N ()	0.44061	1.45020	16.50020
	min_pulse_width	CLK_N ()	1.62353	1.45020	16.50020

Constraints(ns) for CLK_N falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtn_1	min_pulse_width	CLK_N ()	1.15214	1.64779	16.50020
	min_pulse_width	CLK_N ()	0.69855	1.70672	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01200	0.01191	0.01213
	CLK_N	0.01411	0.01402	0.01424

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01113	0.01100	0.01077
	CLK_N	0.01319	0.01306	0.01281
	RESET_B	0.01053	0.01041	0.01015
	RESET_B	0.01452	0.01439	0.01409

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(CLK_N * RESET_B)	0.00562	0.00557	0.00549
	(CLK_N * RESET_B)	0.00427	0.00422	0.00414
	(CLK_N * !RESET_B)	0.00024	0.00024	0.00023
	(CLK_N * !RESET_B)	-0.00062	-0.00062	-0.00062
	(!CLK_N * RESET_B)	0.00194	0.00189	0.00185
	(!CLK_N * RESET_B)	0.00055	0.00049	0.00045
	(!CLK_N * !RESET_B)	0.00024	0.00024	0.00023
	(!CLK_N * !RESET_B)	-0.00062	-0.00061	-0.00062

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(CLK_N * RESET_B)	0.00399	0.00389	0.00363
	(CLK_N * RESET_B)	0.00534	0.00525	0.00494
	(CLK_N * !RESET_B)	-0.00023	-0.00023	-0.00023
	(CLK_N * !RESET_B)	0.00063	0.00063	0.00062
	(!CLK_N * RESET_B)	0.00039	0.00032	0.00030
	(!CLK_N * RESET_B)	0.00179	0.00171	0.00169
	(!CLK_N * !RESET_B)	-0.00023	-0.00023	-0.00023
	(!CLK_N * !RESET_B)	0.00062	0.00063	0.00062

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(CLK_N * D * !Q)	0.00734	0.00721	0.00708
	(CLK_N * D * !Q)	0.00340	0.00327	0.00313
	(CLK_N * !D * !Q)	0.00176	0.00180	0.00177
	(CLK_N * !D * !Q)	-0.00162	-0.00164	-0.00163
	(!CLK_N * D * !Q)	0.00344	0.00341	0.00338
	(!CLK_N * D * !Q)	-0.00056	-0.00061	-0.00064
	(!CLK_N * !D * !Q)	0.00173	0.00175	0.00173
	(!CLK_N * !D * !Q)	-0.00167	-0.00169	-0.00167

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(CLK_N * D * !Q)	0.00312	0.00295	0.00278
	(CLK_N * D * !Q)	0.00707	0.00690	0.00672
	(CLK_N * !D * !Q)	-0.00176	-0.00179	-0.00177
	(CLK_N * !D * !Q)	0.00163	0.00164	0.00163
	(!CLK_N * D * !Q)	-0.00080	-0.00087	-0.00090
	(!CLK_N * D * !Q)	0.00320	0.00314	0.00310
	(!CLK_N * !D * !Q)	-0.00171	-0.00174	-0.00173
	(!CLK_N * !D * !Q)	0.00167	0.00169	0.00168

Passive power(pJ) for CLK_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(D * RESET_B * Q)	0.00691	0.00668	0.00655
	(D * RESET_B * Q)	0.00483	0.00460	0.00447
	(D * RESET_B * !Q)	0.01064	0.01043	0.01037
	(D * RESET_B * !Q)	0.00861	0.00839	0.00833
	(D * !RESET_B * !Q)	0.00681	0.00659	0.00646
	(D * !RESET_B * !Q)	0.00473	0.00451	0.00438
	(!D * RESET_B * Q)	0.01045	0.01016	0.01002
	(!D * RESET_B * Q)	0.00832	0.00803	0.00789
	(!D * !Q)	0.00681	0.00659	0.00646
	(!D * !Q)	0.00473	0.00450	0.00438

Passive power(pJ) for CLK_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	(D * RESET_B * Q)	0.00501	0.00486	0.00474
	(D * RESET_B * Q)	0.00710	0.00694	0.00683
	(D * !RESET_B * !Q)	0.00512	0.00497	0.00485
	(D * !RESET_B * !Q)	0.00721	0.00705	0.00693
	(!D * !Q)	0.00512	0.00497	0.00485
	(!D * !Q)	0.00721	0.00705	0.00693

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtp_1	36.76320
sky130_fd_sc_hs__dfrtp_2	38.36160
sky130_fd_sc_hs__dfrtp_4	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK	Q
sky130_fd_sc_hs__dfrtp_1	0.00161	0.00512	0.00277	0.18934
sky130_fd_sc_hs__dfrtp_2	0.00160	0.00502	0.00275	0.37588
sky130_fd_sc_hs__dfrtp_4	0.00162	0.00519	0.00275	0.74582

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	0.00047	0.00054
sky130_fd_sc_hs__dfrtp_2	0.00000	0.00051	0.00057
sky130_fd_sc_hs__dfrtp_4	0.00000	0.00060	0.00067

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RR)	1.05532	2.44308	10.53230
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	1.04120	2.24026	10.52630
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	1.34464	2.40432	10.88880

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.94462	1.64062	4.54248
	RESET_B->Q (FF)	1.46473	2.49272	8.89558
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	1.06762	1.77768	4.72261
	RESET_B->Q (FF)	1.58834	2.63302	9.07739
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	1.06020	1.74884	4.79502
	RESET_B->Q (FF)	1.61962	2.63363	9.15934

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	hold	CLK (R)	-0.13074	-0.26560	-1.10971
	setup	CLK (R)	0.55379	0.58283	1.55834
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.12854	-0.26308	-1.09335
	setup	CLK (R)	0.53301	0.57122	1.55449
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.13017	-0.25937	-1.06156
	setup	CLK (R)	0.59423	0.62381	1.54805

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	hold	CLK (R)	-0.14722	-0.43324	-4.35070
	setup	CLK (R)	1.62272	1.73412	5.46126
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.14151	-0.43294	-4.33589
	setup	CLK (R)	1.62315	1.73607	5.45574
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.17943	-0.46408	-4.44658
	setup	CLK (R)	1.74712	1.87619	5.52675

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	hold	CLK (R)	-0.13074	-0.26560	-1.10971
	setup	CLK (R)	0.55379	0.58283	1.55834
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.12854	-0.26308	-1.09335
	setup	CLK (R)	0.53301	0.57122	1.55449
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.13017	-0.25937	-1.06156
	setup	CLK (R)	0.59423	0.62381	1.54805

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	hold	CLK (R)	-0.14722	-0.43324	-4.35070
	setup	CLK (R)	1.62272	1.73412	5.46126
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.14151	-0.43294	-4.33589
	setup	CLK (R)	1.62315	1.73607	5.45574
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.17943	-0.46408	-4.44658
	setup	CLK (R)	1.74712	1.87619	5.52675

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	recovery	CLK (R)	0.57378	0.58044	1.61469
	removal	CLK (R)	-0.24204	-0.35599	-1.49939
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.55214	0.56714	1.60605
	removal	CLK (R)	-0.23856	-0.35545	-1.49149
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.61094	0.61613	1.59582
	removal	CLK (R)	-0.25357	-0.36326	-1.48755

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	recovery	CLK (R)	0.57378	0.58044	1.61469
	removal	CLK (R)	-0.24204	-0.35599	-1.49939
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.55214	0.56714	1.60605
	removal	CLK (R)	-0.23856	-0.35545	-1.49149
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.61094	0.61613	1.59582
	removal	CLK (R)	-0.25357	-0.36326	-1.48755

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	min_pulse_width	RESET_B ()	0.95391	2.03259	16.50020
	min_pulse_width	RESET_B ()	0.64713	1.74832	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.96135	2.03259	16.50020
	min_pulse_width	RESET_B ()	0.67096	1.77259	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	1.00392	2.07765	16.50020
	min_pulse_width	RESET_B ()	0.65029	1.74832	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	min_pulse_width	CLK ()	0.60328	1.45020	16.50020
	min_pulse_width	CLK ()	0.34765	1.45020	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.63168	1.45020	16.50020
	min_pulse_width	CLK ()	0.35023	1.45020	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.86665	1.45020	16.50020
	min_pulse_width	CLK ()	0.37089	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfrtp_1	min_pulse_width	CLK ()	1.04787	1.67206	16.50020
	min_pulse_width	CLK ()	1.77804	1.92165	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	1.03180	1.67552	16.50020
	min_pulse_width	CLK ()	1.79044	1.93899	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	1.13276	1.72059	16.50020
	min_pulse_width	CLK ()	1.92654	2.07072	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.01370	0.01359	0.01352
	CLK	0.01147	0.01136	0.01130
sky130_fd_sc_hs__dfrtp_2	CLK	0.01504	0.01497	0.01498
	CLK	0.01281	0.01275	0.01278
sky130_fd_sc_hs__dfrtp_4	CLK	0.01892	0.01903	0.01928
	CLK	0.01660	0.01671	0.01704

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.01463	0.01453	0.01449
	CLK	0.01227	0.01217	0.01213
	RESET_B	0.01063	0.01050	0.01021
	RESET_B	0.01494	0.01479	0.01448
sky130_fd_sc_hs__dfrtp_2	CLK	0.01565	0.01569	0.01569
	CLK	0.01331	0.01335	0.01334
	RESET_B	0.01175	0.01175	0.01148
	RESET_B	0.01596	0.01597	0.01568
sky130_fd_sc_hs__dfrtp_4	CLK	0.02022	0.02047	0.02050
	CLK	0.01778	0.01802	0.01807
	RESET_B	0.01600	0.01622	0.01596
	RESET_B	0.02035	0.02057	0.02030

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00198	0.00192	0.00188
	(CLK * RESET_B)	0.00051	0.00045	0.00041
	(CLK * !RESET_B)	0.00023	0.00023	0.00023
	(CLK * !RESET_B)	-0.00061	-0.00061	-0.00062
	(!CLK * RESET_B)	0.00587	0.00582	0.00574
	(!CLK * RESET_B)	0.00431	0.00426	0.00417
	(!CLK * !RESET_B)	0.00023	0.00023	0.00023
	(!CLK * !RESET_B)	-0.00061	-0.00061	-0.00062
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00192	0.00187	0.00183
	(CLK * RESET_B)	0.00048	0.00042	0.00038
	(CLK * !RESET_B)	0.00023	0.00023	0.00023
	(CLK * !RESET_B)	-0.00061	-0.00061	-0.00062
	(!CLK * RESET_B)	0.00562	0.00556	0.00548
	(!CLK * RESET_B)	0.00409	0.00403	0.00395
	(!CLK * !RESET_B)	0.00023	0.00023	0.00023
	(!CLK * !RESET_B)	-0.00061	-0.00061	-0.00062
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00199	0.00193	0.00189
	(CLK * RESET_B)	0.00052	0.00047	0.00043
	(CLK * !RESET_B)	0.00024	0.00023	0.00023
	(CLK * !RESET_B)	-0.00061	-0.00061	-0.00062
	(!CLK * RESET_B)	0.00648	0.00643	0.00634
	(!CLK * RESET_B)	0.00492	0.00487	0.00478
	(!CLK * !RESET_B)	0.00024	0.00024	0.00023
	(!CLK * !RESET_B)	-0.00061	-0.00062	-0.00062

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00033	0.00026	0.00024
	(CLK * RESET_B)	0.00181	0.00173	0.00171
	(CLK * !RESET_B)	-0.00022	-0.00022	-0.00022
	(CLK * !RESET_B)	0.00061	0.00062	0.00062
	(!CLK * RESET_B)	0.00363	0.00353	0.00327
	(!CLK * RESET_B)	0.00520	0.00510	0.00478
	(!CLK * !RESET_B)	-0.00022	-0.00023	-0.00022
	(!CLK * !RESET_B)	0.00062	0.00062	0.00062
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00033	0.00026	0.00024
	(CLK * RESET_B)	0.00179	0.00171	0.00169
	(CLK * !RESET_B)	-0.00022	-0.00022	-0.00022
	(CLK * !RESET_B)	0.00061	0.00062	0.00062
	(!CLK * RESET_B)	0.00363	0.00353	0.00327
	(!CLK * RESET_B)	0.00516	0.00506	0.00474
	(!CLK * !RESET_B)	-0.00022	-0.00023	-0.00022
	(!CLK * !RESET_B)	0.00062	0.00062	0.00062
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00034	0.00026	0.00024
	(CLK * RESET_B)	0.00181	0.00173	0.00171
	(CLK * !RESET_B)	-0.00022	-0.00023	-0.00023
	(CLK * !RESET_B)	0.00062	0.00063	0.00062
	(!CLK * RESET_B)	0.00371	0.00361	0.00329
	(!CLK * RESET_B)	0.00528	0.00518	0.00479
	(!CLK * !RESET_B)	-0.00023	-0.00023	-0.00023
	(!CLK * !RESET_B)	0.00062	0.00063	0.00062

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * D * !Q)	0.00361	0.00356	0.00352
	(CLK * D * !Q)	-0.00060	-0.00066	-0.00070
	(CLK * !D * !Q)	0.00167	0.00169	0.00167
	(CLK * !D * !Q)	-0.00185	-0.00186	-0.00185
	(!CLK * D * !Q)	0.00765	0.00751	0.00737
	(!CLK * D * !Q)	0.00336	0.00322	0.00308
	(!CLK * !D * !Q)	0.00160	0.00163	0.00161
	(!CLK * !D * !Q)	-0.00190	-0.00193	-0.00191
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00353	0.00348	0.00344
	(CLK * D * !Q)	-0.00062	-0.00067	-0.00071
	(CLK * !D * !Q)	0.00166	0.00167	0.00166
	(CLK * !D * !Q)	-0.00182	-0.00182	-0.00182
	(!CLK * D * !Q)	0.00735	0.00720	0.00708
	(!CLK * D * !Q)	0.00314	0.00301	0.00287
	(!CLK * !D * !Q)	0.00160	0.00161	0.00160
	(!CLK * !D * !Q)	-0.00188	-0.00188	-0.00188
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00372	0.00367	0.00362
	(CLK * D * !Q)	-0.00056	-0.00062	-0.00065
	(CLK * !D * !Q)	0.00178	0.00179	0.00178
	(CLK * !D * !Q)	-0.00182	-0.00182	-0.00182
	(!CLK * D * !Q)	0.00821	0.00805	0.00791
	(!CLK * D * !Q)	0.00385	0.00371	0.00357
	(!CLK * !D * !Q)	0.00163	0.00164	0.00162
	(!CLK * !D * !Q)	-0.00197	-0.00199	-0.00197

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * D * !Q)	-0.00093	-0.00101	-0.00104
	(CLK * D * !Q)	0.00331	0.00321	0.00317
	(CLK * !D * !Q)	-0.00166	-0.00169	-0.00167
	(CLK * !D * !Q)	0.00185	0.00187	0.00185
	(!CLK * D * !Q)	0.00276	0.00255	0.00237
	(!CLK * D * !Q)	0.00704	0.00685	0.00666
	(!CLK * !D * !Q)	-0.00160	-0.00162	-0.00161
	(!CLK * !D * !Q)	0.00191	0.00193	0.00191
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00091	-0.00099	-0.00102
	(CLK * D * !Q)	0.00326	0.00317	0.00313
	(CLK * !D * !Q)	-0.00164	-0.00167	-0.00166
	(CLK * !D * !Q)	0.00182	0.00184	0.00182
	(!CLK * D * !Q)	0.00277	0.00257	0.00240
	(!CLK * D * !Q)	0.00697	0.00679	0.00660
	(!CLK * !D * !Q)	-0.00159	-0.00161	-0.00160
	(!CLK * !D * !Q)	0.00188	0.00189	0.00188
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00102	-0.00110	-0.00113
	(CLK * D * !Q)	0.00326	0.00318	0.00314
	(CLK * !D * !Q)	-0.00176	-0.00179	-0.00178
	(CLK * !D * !Q)	0.00182	0.00183	0.00182
	(!CLK * D * !Q)	0.00292	0.00271	0.00253
	(!CLK * D * !Q)	0.00727	0.00707	0.00686
	(!CLK * !D * !Q)	-0.00161	-0.00163	-0.00162
	(!CLK * !D * !Q)	0.00197	0.00199	0.00198

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(D * RESET_B * Q)	0.00756	0.00738	0.00724
	(D * RESET_B * Q)	0.00526	0.00508	0.00495
	(D * !RESET_B * !Q)	0.00791	0.00772	0.00759
	(D * !RESET_B * !Q)	0.00560	0.00542	0.00529
	(!D * !Q)	0.00791	0.00772	0.00759
	(!D * !Q)	0.00560	0.00542	0.00529
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.00750	0.00733	0.00719
	(D * RESET_B * Q)	0.00522	0.00504	0.00491
	(D * !RESET_B * !Q)	0.00785	0.00767	0.00754
	(D * !RESET_B * !Q)	0.00556	0.00539	0.00525
	(!D * !Q)	0.00785	0.00767	0.00754
	(!D * !Q)	0.00556	0.00538	0.00525
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.00793	0.00775	0.00761
	(D * RESET_B * Q)	0.00555	0.00537	0.00524
	(D * !RESET_B * !Q)	0.00822	0.00804	0.00790
	(D * !RESET_B * !Q)	0.00584	0.00566	0.00552
	(!D * !Q)	0.00822	0.00804	0.00790
	(!D * !Q)	0.00584	0.00566	0.00552

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__dfrtp_1	**(D * RESET_B * Q)**	0.00423	0.00407	0.00396
	(D * RESET_B * Q)	0.00653	0.00637	0.00626
	(D * RESET_B * !Q)	0.00786	0.00769	0.00752
	(D * RESET_B * !Q)	0.01007	0.00989	0.00973
	(D * !RESET_B * !Q)	0.00391	0.00375	0.00364
	(D * !RESET_B * !Q)	0.00621	0.00605	0.00593
	(!D * RESET_B * Q)	0.00803	0.00786	0.00778
	(!D * RESET_B * Q)	0.01043	0.01025	0.01014
	(!D * !Q)	0.00390	0.00375	0.00363
	(!D * !Q)	0.00621	0.00605	0.00593
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00424	0.00408	0.00397
	(D * RESET_B * Q)	0.00653	0.00637	0.00626
	(D * RESET_B * !Q)	0.00765	0.00748	0.00732
	(D * RESET_B * !Q)	0.00987	0.00969	0.00953
	(D * !RESET_B * !Q)	0.00392	0.00376	0.00365
	(D * !RESET_B * !Q)	0.00621	0.00605	0.00593
	(!D * RESET_B * Q)	0.00805	0.00787	0.00779
	(!D * RESET_B * Q)	0.01042	0.01024	0.01011
	(!D * !Q)	0.00392	0.00376	0.00365
	(!D * !Q)	0.00621	0.00605	0.00594
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00440	0.00425	0.00413
	(D * RESET_B * Q)	0.00679	0.00662	0.00651
	(D * RESET_B * !Q)	0.00869	0.00853	0.00835
	(D * RESET_B * !Q)	0.01099	0.01081	0.01063
	(D * !RESET_B * !Q)	0.00414	0.00398	0.00387
	(D * !RESET_B * !Q)	0.00652	0.00636	0.00625
	(!D * RESET_B * Q)	0.00823	0.00806	0.00797
	(!D * RESET_B * Q)	0.01071	0.01053	0.01039
	(!D * !Q)	0.00414	0.00398	0.00387
	(!D * !Q)	0.00652	0.00636	0.00625

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	SET_B	CLK	Q	Q_N
0	1	R	0	1
1	1	R	1	0
x	0	x	1	0
x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfsbp_1	39.96000
sky130_fd_sc_hs__dfsbp_2	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfsbp_1	0.00159	0.00297	0.00271	0.18463	0.18222
sky130_fd_sc_hs__dfsbp_2	0.00159	0.00302	0.00272	0.37683	0.35888

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.00049	0.00059
sky130_fd_sc_hs__dfsbp_2	0.00000	0.00057	0.00067

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RR)	1.64277	2.96830	10.98280
	SET_B->Q (FR)	1.77660	3.43275	15.09160
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	1.98220	3.07726	11.32320
	SET_B->Q (FR)	2.14382	3.56747	15.47360

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	1.05494	1.75521	4.64533
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	1.20155	1.88600	4.82140

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q_N (RR)	0.90532	2.33161	10.48260
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.89130	2.11080	10.24410

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q_N (RF)	1.23077	2.22225	5.26869
	SET_B->Q_N (FF)	1.34483	2.68214	9.31677
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	1.42944	2.43293	5.57069
	SET_B->Q_N (FF)	1.56770	2.92188	9.64468

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	hold	CLK (R)	-0.11086	-0.24819	-1.29435
	setup	CLK (R)	0.30072	0.39798	1.48383
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.10634	-0.24256	-1.28051
	setup	CLK (R)	0.27108	0.37415	1.46238

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	hold	CLK (R)	-0.17324	-0.47387	-4.41790
	setup	CLK (R)	1.76603	1.88490	5.59289
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.19051	-0.49537	-4.49704
	setup	CLK (R)	1.72133	1.84285	5.55784

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	hold	CLK (R)	-0.11086	-0.24819	-1.29435
	setup	CLK (R)	0.30072	0.39798	1.48383
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.10634	-0.24256	-1.28051
	setup	CLK (R)	0.27108	0.37415	1.46238

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	hold	CLK (R)	-0.17324	-0.47387	-4.41790
	setup	CLK (R)	1.76603	1.88490	5.59289
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.19051	-0.49537	-4.49704
	setup	CLK (R)	1.72133	1.84285	5.55784

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	recovery	CLK (R)	-0.48550	-0.58842	-1.23147
	removal	CLK (R)	0.53790	0.63031	1.26821
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.48608	-0.58516	-1.23950
	removal	CLK (R)	0.53189	0.62740	1.28283

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	recovery	CLK (R)	-0.48550	-0.58842	-1.23147
	removal	CLK (R)	0.53790	0.63031	1.26821
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.48608	-0.58516	-1.23950
	removal	CLK (R)	0.53189	0.62740	1.28283

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	min_pulse_width	SET_B ()	1.28832	2.34458	16.50020
	min_pulse_width	SET_B ()	1.50075	2.61151	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	1.42990	2.48324	16.50020
	min_pulse_width	SET_B ()	1.84806	2.95124	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	min_pulse_width	CLK ()	1.16359	1.45020	16.50020
	min_pulse_width	CLK ()	0.42511	1.45020	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	1.49873	1.45020	16.50020
	min_pulse_width	CLK ()	0.45093	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfsbp_1	min_pulse_width	CLK ()	0.83915	1.65126	16.50020
	min_pulse_width	CLK ()	2.04572	2.16085	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.80926	1.64433	16.50020
	min_pulse_width	CLK ()	1.99218	2.11232	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00783	0.00780	0.00775
	CLK	0.00671	0.00669	0.00664
	SET_B	0.00703	0.00711	0.00704
	SET_B	0.00808	0.00817	0.00811
sky130_fd_sc_hs__dfsbp_2	CLK	0.00908	0.00916	0.00917
	CLK	0.00795	0.00803	0.00805
	SET_B	0.00823	0.00843	0.00846
	SET_B	0.00926	0.00946	0.00949

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00819	0.00818	0.00797
	CLK	0.00715	0.00713	0.00693
sky130_fd_sc_hs__dfsbp_2	CLK	0.00954	0.00962	0.00940
	CLK	0.00847	0.00856	0.00832

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00821	0.00819	0.00820
	CLK	0.00716	0.00715	0.00715
sky130_fd_sc_hs__dfsbp_2	CLK	0.00955	0.00964	0.00969
	CLK	0.00848	0.00857	0.00862

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00782	0.00779	0.00755
	CLK	0.00670	0.00668	0.00644
	SET_B	0.00701	0.00709	0.00686
	SET_B	0.00806	0.00815	0.00791
sky130_fd_sc_hs__dfsbp_2	CLK	0.00907	0.00915	0.00891
	CLK	0.00795	0.00802	0.00779
	SET_B	0.00822	0.00841	0.00818
	SET_B	0.00925	0.00944	0.00920

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00178	0.00172	0.00168
	CLK	0.00047	0.00041	0.00038
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00513	0.00507	0.00499
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00369	0.00362	0.00355
	(!CLK * !SET_B * Q * !Q_N)	0.00395	0.00391	0.00387
	(!CLK * !SET_B * Q * !Q_N)	0.00244	0.00241	0.00237
sky130_fd_sc_hs__dfsbp_2	CLK	0.00177	0.00171	0.00167
	CLK	0.00046	0.00040	0.00037
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00507	0.00501	0.00493
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00357	0.00351	0.00343
	(!CLK * !SET_B * Q * !Q_N)	0.00394	0.00390	0.00386
	(!CLK * !SET_B * Q * !Q_N)	0.00239	0.00235	0.00231

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00023	0.00018	0.00016
	CLK	0.00153	0.00148	0.00146
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00376	0.00369	0.00319
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00521	0.00514	0.00458
	(!CLK * !SET_B * Q * !Q_N)	0.00221	0.00214	0.00192
	(!CLK * !SET_B * Q * !Q_N)	0.00372	0.00365	0.00340
sky130_fd_sc_hs__dfsbp_2	CLK	0.00023	0.00017	0.00016
	CLK	0.00153	0.00149	0.00146
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00359	0.00352	0.00308
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00509	0.00502	0.00453
	(!CLK * !SET_B * Q * !Q_N)	0.00212	0.00205	0.00186
	(!CLK * !SET_B * Q * !Q_N)	0.00368	0.00361	0.00338

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	(CLK * Q * !Q_N)	0.00127	0.00129	0.00127
	(CLK * Q * !Q_N)	-0.00103	-0.00104	-0.00103
	(!CLK * D * Q * !Q_N)	0.00140	0.00142	0.00141
	(!CLK * D * Q * !Q_N)	-0.00090	-0.00091	-0.00090
	(!CLK * !D * Q * !Q_N)	0.00257	0.00255	0.00252
	(!CLK * !D * Q * !Q_N)	0.00018	0.00015	0.00013
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00129	0.00131	0.00129
	(CLK * Q * !Q_N)	-0.00100	-0.00101	-0.00100
	(!CLK * D * Q * !Q_N)	0.00139	0.00141	0.00139
	(!CLK * D * Q * !Q_N)	-0.00090	-0.00091	-0.00090
	(!CLK * !D * Q * !Q_N)	0.00246	0.00244	0.00242
	(!CLK * !D * Q * !Q_N)	0.00009	0.00006	0.00005

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	(CLK * Q * !Q_N)	-0.00126	-0.00128	-0.00127
	(CLK * Q * !Q_N)	0.00103	0.00104	0.00104
	(!CLK * D * Q * !Q_N)	-0.00140	-0.00141	-0.00141
	(!CLK * D * Q * !Q_N)	0.00090	0.00091	0.00090
	(!CLK * !D * Q * !Q_N)	-0.00012	-0.00017	-0.00018
	(!CLK * !D * Q * !Q_N)	0.00227	0.00224	0.00221
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00128	-0.00130	-0.00129
	(CLK * Q * !Q_N)	0.00100	0.00101	0.00100
	(!CLK * D * Q * !Q_N)	-0.00138	-0.00140	-0.00139
	(!CLK * D * Q * !Q_N)	0.00090	0.00091	0.00090
	(!CLK * !D * Q * !Q_N)	-0.00009	-0.00013	-0.00015
	(!CLK * !D * Q * !Q_N)	0.00227	0.00224	0.00221

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	(D * Q * !Q_N)	0.00777	0.00759	0.00745
	(D * Q * !Q_N)	0.00561	0.00543	0.00529
	(!D * SET_B * !Q * Q_N)	0.00768	0.00749	0.00735
	(!D * SET_B * !Q * Q_N)	0.00552	0.00533	0.00519
	(!D * !SET_B * Q * !Q_N)	0.01264	0.01251	0.01264
	(!D * !SET_B * Q * !Q_N)	0.01027	0.01015	0.01028
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.00767	0.00750	0.00736
	(D * Q * !Q_N)	0.00548	0.00529	0.00516
	(!D * SET_B * !Q * Q_N)	0.00764	0.00745	0.00731
	(!D * SET_B * !Q * Q_N)	0.00545	0.00525	0.00511
	(!D * !SET_B * Q * !Q_N)	0.01245	0.01232	0.01243
	(!D * !SET_B * Q * !Q_N)	0.01000	0.00989	0.00999

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	(D * SET_B * !Q * Q_N)	0.00786	0.00770	0.00753
	(D * SET_B * !Q * Q_N)	0.00988	0.00971	0.00954
	(D * Q * !Q_N)	0.00464	0.00450	0.00439
	(D * Q * !Q_N)	0.00681	0.00665	0.00655
	(!D * SET_B * Q * !Q_N)	0.00900	0.00884	0.00848
	(!D * SET_B * Q * !Q_N)	0.01131	0.01113	0.01073
	(!D * SET_B * !Q * Q_N)	0.00473	0.00459	0.00448
	(!D * SET_B * !Q * Q_N)	0.00690	0.00675	0.00664
	(!D * !SET_B * Q * !Q_N)	0.00748	0.00733	0.00718
	(!D * !SET_B * Q * !Q_N)	0.00985	0.00968	0.00951
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.00771	0.00755	0.00738
	(D * SET_B * !Q * Q_N)	0.00972	0.00955	0.00938
	(D * Q * !Q_N)	0.00457	0.00443	0.00432
	(D * Q * !Q_N)	0.00678	0.00662	0.00652
	(!D * SET_B * Q * !Q_N)	0.00875	0.00859	0.00827
	(!D * SET_B * Q * !Q_N)	0.01115	0.01098	0.01061
	(!D * SET_B * !Q * Q_N)	0.00462	0.00447	0.00436
	(!D * SET_B * !Q * Q_N)	0.00683	0.00667	0.00657
	(!D * !SET_B * Q * !Q_N)	0.00728	0.00715	0.00701
	(!D * !SET_B * Q * !Q_N)	0.00973	0.00959	0.00942

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	SET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	1
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfstp_1	36.76320
sky130_fd_sc_hs__dfstp_2	39.96000
sky130_fd_sc_hs__dfstp_4	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	SET_B	CLK	Q
sky130_fd_sc_hs__dfstp_1	0.00158	0.00310	0.00270	0.18882
sky130_fd_sc_hs__dfstp_2	0.00158	0.00290	0.00272	0.37684
sky130_fd_sc_hs__dfstp_4	0.00157	0.00293	0.00273	0.73364

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	0.00045	0.00056
sky130_fd_sc_hs__dfstp_2	0.00000	0.00050	0.00060
sky130_fd_sc_hs__dfstp_4	0.00000	0.00059	0.00068

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RR)	1.22722	2.61487	10.68420
	SET_B->Q (FR)	1.38220	3.09880	14.75470
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	1.26453	2.46905	10.77450
	SET_B->Q (FR)	1.42173	2.95990	14.87210
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	1.46389	2.52868	10.98120
	SET_B->Q (FR)	1.60460	3.00089	15.08380

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	1.00260	1.69614	4.60300
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	1.10368	1.79989	4.74774
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	1.11016	1.78770	4.76459

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	hold	CLK (R)	-0.10895	-0.24670	-1.27920
	setup	CLK (R)	0.30693	0.39396	1.46502
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.11056	-0.25124	-1.29487
	setup	CLK (R)	0.30493	0.40004	1.48277
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.10653	-0.24366	-1.27084
	setup	CLK (R)	0.27618	0.37633	1.44620

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	hold	CLK (R)	-0.14762	-0.45151	-4.35458
	setup	CLK (R)	1.71273	1.83245	5.55008
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.15153	-0.45139	-4.36649
	setup	CLK (R)	1.72714	1.84769	5.57218
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.16359	-0.46704	-4.40743
	setup	CLK (R)	1.68207	1.79924	5.52729

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	hold	CLK (R)	-0.10895	-0.24670	-1.27920
	setup	CLK (R)	0.30693	0.39396	1.46502
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.11056	-0.25124	-1.29487
	setup	CLK (R)	0.30493	0.40004	1.48277
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.10653	-0.24366	-1.27084
	setup	CLK (R)	0.27618	0.37633	1.44620

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	hold	CLK (R)	-0.14762	-0.45151	-4.35458
	setup	CLK (R)	1.71273	1.83245	5.55008
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.15153	-0.45139	-4.36649
	setup	CLK (R)	1.72714	1.84769	5.57218
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.16359	-0.46704	-4.40743
	setup	CLK (R)	1.68207	1.79924	5.52729

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	recovery	CLK (R)	-0.48479	-0.58794	-1.23429
	removal	CLK (R)	0.52516	0.61955	1.25927
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.49390	-0.59316	-1.23659
	removal	CLK (R)	0.53482	0.62740	1.26079
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.48416	-0.58195	-1.20670
	removal	CLK (R)	0.52306	0.61480	1.23819

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	recovery	CLK (R)	-0.48479	-0.58794	-1.23429
	removal	CLK (R)	0.52516	0.61955	1.25927
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.49390	-0.59316	-1.23659
	removal	CLK (R)	0.53482	0.62740	1.26079
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.48416	-0.58195	-1.20670
	removal	CLK (R)	0.52306	0.61480	1.23819

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	min_pulse_width	SET_B ()	1.08565	2.15392	16.50020
	min_pulse_width	SET_B ()	1.10895	2.23365	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	1.13996	2.19205	16.50020
	min_pulse_width	SET_B ()	1.18874	2.27871	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	1.20169	2.25445	16.50020
	min_pulse_width	SET_B ()	1.31792	2.41391	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	min_pulse_width	CLK ()	0.77627	1.45020	16.50020
	min_pulse_width	CLK ()	0.39929	1.45020	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.83566	1.45020	16.50020
	min_pulse_width	CLK ()	0.41220	1.45020	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.99833	1.45020	16.50020
	min_pulse_width	CLK ()	0.40962	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfstp_1	min_pulse_width	CLK ()	0.84374	1.65473	16.50020
	min_pulse_width	CLK ()	1.97206	2.09498	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.84374	1.65473	16.50020
	min_pulse_width	CLK ()	1.98506	2.10885	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.82130	1.65126	16.50020
	min_pulse_width	CLK ()	1.93579	2.06032	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.01346	0.01327	0.01315
	CLK	0.01133	0.01116	0.01103
	SET_B	0.01167	0.01175	0.01161
	SET_B	0.01394	0.01403	0.01388
sky130_fd_sc_hs__dfstp_2	CLK	0.01521	0.01512	0.01508
	CLK	0.01297	0.01289	0.01286
	SET_B	0.01347	0.01365	0.01357
	SET_B	0.01553	0.01572	0.01563
sky130_fd_sc_hs__dfstp_4	CLK	0.01874	0.01879	0.01896
	CLK	0.01648	0.01654	0.01677
	SET_B	0.01693	0.01730	0.01742
	SET_B	0.01903	0.01938	0.01952

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.01466	0.01452	0.01441
	CLK	0.01243	0.01229	0.01219
sky130_fd_sc_hs__dfstp_2	CLK	0.01614	0.01614	0.01605
	CLK	0.01399	0.01398	0.01388
sky130_fd_sc_hs__dfstp_4	CLK	0.01991	0.02015	0.02010
	CLK	0.01775	0.01798	0.01792

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00178	0.00172	0.00168
	CLK	0.00048	0.00042	0.00039
	(!CLK * SET_B)	0.00506	0.00500	0.00493
	(!CLK * SET_B)	0.00363	0.00357	0.00349
	(!CLK * !SET_B * Q)	0.00392	0.00389	0.00384
	(!CLK * !SET_B * Q)	0.00241	0.00237	0.00233
sky130_fd_sc_hs__dfstp_2	CLK	0.00179	0.00173	0.00169
	CLK	0.00049	0.00043	0.00039
	(!CLK * SET_B)	0.00506	0.00500	0.00492
	(!CLK * SET_B)	0.00361	0.00355	0.00348
	(!CLK * !SET_B * Q)	0.00391	0.00388	0.00383
	(!CLK * !SET_B * Q)	0.00239	0.00236	0.00232
sky130_fd_sc_hs__dfstp_4	CLK	0.00179	0.00173	0.00169
	CLK	0.00049	0.00043	0.00040
	(!CLK * SET_B)	0.00504	0.00498	0.00491
	(!CLK * SET_B)	0.00359	0.00353	0.00345
	(!CLK * !SET_B * Q)	0.00387	0.00384	0.00379
	(!CLK * !SET_B * Q)	0.00236	0.00232	0.00228

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00028	0.00023	0.00021
	CLK	0.00158	0.00153	0.00151
	(!CLK * SET_B)	0.00360	0.00353	0.00311
	(!CLK * SET_B)	0.00504	0.00497	0.00450
	(!CLK * !SET_B * Q)	0.00213	0.00207	0.00188
	(!CLK * !SET_B * Q)	0.00365	0.00358	0.00336
sky130_fd_sc_hs__dfstp_2	CLK	0.00028	0.00022	0.00020
	CLK	0.00158	0.00153	0.00151
	(!CLK * SET_B)	0.00372	0.00365	0.00318
	(!CLK * SET_B)	0.00517	0.00510	0.00457
	(!CLK * !SET_B * Q)	0.00226	0.00219	0.00197
	(!CLK * !SET_B * Q)	0.00378	0.00372	0.00346
sky130_fd_sc_hs__dfstp_4	CLK	0.00029	0.00023	0.00022
	CLK	0.00159	0.00154	0.00151
	(!CLK * SET_B)	0.00355	0.00348	0.00309
	(!CLK * SET_B)	0.00500	0.00493	0.00449
	(!CLK * !SET_B * Q)	0.00212	0.00206	0.00188
	(!CLK * !SET_B * Q)	0.00364	0.00358	0.00337

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00121	0.00123	0.00121
	(CLK * Q)	-0.00114	-0.00115	-0.00114
	(!CLK * D * Q)	0.00132	0.00132	0.00132
	(!CLK * D * Q)	-0.00103	-0.00103	-0.00103
	(!CLK * !D * Q)	0.00244	0.00242	0.00239
	(!CLK * !D * Q)	-0.00001	-0.00005	-0.00006
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00118	0.00120	0.00119
	(CLK * Q)	-0.00103	-0.00105	-0.00104
	(!CLK * D * Q)	0.00129	0.00131	0.00130
	(!CLK * D * Q)	-0.00092	-0.00094	-0.00093
	(!CLK * !D * Q)	0.00242	0.00239	0.00237
	(!CLK * !D * Q)	0.00009	0.00005	0.00004
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00126	0.00128	0.00126
	(CLK * Q)	-0.00101	-0.00102	-0.00101
	(!CLK * D * Q)	0.00136	0.00137	0.00136
	(!CLK * D * Q)	-0.00091	-0.00092	-0.00091
	(!CLK * !D * Q)	0.00243	0.00241	0.00238
	(!CLK * !D * Q)	0.00008	0.00004	0.00003

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00121	-0.00122	-0.00121
	(CLK * Q)	0.00114	0.00115	0.00114
	(!CLK * D * Q)	-0.00131	-0.00132	-0.00132
	(!CLK * D * Q)	0.00103	0.00104	0.00103
	(!CLK * !D * Q)	-0.00005	-0.00009	-0.00011
	(!CLK * !D * Q)	0.00241	0.00236	0.00234
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00118	-0.00120	-0.00119
	(CLK * Q)	0.00104	0.00105	0.00104
	(!CLK * D * Q)	-0.00129	-0.00130	-0.00130
	(!CLK * D * Q)	0.00093	0.00094	0.00093
	(!CLK * !D * Q)	-0.00001	-0.00005	-0.00007
	(!CLK * !D * Q)	0.00232	0.00228	0.00226
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00125	-0.00127	-0.00126
	(CLK * Q)	0.00101	0.00102	0.00101
	(!CLK * D * Q)	-0.00135	-0.00136	-0.00136
	(!CLK * D * Q)	0.00091	0.00092	0.00091
	(!CLK * !D * Q)	-0.00003	-0.00007	-0.00009
	(!CLK * !D * Q)	0.00233	0.00229	0.00226

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.00769	0.00750	0.00736
	(D * Q)	0.00551	0.00533	0.00519
	(!D * SET_B * !Q)	0.00767	0.00748	0.00734
	(!D * SET_B * !Q)	0.00550	0.00530	0.00517
	(!D * !SET_B * Q)	0.01230	0.01219	0.01229
	(!D * !SET_B * Q)	0.00992	0.00981	0.00990
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.00779	0.00761	0.00747
	(D * Q)	0.00561	0.00541	0.00527
	(!D * SET_B * !Q)	0.00771	0.00751	0.00737
	(!D * SET_B * !Q)	0.00552	0.00532	0.00518
	(!D * !SET_B * Q)	0.01248	0.01236	0.01244
	(!D * !SET_B * Q)	0.01007	0.00996	0.01004
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.00770	0.00752	0.00738
	(D * Q)	0.00550	0.00531	0.00517
	(!D * SET_B * !Q)	0.00771	0.00752	0.00737
	(!D * SET_B * !Q)	0.00550	0.00530	0.00516
	(!D * !SET_B * Q)	0.01223	0.01213	0.01221
	(!D * !SET_B * Q)	0.00980	0.00971	0.00977

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__dfstp_1	**(D * SET_B * !Q)**	0.00782	0.00766	0.00748
	(D * SET_B * !Q)	0.00987	0.00970	0.00951
	(D * Q)	0.00467	0.00452	0.00441
	(D * Q)	0.00685	0.00669	0.00658
	(!D * SET_B * Q)	0.00874	0.00858	0.00830
	(!D * SET_B * Q)	0.01106	0.01089	0.01057
	(!D * SET_B * !Q)	0.00469	0.00454	0.00443
	(!D * SET_B * !Q)	0.00687	0.00671	0.00660
	(!D * !SET_B * Q)	0.00731	0.00716	0.00705
	(!D * !SET_B * Q)	0.00971	0.00954	0.00940
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.00776	0.00760	0.00743
	(D * SET_B * !Q)	0.00983	0.00966	0.00949
	(D * Q)	0.00459	0.00444	0.00433
	(D * Q)	0.00679	0.00663	0.00652
	(!D * SET_B * Q)	0.00882	0.00866	0.00834
	(!D * SET_B * Q)	0.01116	0.01099	0.01062
	(!D * SET_B * !Q)	0.00468	0.00454	0.00443
	(!D * SET_B * !Q)	0.00689	0.00673	0.00662
	(!D * !SET_B * Q)	0.00740	0.00725	0.00710
	(!D * !SET_B * Q)	0.00981	0.00965	0.00948
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.00774	0.00757	0.00740
	(D * SET_B * !Q)	0.00980	0.00963	0.00945
	(D * Q)	0.00462	0.00447	0.00436
	(D * Q)	0.00683	0.00667	0.00657
	(!D * SET_B * Q)	0.00861	0.00845	0.00822
	(!D * SET_B * Q)	0.01098	0.01081	0.01054
	(!D * SET_B * !Q)	0.00462	0.00447	0.00436
	(!D * SET_B * !Q)	0.00684	0.00668	0.00657
	(!D * !SET_B * Q)	0.00724	0.00708	0.00698
	(!D * !SET_B * Q)	0.00968	0.00951	0.00938

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT	
D	CLK	Q	Q_N
0	R	0	1
1	R	1	0
x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxbp_1	31.96800
sky130_fd_sc_hs__dfxbp_2	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	CLK	Q	Q_N
sky130_fd_sc_hs__dfxbp_1	0.00162	0.00271	0.18674	0.18054
sky130_fd_sc_hs__dfxbp_2	0.00157	0.00272	0.35497	0.37581

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.00046	0.00049
sky130_fd_sc_hs__dfxbp_2	0.00000	0.00055	0.00058

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RR)	0.93791	2.32639	10.42990
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	1.18541	2.39947	10.65480

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	1.10650	1.86619	4.82342
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	1.02489	1.74541	4.69143

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q_N (RR)	1.31878	2.67235	10.59290
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	1.26719	2.44117	10.76920

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q_N (RF)	1.08858	1.79032	4.66186
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	1.48237	2.17004	5.12137

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxbp_1	hold	CLK (R)	-0.04952	-0.12683	-0.61781
	setup	CLK (R)	0.35968	0.36587	1.08296
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.04535	-0.11272	-0.52677
	setup	CLK (R)	0.31207	0.32233	1.00663

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxbp_1	hold	CLK (R)	-0.12301	-0.42078	-3.98319
	setup	CLK (R)	1.26827	1.38755	5.00514
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.13486	-0.42777	-3.93778
	setup	CLK (R)	1.24051	1.36949	4.94057

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxbp_1	min_pulse_width	CLK ()	0.49483	1.45020	16.50020
	min_pulse_width	CLK ()	0.36573	1.45020	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.71172	1.45020	16.50020
	min_pulse_width	CLK ()	0.35540	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxbp_1	min_pulse_width	CLK ()	0.92605	1.65819	16.50020
	min_pulse_width	CLK ()	1.61612	1.82112	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.89710	1.67206	16.50020
	min_pulse_width	CLK ()	1.61860	1.83152	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00761	0.00754	0.00744
	CLK	0.00659	0.00652	0.00642
sky130_fd_sc_hs__dfxbp_2	CLK	0.00930	0.00934	0.00930
	CLK	0.00826	0.00831	0.00826

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00782	0.00782	0.00766
	CLK	0.00680	0.00680	0.00664
sky130_fd_sc_hs__dfxbp_2	CLK	0.00968	0.00979	0.00956
	CLK	0.00864	0.00875	0.00853

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00782	0.00782	0.00785
	CLK	0.00680	0.00680	0.00684
sky130_fd_sc_hs__dfxbp_2	CLK	0.00968	0.00980	0.00985
	CLK	0.00864	0.00876	0.00882

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00761	0.00753	0.00723
	CLK	0.00659	0.00651	0.00621
sky130_fd_sc_hs__dfxbp_2	CLK	0.00929	0.00934	0.00900
	CLK	0.00825	0.00831	0.00796

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00129	0.00123	0.00120
	CLK	-0.00004	-0.00010	-0.00013
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00466	0.00460	0.00452
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00334	0.00327	0.00319
sky130_fd_sc_hs__dfxbp_2	CLK	0.00120	0.00114	0.00111
	CLK	-0.00009	-0.00015	-0.00017
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00458	0.00451	0.00444
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00330	0.00323	0.00316

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00001	-0.00005	-0.00007
	CLK	0.00131	0.00127	0.00126
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00268	0.00261	0.00254
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00401	0.00394	0.00386
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00002	-0.00005	-0.00007
	CLK	0.00127	0.00123	0.00121
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00246	0.00240	0.00233
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00375	0.00369	0.00362

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	(D * Q * !Q_N)	0.00694	0.00676	0.00663
	(D * Q * !Q_N)	0.00489	0.00472	0.00459
	(!D * !Q * Q_N)	0.00710	0.00693	0.00680
	(!D * !Q * Q_N)	0.00506	0.00488	0.00475
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00698	0.00681	0.00667
	(D * Q * !Q_N)	0.00490	0.00473	0.00459
	(!D * !Q * Q_N)	0.00707	0.00690	0.00676
	(!D * !Q * Q_N)	0.00499	0.00482	0.00468

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	(D * Q * !Q_N)	0.00535	0.00518	0.00506
	(D * Q * !Q_N)	0.00740	0.00722	0.00711
	(D * !Q * Q_N)	0.00853	0.00834	0.00811
	(D * !Q * Q_N)	0.01059	0.01038	0.01016
	(!D * Q * !Q_N)	0.00876	0.00858	0.00861
	(!D * Q * !Q_N)	0.01082	0.01062	0.01065
	(!D * !Q * Q_N)	0.00515	0.00498	0.00486
	(!D * !Q * Q_N)	0.00720	0.00702	0.00691
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00533	0.00516	0.00504
	(D * Q * !Q_N)	0.00743	0.00725	0.00712
	(D * !Q * Q_N)	0.00859	0.00840	0.00820
	(D * !Q * Q_N)	0.01068	0.01048	0.01028
	(!D * Q * !Q_N)	0.00850	0.00833	0.00835
	(!D * Q * !Q_N)	0.01060	0.01042	0.01042
	(!D * !Q * Q_N)	0.00521	0.00504	0.00492
	(!D * !Q * Q_N)	0.00730	0.00713	0.00700

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
D	CLK	Q
0	R	0
1	R	1
x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxtp_1	27.17280
sky130_fd_sc_hs__dfxtp_2	28.77120
sky130_fd_sc_hs__dfxtp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	CLK	Q
sky130_fd_sc_hs__dfxtp_1	0.00158	0.00272	0.18732
sky130_fd_sc_hs__dfxtp_2	0.00162	0.00271	0.37561
sky130_fd_sc_hs__dfxtp_4	0.00161	0.00272	0.72193

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.00039	0.00042
sky130_fd_sc_hs__dfxtp_2	0.00000	0.00043	0.00046
sky130_fd_sc_hs__dfxtp_4	0.00000	0.00052	0.00054

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RR)**	0.85908	2.25192	10.39410
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.90561	2.10766	10.43020
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	1.08995	2.14977	10.55270

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	1.02384	1.75396	4.72452
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	1.09596	1.82322	4.82720
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	1.09098	1.79177	4.83390

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxtp_1	hold	CLK (R)	-0.04871	-0.12515	-0.60582
	setup	CLK (R)	0.36722	0.37149	1.08134
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.04991	-0.12333	-0.58589
	setup	CLK (R)	0.36555	0.37194	1.04418
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.04653	-0.11701	-0.55249
	setup	CLK (R)	0.34772	0.35318	1.02941

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxtp_1	hold	CLK (R)	-0.13005	-0.42886	-4.03298
	setup	CLK (R)	1.32107	1.45600	5.04001
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.12024	-0.41542	-3.92826
	setup	CLK (R)	1.23573	1.35008	4.94332
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.12853	-0.41365	-3.90726
	setup	CLK (R)	1.23932	1.35302	4.92934

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxtp_1	min_pulse_width	CLK ()	0.45093	1.45020	16.50020
	min_pulse_width	CLK ()	0.35540	1.45020	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.50257	1.45020	16.50020
	min_pulse_width	CLK ()	0.36056	1.45020	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.63942	1.45020	16.50020
	min_pulse_width	CLK ()	0.37605	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dfxtp_1	min_pulse_width	CLK ()	0.95757	1.68939	16.50020
	min_pulse_width	CLK ()	1.66591	1.86619	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.94535	1.67206	16.50020
	min_pulse_width	CLK ()	1.60950	1.82112	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.92905	1.67552	16.50020
	min_pulse_width	CLK ()	1.63164	1.83499	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01177	0.01160	0.01141
	CLK	0.00970	0.00953	0.00933
sky130_fd_sc_hs__dfxtp_2	CLK	0.01326	0.01315	0.01303
	CLK	0.01117	0.01107	0.01096
sky130_fd_sc_hs__dfxtp_4	CLK	0.01654	0.01662	0.01668
	CLK	0.01448	0.01456	0.01464

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01229	0.01219	0.01218
	CLK	0.01022	0.01012	0.01011
sky130_fd_sc_hs__dfxtp_2	CLK	0.01366	0.01369	0.01371
	CLK	0.01157	0.01161	0.01162
sky130_fd_sc_hs__dfxtp_4	CLK	0.01741	0.01768	0.01774
	CLK	0.01535	0.01562	0.01567

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00118	0.00112	0.00109
	CLK	-0.00011	-0.00018	-0.00020
	!CLK	0.00457	0.00451	0.00443
	!CLK	0.00328	0.00321	0.00314
sky130_fd_sc_hs__dfxtp_2	CLK	0.00126	0.00120	0.00117
	CLK	-0.00006	-0.00013	-0.00015
	!CLK	0.00453	0.00446	0.00439
	!CLK	0.00320	0.00313	0.00306
sky130_fd_sc_hs__dfxtp_4	CLK	0.00119	0.00113	0.00110
	CLK	-0.00013	-0.00020	-0.00022
	!CLK	0.00452	0.00446	0.00438
	!CLK	0.00321	0.00313	0.00306

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00020	0.00016	0.00014
	CLK	0.00149	0.00145	0.00143
	!CLK	0.00289	0.00283	0.00275
	!CLK	0.00419	0.00412	0.00404
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00004	-0.00008	-0.00010
	CLK	0.00129	0.00125	0.00123
	!CLK	0.00272	0.00266	0.00259
	!CLK	0.00406	0.00399	0.00391
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00001	-0.00005	-0.00006
	CLK	0.00131	0.00127	0.00126
	!CLK	0.00268	0.00262	0.00255
	!CLK	0.00400	0.00394	0.00386

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00697	0.00679	0.00666
	(D * Q)	0.00490	0.00472	0.00458
	(!D * !Q)	0.00725	0.00707	0.00693
	(!D * !Q)	0.00517	0.00499	0.00486
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00700	0.00681	0.00668
	(D * Q)	0.00491	0.00473	0.00459
	(!D * !Q)	0.00722	0.00704	0.00690
	(!D * !Q)	0.00513	0.00495	0.00481
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00695	0.00677	0.00663
	(D * Q)	0.00489	0.00471	0.00457
	(!D * !Q)	0.00717	0.00699	0.00685
	(!D * !Q)	0.00511	0.00493	0.00479

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00558	0.00541	0.00529
	(D * Q)	0.00766	0.00748	0.00736
	(D * !Q)	0.00871	0.00852	0.00830
	(D * !Q)	0.01080	0.01059	0.01037
	(!D * Q)	0.00898	0.00880	0.00882
	(!D * Q)	0.01107	0.01087	0.01089
	(!D * !Q)	0.00527	0.00510	0.00498
	(!D * !Q)	0.00735	0.00717	0.00706
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00546	0.00529	0.00517
	(D * Q)	0.00756	0.00738	0.00726
	(D * !Q)	0.00851	0.00832	0.00809
	(D * !Q)	0.01061	0.01040	0.01018
	(!D * Q)	0.00891	0.00872	0.00875
	(!D * Q)	0.01100	0.01081	0.01083
	(!D * !Q)	0.00521	0.00505	0.00492
	(!D * !Q)	0.00731	0.00713	0.00701
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00567	0.00550	0.00538
	(D * Q)	0.00774	0.00756	0.00744
	(D * !Q)	0.00874	0.00855	0.00834
	(D * !Q)	0.01082	0.01061	0.01040
	(!D * Q)	0.00911	0.00892	0.00896
	(!D * Q)	0.01118	0.01098	0.01101
	(!D * !Q)	0.00541	0.00524	0.00512
	(!D * !Q)	0.00748	0.00731	0.00718

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__diode_2	0.00000

Pin Capacitance Information
Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__diode_2	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DLCLKPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
GATE	CLK	GCLK
x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlclkp_1	22.37760
sky130_fd_sc_hs__dlclkp_2	25.57440
sky130_fd_sc_hs__dlclkp_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	GATE	CLK	GCLK
sky130_fd_sc_hs__dlclkp_1	0.00233	0.00400	0.18590
sky130_fd_sc_hs__dlclkp_2	0.00233	0.00431	0.37357
sky130_fd_sc_hs__dlclkp_4	0.00230	0.00450	0.74524

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.00028	0.00029
sky130_fd_sc_hs__dlclkp_2	0.00000	0.00032	0.00034
sky130_fd_sc_hs__dlclkp_4	0.00000	0.00040	0.00041

Delay Information

Delay(ns) to GCLK rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (RR)**	0.26883	1.61138	9.55935
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.25452	1.43234	9.70846
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.33120	1.42072	10.22150

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.39466	1.40249	6.99460
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.47908	1.50440	7.48361
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.71501	1.77039	8.20429

Constraint Information

Constraints(ns) for GATE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlclkp_1	hold	CLK (R)	-0.09094	-0.22065	-1.21958
	setup	CLK (R)	0.53672	0.51772	1.38568
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.08814	-0.22111	-1.20306
	setup	CLK (R)	0.57037	0.53366	1.36138
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.09003	-0.21835	-1.19696
	setup	CLK (R)	0.56518	0.51532	1.32844

Constraints(ns) for GATE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlclkp_1	hold	CLK (R)	-0.59797	-0.76491	-4.37614
	setup	CLK (R)	0.78431	0.99769	4.58053
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.59178	-0.75788	-4.35297
	setup	CLK (R)	0.78079	0.98103	4.50000
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.60451	-0.76781	-4.37015
	setup	CLK (R)	0.74298	0.89891	4.45128

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlclkp_1	min_pulse_width	CLK ()	0.18498	1.45020	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.20564	1.45020	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.28310	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlclkp_1	min_pulse_width	CLK ()	0.95487	1.54379	16.50020
	min_pulse_width	CLK ()	1.09134	1.50566	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	1.01899	1.57153	16.50020
	min_pulse_width	CLK ()	1.11692	1.55419	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	1.00698	1.56113	16.50020
	min_pulse_width	CLK ()	1.08609	1.77952	16.50020

Power Information

Internal switching power(pJ) to GCLK rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00848	0.00829	0.00817
	CLK	0.00520	0.00500	0.00488
sky130_fd_sc_hs__dlclkp_2	CLK	0.01019	0.01008	0.00999
	CLK	0.00666	0.00653	0.00645
sky130_fd_sc_hs__dlclkp_4	CLK	0.01327	0.01329	0.01330
	CLK	0.00964	0.00967	0.00968

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00967	0.00948	0.00932
	CLK	0.01302	0.01281	0.01264
sky130_fd_sc_hs__dlclkp_2	CLK	0.01132	0.01123	0.01122
	CLK	0.01492	0.01480	0.01465
sky130_fd_sc_hs__dlclkp_4	CLK	0.01468	0.01481	0.01494
	CLK	0.01829	0.01840	0.01839

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00080	0.00080	0.00080
	CLK	-0.00088	-0.00089	-0.00088
	(!CLK * !GCLK)	0.00594	0.00586	0.00573
	(!CLK * !GCLK)	0.00416	0.00406	0.00394
sky130_fd_sc_hs__dlclkp_2	CLK	0.00069	0.00070	0.00069
	CLK	-0.00099	-0.00100	-0.00099
	(!CLK * !GCLK)	0.00603	0.00593	0.00582
	(!CLK * !GCLK)	0.00425	0.00415	0.00404
sky130_fd_sc_hs__dlclkp_4	CLK	0.00067	0.00067	0.00067
	CLK	-0.00098	-0.00099	-0.00099
	(!CLK * !GCLK)	0.00589	0.00579	0.00567
	(!CLK * !GCLK)	0.00421	0.00411	0.00400

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00079	-0.00080	-0.00080
	CLK	0.00088	0.00089	0.00088
	(!CLK * !GCLK)	0.00391	0.00382	0.00374
	(!CLK * !GCLK)	0.00571	0.00562	0.00554
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00068	-0.00070	-0.00069
	CLK	0.00099	0.00100	0.00099
	(!CLK * !GCLK)	0.00410	0.00401	0.00393
	(!CLK * !GCLK)	0.00589	0.00580	0.00571
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00066	-0.00067	-0.00067
	CLK	0.00099	0.00100	0.00099
	(!CLK * !GCLK)	0.00441	0.00432	0.00424
	(!CLK * !GCLK)	0.00609	0.00600	0.00592

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00536	0.00517	0.00504
	(!GATE * !GCLK)	0.00223	0.00203	0.00191
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.00567	0.00545	0.00533
	(!GATE * !GCLK)	0.00229	0.00209	0.00196
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.00560	0.00540	0.00528
	(!GATE * !GCLK)	0.00212	0.00191	0.00180

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.00754	0.00733	0.00711
	(GATE * !GCLK)	0.01066	0.01045	0.01023
	(!GATE * !GCLK)	0.00258	0.00242	0.00233
	(!GATE * !GCLK)	0.00571	0.00555	0.00546
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.00777	0.00756	0.00733
	(GATE * !GCLK)	0.01116	0.01094	0.01071
	(!GATE * !GCLK)	0.00273	0.00255	0.00245
	(!GATE * !GCLK)	0.00608	0.00593	0.00584
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.00752	0.00732	0.00709
	(GATE * !GCLK)	0.01110	0.01088	0.01067
	(!GATE * !GCLK)	0.00254	0.00238	0.00229
	(!GATE * !GCLK)	0.00601	0.00586	0.00578

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	GATE_N	RESET_B	Q	Q_N
0	0	x	0	1
x	1	0	0	1
x	1	1	1	1
1	x	0	0	1
1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbn_1	28.77120
sky130_fd_sc_hs__dlrbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	GATE_N	RESET_B	Q	Q_N
sky130_fd_sc_hs__dlrbn_1	0.00211	0.00235	0.00255	0.18634	0.18851
sky130_fd_sc_hs__dlrbn_2	0.00212	0.00234	0.00265	0.35838	0.37599

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	0.00035	0.00038
sky130_fd_sc_hs__dlrbn_2	0.00000	0.00043	0.00045

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (RR)	1.36274	2.72779	10.75510
	GATE_N->Q (-R)	1.71349	3.40257	14.22560
	RESET_B->Q (RR)	0.32312	1.70832	9.96462
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	1.35507	2.56874	10.81380
	GATE_N->Q (-R)	1.71064	3.25060	14.29470
	RESET_B->Q (RR)	0.32789	1.58243	10.18670

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.96380	2.02547	7.44955
	GATE_N->Q (-F)	1.13759	2.19305	7.99127
	RESET_B->Q (FF)	0.54915	1.65885	7.83769
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	1.09024	2.16458	7.61443
	GATE_N->Q (-F)	1.26528	2.33354	8.15900
	RESET_B->Q (FF)	0.66465	1.78494	8.11541

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q_N (FR)	1.19799	2.86642	13.45720
	GATE_N->Q_N (-R)	1.37249	3.03240	13.99930
	RESET_B->Q_N (FR)	0.79378	2.48295	13.71380
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	1.38677	2.85708	13.77010
	GATE_N->Q_N (-R)	1.56222	3.02379	14.31740
	RESET_B->Q_N (FR)	0.97902	2.47087	14.17880

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q_N (RF)	1.51043	2.19230	5.03139
	GATE_N->Q_N (-F)	1.86152	2.86774	8.50735
	RESET_B->Q_N (RF)	0.47191	1.17172	4.20362
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	1.67241	2.35781	5.25756
	GATE_N->Q_N (-F)	2.02799	3.04071	8.73998
	RESET_B->Q_N (RF)	0.64467	1.37193	4.61501

Constraint Information

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlrbn_1	**min_pulse_width**	**RESET_B ()**	0.62862	1.64433	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.80282	1.79686	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00627	0.00626	0.00624
	D	0.00536	0.00535	0.00534
	GATE_N	0.00664	0.00662	0.00659
	GATE_N	0.00750	0.00747	0.00739
	RESET_B	0.00416	0.00416	0.00412
	RESET_B	0.00311	0.00310	0.00314
sky130_fd_sc_hs__dlrbn_2	D	0.00752	0.00762	0.00765
	D	0.00663	0.00673	0.00676
	GATE_N	0.00791	0.00800	0.00802
	GATE_N	0.00876	0.00885	0.00882
	RESET_B	0.00555	0.00561	0.00563
	RESET_B	0.00447	0.00457	0.00455

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00486	0.00489	0.00468
	D	0.00577	0.00580	0.00556
	GATE_N	0.00609	0.00609	0.00581
	GATE_N	0.00707	0.00706	0.00678
	RESET_B	0.00432	0.00432	0.00406
	RESET_B	0.00531	0.00530	0.00503
sky130_fd_sc_hs__dlrbn_2	D	0.00626	0.00643	0.00680
	D	0.00716	0.00731	0.00706
	GATE_N	0.00748	0.00761	0.00739
	GATE_N	0.00844	0.00857	0.00828
	RESET_B	0.00568	0.00579	0.00556
	RESET_B	0.00670	0.00681	0.00650

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00487	0.00490	0.00506
	D	0.00578	0.00580	0.00576
	GATE_N	0.00610	0.00610	0.00601
	GATE_N	0.00708	0.00708	0.00698
	RESET_B	0.00432	0.00432	0.00442
	RESET_B	0.00531	0.00531	0.00522
sky130_fd_sc_hs__dlrbn_2	D	0.00627	0.00644	0.00689
	D	0.00717	0.00733	0.00733
	GATE_N	0.00749	0.00762	0.00786
	GATE_N	0.00845	0.00858	0.00855
	RESET_B	0.00569	0.00580	0.00576
	RESET_B	0.00671	0.00682	0.00677

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00626	0.00625	0.00603
	D	0.00536	0.00535	0.00513
	GATE_N	0.00664	0.00661	0.00635
	GATE_N	0.00749	0.00746	0.00720
	RESET_B	0.00416	0.00414	0.00390
	RESET_B	0.00311	0.00309	0.00285
sky130_fd_sc_hs__dlrbn_2	D	0.00752	0.00762	0.00737
	D	0.00662	0.00673	0.00647
	GATE_N	0.00790	0.00799	0.00770
	GATE_N	0.00875	0.00884	0.00854
	RESET_B	0.00555	0.00564	0.00536
	RESET_B	0.00447	0.00457	0.00428

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00266	0.00257	0.00252
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00098	0.00089	0.00084
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00495	0.00481	0.00475
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00338	0.00324	0.00317
sky130_fd_sc_hs__dlrbn_2	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00264	0.00255	0.00249
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00097	0.00088	0.00083
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00465	0.00451	0.00444
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00308	0.00294	0.00288

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00083	0.00076	0.00073
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00252	0.00244	0.00241
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00345	0.00335	0.00326
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00504	0.00492	0.00484
sky130_fd_sc_hs__dlrbn_2	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00078	0.00071	0.00068
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00247	0.00239	0.00236
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00357	0.00346	0.00338
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00514	0.00502	0.00494

Passive power(pJ) for GATE_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(D * RESET_B * Q * !Q_N)	0.00499	0.00477	0.00465
	(D * RESET_B * Q * !Q_N)	0.00316	0.00294	0.00283
	(D * !RESET_B * !Q * Q_N)	0.00761	0.00742	0.00731
	(D * !RESET_B * !Q * Q_N)	0.00568	0.00549	0.00538
	(!D * !Q * Q_N)	0.00532	0.00512	0.00501
	(!D * !Q * Q_N)	0.00349	0.00329	0.00318
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00499	0.00477	0.00465
	(D * RESET_B * Q * !Q_N)	0.00317	0.00295	0.00284
	(D * !RESET_B * !Q * Q_N)	0.00770	0.00752	0.00740
	(D * !RESET_B * !Q * Q_N)	0.00578	0.00560	0.00548
	(!D * !Q * Q_N)	0.00526	0.00506	0.00495
	(!D * !Q * Q_N)	0.00345	0.00325	0.00313

Passive power(pJ) for GATE_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(D * RESET_B * Q * !Q_N)	0.00394	0.00378	0.00368
	(D * RESET_B * Q * !Q_N)	0.00577	0.00561	0.00551
	(D * !RESET_B * !Q * Q_N)	0.00573	0.00555	0.00539
	(D * !RESET_B * !Q * Q_N)	0.00766	0.00749	0.00732
	(!D * !Q * Q_N)	0.00368	0.00351	0.00341
	(!D * !Q * Q_N)	0.00551	0.00534	0.00524
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00388	0.00372	0.00363
	(D * RESET_B * Q * !Q_N)	0.00569	0.00553	0.00543
	(D * !RESET_B * !Q * Q_N)	0.00544	0.00527	0.00510
	(D * !RESET_B * !Q * Q_N)	0.00736	0.00719	0.00702
	(!D * !Q * Q_N)	0.00367	0.00350	0.00341
	(!D * !Q * Q_N)	0.00549	0.00532	0.00522

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00078	0.00079	0.00079
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00100	-0.00101	-0.00100
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00084	0.00085	0.00084
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00101	-0.00102	-0.00101

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00078	-0.00079	-0.00079
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00100	0.00102	0.00100
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00083	-0.00085	-0.00084
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00101	0.00103	0.00102

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	GATE	RESET_B	Q	Q_N
x	x	0	0	1
x	0	1	1	1
0	1	1	0	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbp_1	27.17280
sky130_fd_sc_hs__dlrbp_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	GATE	RESET_B	Q	Q_N
sky130_fd_sc_hs__dlrbp_1	0.00194	0.00224	0.00264	0.18652	0.18497
sky130_fd_sc_hs__dlrbp_2	0.00195	0.00224	0.00265	0.37459	0.37812

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	0.00035	0.00038
sky130_fd_sc_hs__dlrbp_2	0.00000	0.00043	0.00045

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (RR)	1.30756	2.66463	10.66220
	GATE->Q (-R)	1.13228	2.46559	10.40620
	RESET_B->Q (RR)	0.32823	1.71600	9.98670
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	1.32419	2.50330	10.71340
	GATE->Q (-R)	1.13777	2.29127	10.43000
	RESET_B->Q (RR)	0.32960	1.55856	10.16400

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.95538	2.01872	7.38719
	GATE->Q (-F)	0.99442	1.70895	4.47773
	RESET_B->Q (FF)	0.56060	1.67637	7.86532
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	1.08589	2.16352	7.62717
	GATE->Q (-F)	1.12226	1.84972	4.69856
	RESET_B->Q (FF)	0.65618	1.75223	8.15783

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q_N (FR)	1.19839	2.86576	13.35840
	GATE->Q_N (-R)	1.23770	2.55588	10.44850
	RESET_B->Q_N (FR)	0.81535	2.50503	13.71050
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	1.38498	2.83476	13.59890
	GATE->Q_N (-R)	1.42191	2.52084	10.67470
	RESET_B->Q_N (FR)	0.96464	2.44039	14.04200

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q_N (RF)	1.45889	2.12990	4.90924
	GATE->Q_N (-F)	1.28335	1.93066	4.65462
	RESET_B->Q_N (RF)	0.48026	1.18068	4.21088
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	1.61798	2.27585	5.12524
	GATE->Q_N (-F)	1.43186	2.06336	4.84411
	RESET_B->Q_N (RF)	0.62284	1.33124	4.56327

Constraint Information

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlrbp_1	**min_pulse_width**	**RESET_B ()**	0.63686	1.65126	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.78566	1.78646	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00591	0.00590	0.00587
	D	0.00506	0.00506	0.00503
	GATE	0.00695	0.00688	0.00681
	GATE	0.00599	0.00592	0.00585
	RESET_B	0.00419	0.00417	0.00412
	RESET_B	0.00311	0.00308	0.00305
sky130_fd_sc_hs__dlrbp_2	D	0.00740	0.00750	0.00752
	D	0.00655	0.00666	0.00668
	GATE	0.00839	0.00844	0.00844
	GATE	0.00744	0.00749	0.00749
	RESET_B	0.00563	0.00569	0.00570
	RESET_B	0.00455	0.00464	0.00461

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00507	0.00510	0.00486
	D	0.00591	0.00595	0.00569
	GATE	0.00707	0.00708	0.00686
	GATE	0.00626	0.00627	0.00606
	RESET_B	0.00439	0.00439	0.00429
	RESET_B	0.00541	0.00541	0.00513
sky130_fd_sc_hs__dlrbp_2	D	0.00648	0.00664	0.00667
	D	0.00732	0.00748	0.00721
	GATE	0.00847	0.00861	0.00835
	GATE	0.00765	0.00778	0.00754
	RESET_B	0.00578	0.00589	0.00562
	RESET_B	0.00680	0.00691	0.00659

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00508	0.00511	0.00508
	D	0.00592	0.00595	0.00591
	GATE	0.00708	0.00709	0.00709
	GATE	0.00627	0.00628	0.00628
	RESET_B	0.00439	0.00439	0.00462
	RESET_B	0.00542	0.00541	0.00533
sky130_fd_sc_hs__dlrbp_2	D	0.00649	0.00664	0.00715
	D	0.00733	0.00748	0.00749
	GATE	0.00848	0.00861	0.00865
	GATE	0.00766	0.00779	0.00785
	RESET_B	0.00579	0.00590	0.00590
	RESET_B	0.00681	0.00692	0.00686

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00590	0.00590	0.00568
	D	0.00506	0.00505	0.00484
	GATE	0.00695	0.00687	0.00661
	GATE	0.00599	0.00591	0.00566
	RESET_B	0.00419	0.00416	0.00393
	RESET_B	0.00311	0.00308	0.00285
sky130_fd_sc_hs__dlrbp_2	D	0.00739	0.00750	0.00722
	D	0.00654	0.00665	0.00638
	GATE	0.00839	0.00843	0.00812
	GATE	0.00743	0.00748	0.00717
	RESET_B	0.00563	0.00573	0.00541
	RESET_B	0.00455	0.00465	0.00432

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(GATE * !RESET_B * !Q * Q_N)	0.00420	0.00407	0.00400
	(GATE * !RESET_B * !Q * Q_N)	0.00278	0.00264	0.00257
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00256	0.00247	0.00242
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00101	0.00093	0.00088
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00425	0.00411	0.00405
	(GATE * !RESET_B * !Q * Q_N)	0.00281	0.00268	0.00262
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00256	0.00248	0.00242
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00100	0.00092	0.00087

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(GATE * !RESET_B * !Q * Q_N)	0.00364	0.00354	0.00346
	(GATE * !RESET_B * !Q * Q_N)	0.00508	0.00497	0.00490
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00064	0.00057	0.00055
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00218	0.00211	0.00209
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00369	0.00358	0.00350
	(GATE * !RESET_B * !Q * Q_N)	0.00512	0.00501	0.00494
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00070	0.00062	0.00060
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00224	0.00218	0.00215

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(D * RESET_B * Q * !Q_N)	0.00513	0.00493	0.00482
	(D * RESET_B * Q * !Q_N)	0.00336	0.00316	0.00306
	(D * !RESET_B * !Q * Q_N)	0.00613	0.00586	0.00571
	(D * !RESET_B * !Q * Q_N)	0.00447	0.00420	0.00405
	(!D * !Q * Q_N)	0.00522	0.00503	0.00492
	(!D * !Q * Q_N)	0.00345	0.00326	0.00315
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00513	0.00492	0.00482
	(D * RESET_B * Q * !Q_N)	0.00335	0.00315	0.00304
	(D * !RESET_B * !Q * Q_N)	0.00610	0.00584	0.00569
	(D * !RESET_B * !Q * Q_N)	0.00445	0.00418	0.00403
	(!D * !Q * Q_N)	0.00519	0.00500	0.00490
	(!D * !Q * Q_N)	0.00342	0.00323	0.00312

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(D * RESET_B * Q * !Q_N)	0.00326	0.00311	0.00302
	(D * RESET_B * Q * !Q_N)	0.00502	0.00488	0.00479
	(D * !RESET_B * !Q * Q_N)	0.00542	0.00523	0.00507
	(D * !RESET_B * !Q * Q_N)	0.00708	0.00688	0.00673
	(!D * !Q * Q_N)	0.00325	0.00309	0.00301
	(!D * !Q * Q_N)	0.00502	0.00486	0.00477
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00323	0.00308	0.00299
	(D * RESET_B * Q * !Q_N)	0.00500	0.00486	0.00477
	(D * !RESET_B * !Q * Q_N)	0.00537	0.00518	0.00502
	(D * !RESET_B * !Q * Q_N)	0.00702	0.00683	0.00668
	(!D * !Q * Q_N)	0.00324	0.00308	0.00300
	(!D * !Q * Q_N)	0.00502	0.00486	0.00478

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00080	0.00081	0.00080
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00103	-0.00103	-0.00103
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00081	0.00081	0.00081
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00102	-0.00102	-0.00103

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00079	-0.00081	-0.00080
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00103	0.00104	0.00103
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00080	-0.00081	-0.00081
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00103	0.00104	0.00103

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	GATE_N	RESET_B	Q
0	0	x	0
x	1	0	0
x	1	1	1
1	x	0	0
1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtn_1	23.97600
sky130_fd_sc_hs__dlrtn_2	27.17280
sky130_fd_sc_hs__dlrtn_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	GATE_N	RESET_B	Q
sky130_fd_sc_hs__dlrtn_1	0.00193	0.00227	0.00253	0.18847
sky130_fd_sc_hs__dlrtn_2	0.00196	0.00225	0.00260	0.37375
sky130_fd_sc_hs__dlrtn_4	0.00195	0.00226	0.00419	0.73189

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	0.00028	0.00031
sky130_fd_sc_hs__dlrtn_2	0.00000	0.00031	0.00034
sky130_fd_sc_hs__dlrtn_4	0.00000	0.00043	0.00046

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (RR)	1.28401	2.64293	10.64310
	GATE_N->Q (-R)	1.58462	3.27172	14.00960
	RESET_B->Q (RR)	0.29436	1.65544	9.77136
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	1.29768	2.47748	10.70720
	GATE_N->Q (-R)	1.59778	3.10605	14.07190
	RESET_B->Q (RR)	0.29320	1.49773	10.00300
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	1.49638	2.53717	10.94730
	GATE_N->Q (-R)	1.80074	3.17179	14.33630
	RESET_B->Q (RR)	0.31351	1.37763	10.06990

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.86151	1.89360	7.28326
	GATE_N->Q (-F)	0.99972	2.02555	7.74657
	RESET_B->Q (FF)	0.46264	1.53137	7.43906
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.96426	1.99849	7.42226
	GATE_N->Q (-F)	1.10095	2.13049	7.88508
	RESET_B->Q (FF)	0.56235	1.63993	7.85998
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.94421	1.95646	7.45790
	GATE_N->Q (-F)	1.09608	2.10201	7.95856
	RESET_B->Q (FF)	0.54158	1.55327	7.54704

Constraint Information

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlrtn_1	**min_pulse_width**	**RESET_B ()**	0.51968	1.52993	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.67582	1.68592	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.68400	1.65819	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.00862	0.00856	0.00852
	D	0.00695	0.00690	0.00686
	GATE_N	0.00927	0.00918	0.00904
	GATE_N	0.01092	0.01082	0.01068
	RESET_B	0.00518	0.00514	0.00509
	RESET_B	0.00312	0.00307	0.00303
sky130_fd_sc_hs__dlrtn_2	D	0.00989	0.00994	0.01000
	D	0.00824	0.00829	0.00840
	GATE_N	0.01058	0.01058	0.01057
	GATE_N	0.01223	0.01223	0.01221
	RESET_B	0.00642	0.00647	0.00646
	RESET_B	0.00430	0.00435	0.00474
sky130_fd_sc_hs__dlrtn_4	D	0.01417	0.01440	0.01480
	D	0.01240	0.01263	0.01309
	GATE_N	0.01485	0.01509	0.01539
	GATE_N	0.01639	0.01662	0.01696
	RESET_B	0.01126	0.01142	0.01153
	RESET_B	0.00783	0.00799	0.00811

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.00703	0.00700	0.00702
	D	0.00870	0.00866	0.00852
	GATE_N	0.00877	0.00866	0.00872
	GATE_N	0.01070	0.01058	0.01037
	RESET_B	0.00558	0.00550	0.00534
	RESET_B	0.00752	0.00744	0.00727
sky130_fd_sc_hs__dlrtn_2	D	0.00846	0.00859	0.00855
	D	0.01012	0.01023	0.01009
	GATE_N	0.01027	0.01032	0.01020
	GATE_N	0.01214	0.01219	0.01197
	RESET_B	0.00699	0.00704	0.00690
	RESET_B	0.00900	0.00904	0.00888
sky130_fd_sc_hs__dlrtn_4	D	0.01214	0.01251	0.01294
	D	0.01391	0.01428	0.01414
	GATE_N	0.01397	0.01427	0.01408
	GATE_N	0.01598	0.01627	0.01604
	RESET_B	0.01092	0.01100	0.01289
	RESET_B	0.01418	0.01428	0.01410

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00246	0.00238	0.00233
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00094	0.00086	0.00081
	(!GATE_N * !RESET_B * !Q)	0.00411	0.00399	0.00392
	(!GATE_N * !RESET_B * !Q)	0.00270	0.00257	0.00251
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00249	0.00241	0.00235
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00095	0.00086	0.00082
	(!GATE_N * !RESET_B * !Q)	0.00414	0.00401	0.00394
	(!GATE_N * !RESET_B * !Q)	0.00271	0.00258	0.00251
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00248	0.00239	0.00235
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00094	0.00086	0.00081
	(!GATE_N * !RESET_B * !Q)	0.00440	0.00427	0.00419
	(!GATE_N * !RESET_B * !Q)	0.00299	0.00286	0.00277

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00086	0.00080	0.00077
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00239	0.00232	0.00229
	(!GATE_N * !RESET_B * !Q)	0.00389	0.00379	0.00371
	(!GATE_N * !RESET_B * !Q)	0.00531	0.00520	0.00513
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00085	0.00078	0.00075
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00240	0.00232	0.00230
	(!GATE_N * !RESET_B * !Q)	0.00391	0.00381	0.00372
	(!GATE_N * !RESET_B * !Q)	0.00535	0.00523	0.00516
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00082	0.00075	0.00073
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00236	0.00229	0.00226
	(!GATE_N * !RESET_B * !Q)	0.00448	0.00438	0.00430
	(!GATE_N * !RESET_B * !Q)	0.00591	0.00580	0.00573

Passive power(pJ) for GATE_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * RESET_B * Q)	0.00488	0.00468	0.00456
	(D * RESET_B * Q)	0.00309	0.00289	0.00277
	(D * !RESET_B * !Q)	0.00751	0.00735	0.00723
	(D * !RESET_B * !Q)	0.00562	0.00546	0.00534
	(!D * !Q)	0.00488	0.00469	0.00458
	(!D * !Q)	0.00309	0.00290	0.00280
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00486	0.00466	0.00454
	(D * RESET_B * Q)	0.00309	0.00289	0.00277
	(D * !RESET_B * !Q)	0.00752	0.00736	0.00724
	(D * !RESET_B * !Q)	0.00564	0.00549	0.00536
	(!D * !Q)	0.00485	0.00466	0.00455
	(!D * !Q)	0.00309	0.00290	0.00279
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00490	0.00469	0.00458
	(D * RESET_B * Q)	0.00312	0.00292	0.00280
	(D * !RESET_B * !Q)	0.00812	0.00796	0.00784
	(D * !RESET_B * !Q)	0.00623	0.00608	0.00596
	(!D * !Q)	0.00486	0.00467	0.00456
	(!D * !Q)	0.00309	0.00290	0.00279

Passive power(pJ) for GATE_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * RESET_B * Q)	0.00329	0.00313	0.00304
	(D * RESET_B * Q)	0.00507	0.00492	0.00482
	(D * !RESET_B * !Q)	0.00478	0.00461	0.00445
	(D * !RESET_B * !Q)	0.00666	0.00650	0.00634
	(!D * !Q)	0.00335	0.00319	0.00309
	(!D * !Q)	0.00513	0.00497	0.00488
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00333	0.00318	0.00309
	(D * RESET_B * Q)	0.00511	0.00494	0.00486
	(D * !RESET_B * !Q)	0.00483	0.00467	0.00451
	(D * !RESET_B * !Q)	0.00670	0.00654	0.00639
	(!D * !Q)	0.00341	0.00325	0.00316
	(!D * !Q)	0.00517	0.00501	0.00492
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00336	0.00320	0.00311
	(D * RESET_B * Q)	0.00514	0.00497	0.00488
	(D * !RESET_B * !Q)	0.00514	0.00497	0.00480
	(D * !RESET_B * !Q)	0.00703	0.00686	0.00669
	(!D * !Q)	0.00346	0.00330	0.00320
	(!D * !Q)	0.00522	0.00507	0.00497

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * GATE_N * !Q) + (!D * !Q)	0.00080	0.00080	0.00080
	(D * GATE_N * !Q) + (!D * !Q)	-0.00095	-0.00095	-0.00095
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00082	0.00083	0.00082
	(D * GATE_N * !Q) + (!D * !Q)	-0.00101	-0.00102	-0.00101
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00134	0.00137	0.00136
	(D * GATE_N * !Q) + (!D * !Q)	-0.00153	-0.00155	-0.00154

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * GATE_N * !Q) + (!D * !Q)	-0.00079	-0.00080	-0.00080
	(D * GATE_N * !Q) + (!D * !Q)	0.00095	0.00096	0.00095
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00081	-0.00083	-0.00082
	(D * GATE_N * !Q) + (!D * !Q)	0.00101	0.00103	0.00101
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00134	-0.00137	-0.00136
	(D * GATE_N * !Q) + (!D * !Q)	0.00155	0.00155	0.00154

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	GATE	RESET_B	Q
x	x	0	0
x	0	1	1
0	1	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtp_1	22.37760
sky130_fd_sc_hs__dlrtp_2	23.97600
sky130_fd_sc_hs__dlrtp_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	GATE	RESET_B	Q
sky130_fd_sc_hs__dlrtp_1	0.00210	0.00229	0.00258	0.18848
sky130_fd_sc_hs__dlrtp_2	0.00207	0.00224	0.00266	0.37451
sky130_fd_sc_hs__dlrtp_4	0.00205	0.00223	0.00397	0.73383

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtp_1	0.00000	0.00028	0.00031
sky130_fd_sc_hs__dlrtp_2	0.00000	0.00031	0.00034
sky130_fd_sc_hs__dlrtp_4	0.00000	0.00043	0.00046

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (RR)	1.27039	2.62450	10.62170
	GATE->Q (-R)	1.09841	2.42776	10.36440
	RESET_B->Q (RR)	0.29419	1.65600	9.76978
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	1.29926	2.47627	10.69870
	GATE->Q (-R)	1.12766	2.27480	10.41660
	RESET_B->Q (RR)	0.29206	1.49637	9.97217
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	1.47792	2.51771	10.93180
	GATE->Q (-R)	1.31923	2.33131	10.67280
	RESET_B->Q (RR)	0.31279	1.37632	10.07140

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.87916	1.91192	7.32705
	GATE->Q (-F)	0.91517	1.60370	4.41607
	RESET_B->Q (FF)	0.46036	1.52942	7.44600
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.99144	2.02563	7.47984
	GATE->Q (-F)	1.01876	1.70564	4.53206
	RESET_B->Q (FF)	0.55271	1.62852	7.85857
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.96778	1.97772	7.48528
	GATE->Q (-F)	0.98703	1.65289	4.53378
	RESET_B->Q (FF)	0.53750	1.53917	7.54850

Constraint Information

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__dlrtp_1	**min_pulse_width**	**RESET_B ()**	0.51325	1.52646	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.66190	1.67206	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.68400	1.65819	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.00868	0.00859	0.00851
	D	0.00682	0.00673	0.00666
	GATE	0.01085	0.01065	0.01049
	GATE	0.00889	0.00869	0.00853
	RESET_B	0.00499	0.00493	0.00487
	RESET_B	0.00287	0.00281	0.00276
sky130_fd_sc_hs__dlrtp_2	D	0.01018	0.01023	0.01025
	D	0.00832	0.00837	0.00844
	GATE	0.01220	0.01212	0.01207
	GATE	0.01025	0.01018	0.01016
	RESET_B	0.00645	0.00649	0.00648
	RESET_B	0.00428	0.00431	0.00430
sky130_fd_sc_hs__dlrtp_4	D	0.01430	0.01456	0.01492
	D	0.01240	0.01267	0.01309
	GATE	0.01634	0.01647	0.01676
	GATE	0.01435	0.01448	0.01484
	RESET_B	0.01113	0.01129	0.01142
	RESET_B	0.00788	0.00805	0.00817

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.00683	0.00679	0.00668
	D	0.00868	0.00864	0.00849
	GATE	0.01103	0.01096	0.01092
	GATE	0.00934	0.00927	0.00923
	RESET_B	0.00556	0.00549	0.00537
	RESET_B	0.00753	0.00745	0.00728
sky130_fd_sc_hs__dlrtp_2	D	0.00814	0.00826	0.00840
	D	0.00999	0.01011	0.00997
	GATE	0.01216	0.01224	0.01220
	GATE	0.01052	0.01060	0.01056
	RESET_B	0.00683	0.00688	0.00758
	RESET_B	0.00889	0.00893	0.00878
sky130_fd_sc_hs__dlrtp_4	D	0.01199	0.01236	0.01285
	D	0.01388	0.01425	0.01411
	GATE	0.01590	0.01623	0.01623
	GATE	0.01430	0.01463	0.01463
	RESET_B	0.01093	0.01103	0.01296
	RESET_B	0.01403	0.01415	0.01398

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(GATE * !RESET_B * !Q)	0.00441	0.00427	0.00420
	(GATE * !RESET_B * !Q)	0.00281	0.00267	0.00260
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00271	0.00262	0.00256
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00099	0.00089	0.00084
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00447	0.00433	0.00426
	(GATE * !RESET_B * !Q)	0.00288	0.00274	0.00267
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00272	0.00264	0.00258
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00102	0.00092	0.00087
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00465	0.00450	0.00442
	(GATE * !RESET_B * !Q)	0.00306	0.00292	0.00283
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00271	0.00262	0.00256
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00101	0.00091	0.00086

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(GATE * !RESET_B * !Q)	0.00359	0.00347	0.00339
	(GATE * !RESET_B * !Q)	0.00518	0.00506	0.00499
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00063	0.00055	0.00052
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00235	0.00227	0.00224
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00368	0.00357	0.00348
	(GATE * !RESET_B * !Q)	0.00527	0.00516	0.00508
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00067	0.00059	0.00056
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00237	0.00229	0.00226
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00422	0.00410	0.00403
	(GATE * !RESET_B * !Q)	0.00581	0.00570	0.00562
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00064	0.00055	0.00053
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00233	0.00226	0.00223

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(D * RESET_B * Q)	0.00538	0.00519	0.00508
	(D * RESET_B * Q)	0.00356	0.00336	0.00326
	(D * !RESET_B * !Q)	0.00642	0.00616	0.00601
	(D * !RESET_B * !Q)	0.00473	0.00445	0.00430
	(!D * !Q)	0.00540	0.00522	0.00511
	(!D * !Q)	0.00358	0.00339	0.00329
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00524	0.00504	0.00494
	(D * RESET_B * Q)	0.00345	0.00325	0.00314
	(D * !RESET_B * !Q)	0.00632	0.00604	0.00589
	(D * !RESET_B * !Q)	0.00464	0.00437	0.00421
	(!D * !Q)	0.00524	0.00506	0.00495
	(!D * !Q)	0.00345	0.00326	0.00315
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00516	0.00496	0.00486
	(D * RESET_B * Q)	0.00336	0.00317	0.00307
	(D * !RESET_B * !Q)	0.00648	0.00620	0.00604
	(D * !RESET_B * !Q)	0.00480	0.00452	0.00436
	(!D * !Q)	0.00519	0.00501	0.00491
	(!D * !Q)	0.00340	0.00322	0.00312

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(D * RESET_B * Q)	0.00322	0.00308	0.00299
	(D * RESET_B * Q)	0.00505	0.00490	0.00482
	(D * !RESET_B * !Q)	0.00542	0.00523	0.00507
	(D * !RESET_B * !Q)	0.00713	0.00693	0.00678
	(!D * !Q)	0.00330	0.00314	0.00306
	(!D * !Q)	0.00513	0.00497	0.00488
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00325	0.00311	0.00302
	(D * RESET_B * Q)	0.00504	0.00490	0.00482
	(D * !RESET_B * !Q)	0.00552	0.00533	0.00517
	(D * !RESET_B * !Q)	0.00721	0.00701	0.00685
	(!D * !Q)	0.00334	0.00318	0.00310
	(!D * !Q)	0.00513	0.00497	0.00489
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00320	0.00306	0.00297
	(D * RESET_B * Q)	0.00500	0.00485	0.00477
	(D * !RESET_B * !Q)	0.00606	0.00587	0.00570
	(D * !RESET_B * !Q)	0.00776	0.00755	0.00739
	(!D * !Q)	0.00326	0.00309	0.00301
	(!D * !Q)	0.00504	0.00489	0.00480

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(D * !GATE * !Q) + (!D * !Q)	0.00079	0.00080	0.00080
	(D * !GATE * !Q) + (!D * !Q)	-0.00098	-0.00098	-0.00098
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00080	0.00081	0.00080
	(D * !GATE * !Q) + (!D * !Q)	-0.00103	-0.00104	-0.00103
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00133	0.00133	0.00132
	(D * !GATE * !Q) + (!D * !Q)	-0.00147	-0.00147	-0.00146

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	(D * !GATE * !Q) + (!D * !Q)	-0.00079	-0.00080	-0.00080
	(D * !GATE * !Q) + (!D * !Q)	0.00098	0.00099	0.00098
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00080	-0.00081	-0.00080
	(D * !GATE * !Q) + (!D * !Q)	0.00104	0.00105	0.00104
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00131	-0.00133	-0.00132
	(D * !GATE * !Q) + (!D * !Q)	0.00147	0.00147	0.00146

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT	
D	GATE_N	Q	Q_N
0	0	0	1
x	1	1	1
1	0	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbn_1	27.17280
sky130_fd_sc_hs__dlxbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE_N	Q	Q_N
sky130_fd_sc_hs__dlxbn_1	0.00209	0.00229	0.18619	0.18873
sky130_fd_sc_hs__dlxbn_2	0.00196	0.00227	0.35953	0.37749

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	0.00033	0.00034
sky130_fd_sc_hs__dlxbn_2	0.00000	0.00041	0.00042

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (RR)	1.29476	2.67204	10.69010
	GATE_N->Q (-R)	1.59716	3.30255	14.06170
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	1.29636	2.50578	10.76130
	GATE_N->Q (-R)	1.59453	3.13340	14.13050

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.94058	1.99891	7.42332
	GATE_N->Q (-F)	1.08114	2.13321	7.89421
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	1.03599	2.10301	7.54016
	GATE_N->Q (-F)	1.17832	2.23842	8.01338

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q_N (FR)	1.17920	2.87959	13.70560
	GATE_N->Q_N (-R)	1.32002	3.01301	14.17910
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	1.33137	2.79656	13.73260
	GATE_N->Q_N (-R)	1.47424	2.93168	14.20800

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q_N (RF)	1.44560	2.11950	4.95236
	GATE_N->Q_N (-F)	1.74710	2.75014	8.32779
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	1.60529	2.29191	5.18131
	GATE_N->Q_N (-F)	1.90361	2.92035	8.55526

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00588	0.00592	0.00593
	D	0.00506	0.00510	0.00511
	GATE_N	0.00619	0.00620	0.00617
	GATE_N	0.00709	0.00711	0.00707
sky130_fd_sc_hs__dlxbn_2	D	0.00730	0.00744	0.00752
	D	0.00652	0.00667	0.00675
	GATE_N	0.00760	0.00774	0.00778
	GATE_N	0.00850	0.00864	0.00867

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00513	0.00518	0.00497
	D	0.00596	0.00600	0.00579
	GATE_N	0.00611	0.00613	0.00594
	GATE_N	0.00702	0.00703	0.00677
sky130_fd_sc_hs__dlxbn_2	D	0.00648	0.00666	0.00665
	D	0.00726	0.00743	0.00719
	GATE_N	0.00745	0.00758	0.00729
	GATE_N	0.00834	0.00848	0.00819

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00514	0.00519	0.00540
	D	0.00597	0.00601	0.00598
	GATE_N	0.00612	0.00614	0.00624
	GATE_N	0.00703	0.00704	0.00697
sky130_fd_sc_hs__dlxbn_2	D	0.00649	0.00666	0.00717
	D	0.00727	0.00744	0.00747
	GATE_N	0.00746	0.00759	0.00768
	GATE_N	0.00835	0.00849	0.00847

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00587	0.00591	0.00571
	D	0.00505	0.00509	0.00489
	GATE_N	0.00618	0.00620	0.00596
	GATE_N	0.00709	0.00710	0.00686
sky130_fd_sc_hs__dlxbn_2	D	0.00730	0.00744	0.00719
	D	0.00651	0.00666	0.00641
	GATE_N	0.00760	0.00774	0.00745
	GATE_N	0.00850	0.00863	0.00835

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00262	0.00254	0.00248
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00099	0.00090	0.00085
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00256	0.00248	0.00243
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00100	0.00092	0.00087

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00075	0.00066	0.00064
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00238	0.00230	0.00227
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00077	0.00070	0.00067
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00232	0.00226	0.00223

Passive power(pJ) for GATE_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	(D * Q * !Q_N)	0.00505	0.00485	0.00474
	(D * Q * !Q_N)	0.00324	0.00304	0.00293
	(!D * !Q * Q_N)	0.00501	0.00482	0.00471
	(!D * !Q * Q_N)	0.00321	0.00301	0.00290
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00503	0.00483	0.00472
	(D * Q * !Q_N)	0.00323	0.00303	0.00291
	(!D * !Q * Q_N)	0.00499	0.00480	0.00469
	(!D * !Q * Q_N)	0.00319	0.00300	0.00289

Passive power(pJ) for GATE_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	(D * Q * !Q_N)	0.00336	0.00320	0.00310
	(D * Q * !Q_N)	0.00516	0.00500	0.00491
	(!D * !Q * Q_N)	0.00346	0.00330	0.00320
	(!D * !Q * Q_N)	0.00527	0.00511	0.00501
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00334	0.00318	0.00308
	(D * Q * !Q_N)	0.00513	0.00497	0.00488
	(!D * !Q * Q_N)	0.00344	0.00328	0.00318
	(!D * !Q * Q_N)	0.00523	0.00507	0.00498

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT	
D	GATE	Q	Q_N
x	0	1	1
0	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbp_1	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE	Q	Q_N
sky130_fd_sc_hs__dlxbp_1	0.00206	0.00230	0.18701	0.18555

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	0.00033	0.00034

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (RR)	1.26187	2.63837	10.67930
	GATE->Q (-R)	1.08724	2.43651	10.39930

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.96383	2.02441	7.45077
	GATE->Q (-F)	0.97289	1.68686	4.48752

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q_N (FR)	1.20387	2.89308	13.60530
	GATE->Q_N (-R)	1.21328	2.55563	10.64450

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q_N (RF)	1.41216	2.08266	4.89968
	GATE->Q_N (-F)	1.23776	1.88052	4.62060

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00588	0.00591	0.00592
	D	0.00507	0.00510	0.00511
	GATE	0.00684	0.00681	0.00679
	GATE	0.00593	0.00591	0.00589

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00505	0.00510	0.00490
	D	0.00586	0.00591	0.00570
	GATE	0.00700	0.00703	0.00684
	GATE	0.00609	0.00613	0.00594

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00506	0.00511	0.00531
	D	0.00587	0.00592	0.00590
	GATE	0.00701	0.00704	0.00705
	GATE	0.00610	0.00614	0.00615

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00588	0.00591	0.00570
	D	0.00506	0.00509	0.00490
	GATE	0.00684	0.00680	0.00656
	GATE	0.00593	0.00590	0.00566

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00269	0.00260	0.00255
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00106	0.00097	0.00093

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00067	0.00060	0.00057
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00229	0.00222	0.00219

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	(D * Q * !Q_N)	0.00506	0.00487	0.00477
	(D * Q * !Q_N)	0.00325	0.00306	0.00295
	(!D * !Q * Q_N)	0.00518	0.00500	0.00489
	(!D * !Q * Q_N)	0.00337	0.00318	0.00308

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	(D * Q * !Q_N)	0.00316	0.00302	0.00294
	(D * Q * !Q_N)	0.00498	0.00483	0.00475
	(!D * !Q * Q_N)	0.00313	0.00297	0.00289
	(!D * !Q * Q_N)	0.00495	0.00479	0.00471

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
D	GATE_N	Q
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtn_1	22.37760
sky130_fd_sc_hs__dlxtn_2	23.97600
sky130_fd_sc_hs__dlxtn_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE_N	Q
sky130_fd_sc_hs__dlxtn_1	0.00206	0.00232	0.18848
sky130_fd_sc_hs__dlxtn_2	0.00212	0.00232	0.37393
sky130_fd_sc_hs__dlxtn_4	0.00211	0.00231	0.72459

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.00026	0.00027
sky130_fd_sc_hs__dlxtn_2	0.00000	0.00030	0.00031
sky130_fd_sc_hs__dlxtn_4	0.00000	0.00041	0.00042

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (RR)	1.22424	2.59070	10.62710
	GATE_N->Q (-R)	1.54348	3.23103	14.02230
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	1.21578	2.39578	10.63420
	GATE_N->Q (-R)	1.52275	3.02344	13.99830
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	1.44440	2.48173	10.84400
	GATE_N->Q (-R)	1.75192	3.10861	14.21430

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.84110	1.86382	7.28019
	GATE_N->Q (-F)	0.99912	2.01618	7.78052
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.94320	1.97005	7.42867
	GATE_N->Q (-F)	1.08900	2.11215	7.90839
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.94000	1.94390	7.48774
	GATE_N->Q (-F)	1.09810	2.09616	7.99071

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.00822	0.00820	0.00819
	D	0.00652	0.00649	0.00649
	GATE_N	0.00877	0.00872	0.00863
	GATE_N	0.01064	0.01057	0.01048
sky130_fd_sc_hs__dlxtn_2	D	0.00964	0.00971	0.00978
	D	0.00790	0.00797	0.00805
	GATE_N	0.01016	0.01019	0.01018
	GATE_N	0.01200	0.01203	0.01202
sky130_fd_sc_hs__dlxtn_4	D	0.01374	0.01398	0.01424
	D	0.01200	0.01224	0.01252
	GATE_N	0.01428	0.01445	0.01468
	GATE_N	0.01614	0.01629	0.01655

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.00694	0.00688	0.00677
	D	0.00863	0.00858	0.00846
	GATE_N	0.00884	0.00872	0.00851
	GATE_N	0.01069	0.01057	0.01036
sky130_fd_sc_hs__dlxtn_2	D	0.00820	0.00829	0.00818
	D	0.00994	0.01001	0.00990
	GATE_N	0.01009	0.01010	0.01004
	GATE_N	0.01192	0.01194	0.01174
sky130_fd_sc_hs__dlxtn_4	D	0.01214	0.01246	0.01382
	D	0.01386	0.01419	0.01407
	GATE_N	0.01403	0.01429	0.01408
	GATE_N	0.01587	0.01613	0.01591

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00263	0.00254	0.00249
	GATE_N	0.00093	0.00084	0.00079
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00264	0.00255	0.00250
	GATE_N	0.00090	0.00081	0.00076
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00265	0.00256	0.00250
	GATE_N	0.00091	0.00082	0.00077

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00091	0.00083	0.00080
	GATE_N	0.00261	0.00253	0.00250
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00090	0.00082	0.00079
	GATE_N	0.00263	0.00256	0.00253
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00091	0.00083	0.00080
	GATE_N	0.00264	0.00257	0.00253

Passive power(pJ) for GATE_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00527	0.00507	0.00496
	(D * Q)	0.00341	0.00321	0.00310
	(!D * !Q)	0.00521	0.00503	0.00493
	(!D * !Q)	0.00336	0.00317	0.00307
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00514	0.00494	0.00484
	(D * Q)	0.00330	0.00310	0.00299
	(!D * !Q)	0.00506	0.00488	0.00478
	(!D * !Q)	0.00323	0.00303	0.00293
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00518	0.00498	0.00486
	(D * Q)	0.00333	0.00314	0.00303
	(!D * !Q)	0.00511	0.00492	0.00482
	(!D * !Q)	0.00326	0.00307	0.00297

Passive power(pJ) for GATE_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00336	0.00321	0.00312
	(D * Q)	0.00523	0.00506	0.00496
	(!D * !Q)	0.00348	0.00332	0.00323
	(!D * !Q)	0.00535	0.00517	0.00508
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00332	0.00317	0.00308
	(D * Q)	0.00517	0.00501	0.00492
	(!D * !Q)	0.00347	0.00331	0.00321
	(!D * !Q)	0.00530	0.00515	0.00506
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00335	0.00319	0.00310
	(D * Q)	0.00520	0.00504	0.00495
	(!D * !Q)	0.00349	0.00332	0.00323
	(!D * !Q)	0.00534	0.00517	0.00508

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
D	GATE	Q
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtp_1	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE	Q
sky130_fd_sc_hs__dlxtp_1	0.00202	0.00237	0.18611

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.00026	0.00027

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (RR)	1.42051	2.77076	10.75820
	GATE->Q (-R)	1.14788	2.48136	10.41970

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.88941	1.92815	7.32766
	GATE->Q (-F)	0.91702	1.60280	4.40051

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.00888	0.00882	0.00880
	D	0.00712	0.00706	0.00706
	GATE	0.01115	0.01101	0.01089
	GATE	0.00921	0.00907	0.00896

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.00767	0.00763	0.00749
	D	0.00944	0.00938	0.00924
	GATE	0.01164	0.01156	0.01150
	GATE	0.00990	0.00981	0.00976

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00248	0.00239	0.00234
	!GATE	0.00082	0.00072	0.00068

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00063	0.00057	0.00054
	!GATE	0.00230	0.00223	0.00219

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00555	0.00534	0.00523
	(D * Q)	0.00371	0.00350	0.00339
	(!D * !Q)	0.00545	0.00525	0.00513
	(!D * !Q)	0.00360	0.00341	0.00329

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00280	0.00265	0.00256
	(D * Q)	0.00465	0.00449	0.00440
	(!D * !Q)	0.00306	0.00290	0.00279
	(!D * !Q)	0.00491	0.00474	0.00463

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlygate4sd1_1	12.78720
sky130_fd_sc_hs__dlygate4sd2_1	12.78720
sky130_fd_sc_hs__dlygate4sd3_1	12.78720

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlygate4sd1_1	0.00163	0.18733
sky130_fd_sc_hs__dlygate4sd2_1	0.00164	0.18592
sky130_fd_sc_hs__dlygate4sd3_1	0.00166	0.18228

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.00014	0.00014
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.00014	0.00014
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.00014	0.00014

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (RR)**	0.67834	2.02588	9.94176
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.94172	2.28458	10.16290
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	2.10757	3.45159	11.31780

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	1.09266	2.14445	8.27337
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	1.35736	2.43842	8.58375
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	2.35774	3.51799	9.82877

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00653	0.00648	0.00632
	A	0.00519	0.00515	0.00519
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00666	0.00659	0.00650
	A	0.00532	0.00525	0.00516
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00714	0.00710	0.00706
	A	0.00578	0.00574	0.00570

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00501	0.00497	0.00494
	A	0.00634	0.00630	0.00616
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00515	0.00513	0.00497
	A	0.00649	0.00647	0.00631
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00584	0.00584	0.00556
	A	0.00721	0.00720	0.00703

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	0
1	0	1
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__ebufn_1	12.78720
sky130_fd_sc_hs__ebufn_2	14.38560
sky130_fd_sc_hs__ebufn_4	19.18080
sky130_fd_sc_hs__ebufn_8	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__ebufn_1	0.00211	0.00393	0.07817
sky130_fd_sc_hs__ebufn_2	0.00231	0.00506	0.14496
sky130_fd_sc_hs__ebufn_4	0.00253	0.00769	0.29303
sky130_fd_sc_hs__ebufn_8	0.00487	0.01271	0.55867

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ebufn_1	0.00000	0.00009	0.00011
sky130_fd_sc_hs__ebufn_2	0.00000	0.00013	0.00015
sky130_fd_sc_hs__ebufn_4	0.00000	0.00018	0.00023
sky130_fd_sc_hs__ebufn_8	0.00000	0.00032	0.00043

Delay Information

Delay(ns) to Z rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (RR)	0.43871	2.18374	10.23420
	TE_B->Z (RR)	0.07589	0.54554	3.77717
	TE_B->Z (FR)	0.39230	2.52240	14.21850
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.34909	1.87358	10.23470
	TE_B->Z (RR)	0.07746	0.54364	3.77794
	TE_B->Z (FR)	0.33608	2.22042	14.14710
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.33440	1.68796	10.56580
	TE_B->Z (RR)	0.08801	0.58664	3.78000
	TE_B->Z (FR)	0.29867	1.96538	14.21070
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.34246	1.52204	10.55580
	TE_B->Z (RR)	0.12083	0.68474	3.78448
	TE_B->Z (FR)	0.30407	1.80065	14.20050

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.37445	1.36995	6.65041
	TE_B->Z (RF)	0.07540	0.54491	3.77716
	TE_B->Z (FF)	0.30251	1.29779	6.37803
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.46857	1.48083	7.14370
	TE_B->Z (RF)	0.07706	0.54272	3.77794
	TE_B->Z (FF)	0.33866	1.34563	6.72313
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.69286	1.73492	7.91261
	TE_B->Z (RF)	0.08695	0.58329	3.78002
	TE_B->Z (FF)	0.45552	1.47378	7.34703
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.65547	1.67970	7.91281
	TE_B->Z (RF)	0.11916	0.68059	3.78454
	TE_B->Z (FF)	0.68556	1.70525	7.99199

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00367	0.00358	0.00352
	A	0.00189	0.00180	0.00175
	TE_B	0.00156	0.00149	0.00146
	TE_B	0.00474	0.00465	0.00464
sky130_fd_sc_hs__ebufn_2	A	0.00526	0.00523	0.00519
	A	0.00336	0.00333	0.00329
	TE_B	0.00288	0.00281	0.00277
	TE_B	0.00698	0.00688	0.00687
sky130_fd_sc_hs__ebufn_4	A	0.00843	0.00851	0.00858
	A	0.00634	0.00641	0.00648
	TE_B	0.00570	0.00561	0.00556
	TE_B	0.01196	0.01185	0.01182
sky130_fd_sc_hs__ebufn_8	A	0.01636	0.01645	0.01678
	A	0.01228	0.01239	0.01270
	TE_B	0.01166	0.01151	0.01147
	TE_B	0.02205	0.02185	0.02186

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00181	0.00163	0.00176
	A	0.00359	0.00354	0.00353
	TE_B	0.00189	0.00182	0.00181
	TE_B	0.00503	0.00496	0.00494
sky130_fd_sc_hs__ebufn_2	A	0.00315	0.00322	0.00324
	A	0.00507	0.00514	0.00514
	TE_B	0.00356	0.00349	0.00348
	TE_B	0.00752	0.00742	0.00740
sky130_fd_sc_hs__ebufn_4	A	0.00586	0.00618	0.00681
	A	0.00797	0.00830	0.00837
	TE_B	0.00695	0.00685	0.00684
	TE_B	0.01302	0.01290	0.01286
sky130_fd_sc_hs__ebufn_8	A	0.01152	0.01213	0.01406
	A	0.01562	0.01624	0.01649
	TE_B	0.01409	0.01392	0.01388
	TE_B	0.02408	0.02397	0.02385

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00244	0.00235	0.00231
	(TE_B * Z)	0.00065	0.00056	0.00051
	(TE_B * !Z)	0.00244	0.00235	0.00230
	(TE_B * !Z)	0.00064	0.00056	0.00051
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00340	0.00330	0.00324
	(TE_B * Z)	0.00144	0.00134	0.00128
	(TE_B * !Z)	0.00330	0.00320	0.00312
	(TE_B * !Z)	0.00134	0.00124	0.00117
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00511	0.00502	0.00494
	(TE_B * Z)	0.00294	0.00285	0.00278
	(TE_B * !Z)	0.00492	0.00483	0.00474
	(TE_B * !Z)	0.00276	0.00267	0.00258
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00952	0.00933	0.00920
	(TE_B * Z)	0.00533	0.00515	0.00501
	(TE_B * !Z)	0.00913	0.00897	0.00878
	(TE_B * !Z)	0.00494	0.00476	0.00460

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00045	0.00038	0.00035
	(TE_B * Z)	0.00225	0.00219	0.00215
	(TE_B * !Z)	0.00047	0.00040	0.00038
	(TE_B * !Z)	0.00225	0.00219	0.00217
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00087	0.00079	0.00072
	(TE_B * Z)	0.00286	0.00278	0.00272
	(TE_B * !Z)	0.00094	0.00086	0.00083
	(TE_B * !Z)	0.00290	0.00283	0.00279
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00158	0.00148	0.00139
	(TE_B * Z)	0.00382	0.00371	0.00362
	(TE_B * !Z)	0.00172	0.00162	0.00159
	(TE_B * !Z)	0.00389	0.00379	0.00375
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00275	0.00256	0.00240
	(TE_B * Z)	0.00708	0.00690	0.00673
	(TE_B * !Z)	0.00303	0.00286	0.00280
	(TE_B * !Z)	0.00723	0.00706	0.00698

Passive power(pJ) for TE_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00197	0.00184	0.00177
	(A * Z)	-0.00116	-0.00130	-0.00137
	(!A * !Z)	0.00201	0.00187	0.00180
	(!A * !Z)	-0.00111	-0.00127	-0.00133
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00214	0.00196	0.00185
	(A * Z)	-0.00182	-0.00202	-0.00211
	(!A * !Z)	0.00223	0.00204	0.00193
	(!A * !Z)	-0.00171	-0.00194	-0.00204
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00264	0.00240	0.00224
	(A * Z)	-0.00339	-0.00367	-0.00382
	(!A * !Z)	0.00272	0.00247	0.00234
	(!A * !Z)	-0.00329	-0.00358	-0.00370
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00365	0.00330	0.00303
	(A * Z)	-0.00632	-0.00673	-0.00697
	(!A * !Z)	0.00364	0.00336	0.00317
	(!A * !Z)	-0.00625	-0.00665	-0.00681

Passive power(pJ) for TE_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00049	0.00043	0.00040
	(A * Z)	0.00363	0.00356	0.00354
	(!A * !Z)	0.00049	0.00042	0.00040
	(!A * !Z)	0.00362	0.00355	0.00352
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00113	0.00105	0.00101
	(A * Z)	0.00508	0.00502	0.00498
	(!A * !Z)	0.00111	0.00103	0.00099
	(!A * !Z)	0.00505	0.00498	0.00495
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00228	0.00216	0.00213
	(A * Z)	0.00834	0.00824	0.00817
	(!A * !Z)	0.00231	0.00220	0.00217
	(!A * !Z)	0.00834	0.00825	0.00820
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00465	0.00449	0.00445
	(A * Z)	0.01465	0.01453	0.01447
	(!A * !Z)	0.00483	0.00468	0.00462
	(!A * !Z)	0.01480	0.01463	0.01461

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	DE	CLK	Q	Q_N
x	0	R	IQ	IQ_N
0	1	R	0	1
1	1	R	1	0
x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxbp_1	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	DE	CLK	Q	Q_N
sky130_fd_sc_hs__edfxbp_1	0.00166	0.00324	0.00267	0.18437	0.18916

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.00050	0.00057

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RR)	0.83003	2.20357	10.16290

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	1.11935	2.01816	5.03189

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q_N (RR)	1.57236	2.87546	10.92910

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q_N (RF)	1.18587	1.93139	4.86904

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.23323	-0.40722	-1.63239
	setup	CLK (R)	0.33822	0.47133	1.74209

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-3.48165	-3.61499	-7.14232
	setup	CLK (R)	4.12377	4.23841	7.59428

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.23323	-0.40722	-1.63239
	setup	CLK (R)	0.33822	0.47133	1.74209

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-3.48165	-3.61499	-7.14232
	setup	CLK (R)	4.12377	4.23841	7.59428

Constraints(ns) for DE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.05483	-0.01668	0.24469
	setup	CLK (R)	4.22231	4.20682	3.88974

Constraints(ns) for DE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.56519	-0.85466	-4.40414
	setup	CLK (R)	3.59000	3.76169	7.26891

Constraints(ns) for DE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-0.05483	-0.01668	0.24469
	hold	CLK (R)	-1.09022	-1.24301	-1.90925
	setup	CLK (R)	0.33593	0.44508	1.74821
	setup	CLK (R)	4.22231	4.20682	3.88974

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	hold	CLK (R)	-3.46563	-3.65758	-7.22514
	hold	CLK (R)	-0.56519	-0.85466	-4.40414
	setup	CLK (R)	3.59000	3.76169	7.26891
	setup	CLK (R)	0.62003	0.88947	4.45525

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	min_pulse_width	CLK ()	0.38122	1.45020	16.50020
	min_pulse_width	CLK ()	0.92345	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxbp_1	min_pulse_width	CLK ()	0.79459	1.66512	16.50020
	min_pulse_width	CLK ()	2.67589	2.86457	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00824	0.00823	0.00822
	CLK	0.00721	0.00719	0.00719

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00810	0.00805	0.00779
	CLK	0.00698	0.00692	0.00667

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00811	0.00805	0.00799
	CLK	0.00699	0.00693	0.00687

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00823	0.00821	0.00804
	CLK	0.00720	0.00718	0.00700

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00310	0.00307	0.00301
	(CLK * DE)	0.00166	0.00162	0.00157
	(CLK * !DE)	0.00059	0.00059	0.00059
	(CLK * !DE)	-0.00039	-0.00038	-0.00038
	(!CLK * DE * Q * !Q_N)	0.00693	0.00690	0.00680
	(!CLK * DE * Q * !Q_N)	0.00549	0.00545	0.00537
	(!CLK * DE * !Q * Q_N)	0.00661	0.00657	0.00647
	(!CLK * DE * !Q * Q_N)	0.00516	0.00512	0.00502
	(!CLK * !DE)	0.00059	0.00059	0.00059
	(!CLK * !DE)	-0.00039	-0.00039	-0.00038

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00115	0.00105	0.00098
	(CLK * DE)	0.00260	0.00251	0.00241
	(CLK * !DE)	-0.00022	-0.00022	-0.00021
	(CLK * !DE)	0.00072	0.00072	0.00071
	(!CLK * DE * Q * !Q_N)	0.00487	0.00476	0.00109
	(!CLK * DE * Q * !Q_N)	0.00631	0.00621	0.00242
	(!CLK * DE * !Q * Q_N)	0.00510	0.00500	0.00133
	(!CLK * DE * !Q * Q_N)	0.00656	0.00646	0.00268
	(!CLK * !DE)	-0.00022	-0.00022	-0.00022
	(!CLK * !DE)	0.00072	0.00072	0.00071

Passive power(pJ) for DE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00426	0.00410	0.00400
	CLK	0.00209	0.00192	0.00183
	(!CLK * D * Q * !Q_N)	0.00263	0.00253	0.00247
	(!CLK * D * Q * !Q_N)	-0.00002	-0.00014	-0.00019
	(!CLK * D * !Q * Q_N)	0.00860	0.00847	0.00835
	(!CLK * D * !Q * Q_N)	0.00539	0.00526	0.00514
	(!CLK * !D * Q * !Q_N)	0.00819	0.00804	0.00792
	(!CLK * !D * Q * !Q_N)	0.00601	0.00586	0.00574
	(!CLK * !D * !Q * Q_N)	0.00264	0.00254	0.00249
	(!CLK * !D * !Q * Q_N)	0.00002	-0.00009	-0.00014

Passive power(pJ) for DE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00286	0.00278	0.00270
	CLK	0.00503	0.00495	0.00488
	(!CLK * D * Q * !Q_N)	-0.00000	-0.00009	-0.00011
	(!CLK * D * Q * !Q_N)	0.00265	0.00257	0.00254
	(!CLK * D * !Q * Q_N)	0.00557	0.00544	0.00175
	(!CLK * D * !Q * Q_N)	0.00878	0.00865	0.00486
	(!CLK * !D * Q * !Q_N)	0.00668	0.00661	0.00653
	(!CLK * !D * Q * !Q_N)	0.00885	0.00877	0.00871
	(!CLK * !D * !Q * Q_N)	-0.00003	-0.00011	-0.00014
	(!CLK * !D * !Q * Q_N)	0.00261	0.00252	0.00248

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(D * Q * !Q_N)	0.00798	0.00777	0.00764
	(D * Q * !Q_N)	0.00581	0.00561	0.00548
	(D * !DE * !Q * Q_N)	0.00763	0.00740	0.00727
	(D * !DE * !Q * Q_N)	0.00547	0.00524	0.00511
	(!D * !Q * Q_N)	0.00763	0.00740	0.00727
	(!D * !Q * Q_N)	0.00547	0.00524	0.00511
	(!D * !DE * Q * !Q_N)	0.00798	0.00777	0.00764
	(!D * !DE * Q * !Q_N)	0.00581	0.00561	0.00548

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(D * Q * !Q_N)	0.00412	0.00397	0.00386
	(D * Q * !Q_N)	0.00628	0.00613	0.00602
	(D * DE * !Q * Q_N)	0.00814	0.00797	0.00777
	(D * DE * !Q * Q_N)	0.01029	0.01014	0.00993
	(D * !DE * !Q * Q_N)	0.00428	0.00413	0.00402
	(D * !DE * !Q * Q_N)	0.00644	0.00630	0.00617
	(!D * DE * Q * !Q_N)	0.00880	0.00862	0.00807
	(!D * DE * Q * !Q_N)	0.01096	0.01079	0.01016
	(!D * !Q * Q_N)	0.00428	0.00413	0.00401
	(!D * !Q * Q_N)	0.00644	0.00630	0.00617
	(!D * !DE * Q * !Q_N)	0.00412	0.00397	0.00386
	(!D * !DE * Q * !Q_N)	0.00628	0.00613	0.00601

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	DE	CLK	Q
x	0	R	IQ
0	1	R	0
1	1	R	1
x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxtp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	DE	CLK	Q
sky130_fd_sc_hs__edfxtp_1	0.00170	0.00310	0.00261	0.18670

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.00047	0.00054

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RR)	0.79415	2.16987	10.18450

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.98128	1.82301	4.77097

Constraint Information

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.23000	-0.40545	-1.64006
	setup	CLK (R)	0.33430	0.46837	1.76009

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-3.44809	-3.57716	-7.13009
	setup	CLK (R)	4.09411	4.20923	7.56841

Constraints(ns) for DE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.07153	-0.03023	0.21143
	setup	CLK (R)	4.18319	4.16857	3.86895

Constraints(ns) for DE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.55816	-0.85288	-4.41678
	setup	CLK (R)	3.54840	3.72179	7.25149

Constraints(ns) for DE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-0.07153	-0.03023	0.21143
	hold	CLK (R)	-1.08341	-1.22077	-1.81312
	setup	CLK (R)	0.32819	0.44508	1.76587
	setup	CLK (R)	4.18319	4.16857	3.86895

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	hold	CLK (R)	-3.43340	-3.62953	-7.20373
	hold	CLK (R)	-0.55816	-0.85288	-4.41678
	setup	CLK (R)	3.54840	3.72179	7.25149
	setup	CLK (R)	0.61256	0.89073	4.46912

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	min_pulse_width	CLK ()	0.36056	1.45020	16.50020
	min_pulse_width	CLK ()	0.77886	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__edfxtp_1	min_pulse_width	CLK ()	0.76780	1.64433	16.50020
	min_pulse_width	CLK ()	2.71633	2.90270	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01369	0.01361	0.01360
	CLK	0.01166	0.01158	0.01158

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01336	0.01318	0.01301
	CLK	0.01117	0.01100	0.01082

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00300	0.00296	0.00290
	(CLK * DE)	0.00154	0.00150	0.00144
	(CLK * !DE)	0.00059	0.00059	0.00059
	(CLK * !DE)	-0.00039	-0.00039	-0.00039
	(!CLK * DE * Q)	0.00681	0.00677	0.00668
	(!CLK * DE * Q)	0.00536	0.00532	0.00523
	(!CLK * DE * !Q)	0.00647	0.00644	0.00634
	(!CLK * DE * !Q)	0.00501	0.00497	0.00487
	(!CLK * !DE)	0.00059	0.00060	0.00059
	(!CLK * !DE)	-0.00039	-0.00040	-0.00039

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00109	0.00100	0.00094
	(CLK * DE)	0.00256	0.00247	0.00239
	(CLK * !DE)	-0.00021	-0.00021	-0.00021
	(CLK * !DE)	0.00074	0.00074	0.00073
	(!CLK * DE * Q)	0.00462	0.00451	0.00109
	(!CLK * DE * Q)	0.00608	0.00597	0.00245
	(!CLK * DE * !Q)	0.00488	0.00477	0.00134
	(!CLK * DE * !Q)	0.00635	0.00624	0.00272
	(!CLK * !DE)	-0.00021	-0.00021	-0.00021
	(!CLK * !DE)	0.00074	0.00074	0.00073

Passive power(pJ) for DE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00414	0.00398	0.00389
	CLK	0.00209	0.00192	0.00182
	(!CLK * D * Q)	0.00255	0.00245	0.00238
	(!CLK * D * Q)	-0.00000	-0.00011	-0.00015
	(!CLK * D * !Q)	0.00838	0.00826	0.00814
	(!CLK * D * !Q)	0.00529	0.00515	0.00504
	(!CLK * !D * Q)	0.00784	0.00771	0.00759
	(!CLK * !D * Q)	0.00580	0.00564	0.00552
	(!CLK * !D * !Q)	0.00257	0.00247	0.00242
	(!CLK * !D * !Q)	0.00005	-0.00005	-0.00010

Passive power(pJ) for DE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00276	0.00269	0.00261
	CLK	0.00482	0.00474	0.00468
	(!CLK * D * Q)	0.00002	-0.00006	-0.00009
	(!CLK * D * Q)	0.00255	0.00248	0.00245
	(!CLK * D * !Q)	0.00535	0.00522	0.00178
	(!CLK * D * !Q)	0.00845	0.00833	0.00479
	(!CLK * !D * Q)	0.00657	0.00650	0.00643
	(!CLK * !D * Q)	0.00863	0.00855	0.00850
	(!CLK * !D * !Q)	-0.00002	-0.00010	-0.00013
	(!CLK * !D * !Q)	0.00250	0.00242	0.00239

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00762	0.00743	0.00731
	(D * Q)	0.00551	0.00532	0.00519
	(D * !DE * !Q)	0.00754	0.00732	0.00719
	(D * !DE * !Q)	0.00543	0.00521	0.00508
	(!D * !Q)	0.00754	0.00732	0.00719
	(!D * !Q)	0.00543	0.00521	0.00509
	(!D * !DE * Q)	0.00762	0.00743	0.00731
	(!D * !DE * Q)	0.00551	0.00532	0.00519

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00412	0.00397	0.00386
	(D * Q)	0.00623	0.00609	0.00597
	(D * DE * !Q)	0.00784	0.00769	0.00750
	(D * DE * !Q)	0.00996	0.00980	0.00961
	(D * !DE * !Q)	0.00402	0.00387	0.00376
	(D * !DE * !Q)	0.00613	0.00599	0.00587
	(!D * DE * Q)	0.00854	0.00839	0.00786
	(!D * DE * Q)	0.01066	0.01051	0.00991
	(!D * !Q)	0.00402	0.00387	0.00376
	(!D * !Q)	0.00613	0.00599	0.00587
	(!D * !DE * Q)	0.00412	0.00397	0.00386
	(!D * !DE * Q)	0.00623	0.00609	0.00597

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	1
1	0	0
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvn_1	7.99200
sky130_fd_sc_hs__einvn_2	11.18880
sky130_fd_sc_hs__einvn_4	17.58240
sky130_fd_sc_hs__einvn_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__einvn_1	0.00259	0.00282	0.07821
sky130_fd_sc_hs__einvn_2	0.00483	0.00425	0.15204
sky130_fd_sc_hs__einvn_4	0.00963	0.00763	0.29784
sky130_fd_sc_hs__einvn_8	0.01927	0.01262	0.57929

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	0.00007	0.00007
sky130_fd_sc_hs__einvn_2	0.00000	0.00009	0.00011
sky130_fd_sc_hs__einvn_4	0.00000	0.00014	0.00020
sky130_fd_sc_hs__einvn_8	0.00000	0.00025	0.00036

Delay Information

Delay(ns) to Z rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (FR)	0.36753	2.40099	13.69040
	TE_B->Z (RR)	0.07560	0.54087	3.77678
	TE_B->Z (FR)	0.38995	2.52123	14.21970
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.24759	2.01454	13.65230
	TE_B->Z (RR)	0.08765	0.58149	3.77857
	TE_B->Z (FR)	0.30839	2.18710	14.21980
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.22709	1.78425	13.59660
	TE_B->Z (RR)	0.08913	0.58918	3.78006
	TE_B->Z (FR)	0.28394	1.94135	14.13210
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.22516	1.63099	13.66050
	TE_B->Z (RR)	0.11867	0.67747	3.78658
	TE_B->Z (FR)	0.28876	1.77852	14.17610

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.06916	0.76204	4.75326
	TE_B->Z (RF)	0.07495	0.54085	3.77680
	TE_B->Z (FF)	0.30509	1.29698	6.34164
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.06085	0.71096	4.82597
	TE_B->Z (RF)	0.08681	0.57998	3.77859
	TE_B->Z (FF)	0.36900	1.36155	6.70404
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.05965	0.66659	4.85861
	TE_B->Z (RF)	0.08803	0.58646	3.78009
	TE_B->Z (FF)	0.43124	1.43635	7.29486
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.06252	0.64504	5.03615
	TE_B->Z (RF)	0.11653	0.67565	3.78670
	TE_B->Z (FF)	0.62560	1.63784	7.89385

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00019	-0.00024	-0.00024
	A	0.00186	0.00180	0.00180
	TE_B	0.00121	0.00116	0.00114
	TE_B	0.00403	0.00397	0.00397
sky130_fd_sc_hs__einvn_2	A	-0.00090	-0.00096	-0.00095
	A	0.00303	0.00300	0.00301
	TE_B	0.00175	0.00169	0.00166
	TE_B	0.00628	0.00622	0.00620
sky130_fd_sc_hs__einvn_4	A	-0.00175	-0.00184	-0.00180
	A	0.00612	0.00604	0.00611
	TE_B	0.00355	0.00345	0.00340
	TE_B	0.01193	0.01182	0.01180
sky130_fd_sc_hs__einvn_8	A	-0.00328	-0.00340	-0.00334
	A	0.01250	0.01234	0.01246
	TE_B	0.00733	0.00719	0.00715
	TE_B	0.02200	0.02182	0.02178

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00191	0.00190	0.00189
	A	-0.00012	-0.00014	-0.00016
	TE_B	0.00211	0.00202	0.00204
	TE_B	0.00373	0.00368	0.00365
sky130_fd_sc_hs__einvn_2	A	0.00313	0.00314	0.00315
	A	-0.00080	-0.00081	-0.00081
	TE_B	0.00342	0.00335	0.00340
	TE_B	0.00562	0.00556	0.00555
sky130_fd_sc_hs__einvn_4	A	0.00633	0.00634	0.00640
	A	-0.00150	-0.00155	-0.00148
	TE_B	0.00702	0.00691	0.00713
	TE_B	0.01066	0.01053	0.01051
sky130_fd_sc_hs__einvn_8	A	0.01262	0.01254	0.01278
	A	-0.00309	-0.00329	-0.00300
	TE_B	0.01410	0.01395	0.01556
	TE_B	0.01911	0.01899	0.01893

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00049	0.00049	0.00048
	(TE_B * Z)	-0.00077	-0.00077	-0.00077
	(TE_B * !Z)	0.00051	0.00051	0.00051
	(TE_B * !Z)	-0.00074	-0.00075	-0.00074
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00094	0.00094	0.00089
	(TE_B * Z)	-0.00147	-0.00148	-0.00147
	(TE_B * !Z)	0.00100	0.00100	0.00100
	(TE_B * !Z)	-0.00139	-0.00139	-0.00136
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00173	0.00171	0.00164
	(TE_B * Z)	-0.00300	-0.00299	-0.00297
	(TE_B * !Z)	0.00182	0.00183	0.00183
	(TE_B * !Z)	-0.00282	-0.00282	-0.00277
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00333	0.00331	0.00318
	(TE_B * Z)	-0.00590	-0.00593	-0.00590
	(TE_B * !Z)	0.00358	0.00359	0.00357
	(TE_B * !Z)	-0.00560	-0.00559	-0.00551

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00046	-0.00046	-0.00045
	(TE_B * Z)	0.00077	0.00077	0.00077
	(TE_B * !Z)	-0.00051	-0.00051	-0.00051
	(TE_B * !Z)	0.00077	0.00077	0.00076
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00087	-0.00087	-0.00087
	(TE_B * Z)	0.00147	0.00148	0.00147
	(TE_B * !Z)	-0.00100	-0.00100	-0.00100
	(TE_B * !Z)	0.00140	0.00140	0.00136
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00161	-0.00160	-0.00159
	(TE_B * Z)	0.00300	0.00299	0.00297
	(TE_B * !Z)	-0.00182	-0.00183	-0.00183
	(TE_B * !Z)	0.00282	0.00282	0.00277
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00309	-0.00311	-0.00309
	(TE_B * Z)	0.00590	0.00593	0.00590
	(TE_B * !Z)	-0.00358	-0.00359	-0.00357
	(TE_B * !Z)	0.00560	0.00559	0.00551

Passive power(pJ) for TE_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00141	0.00130	0.00124
	(A * !Z)	-0.00088	-0.00099	-0.00103
	(!A * Z)	0.00134	0.00125	0.00120
	(!A * Z)	-0.00085	-0.00097	-0.00102
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00170	0.00156	0.00148
	(A * !Z)	-0.00185	-0.00198	-0.00204
	(!A * Z)	0.00154	0.00144	0.00138
	(!A * Z)	-0.00179	-0.00193	-0.00202
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00285	0.00259	0.00246
	(A * !Z)	-0.00346	-0.00366	-0.00380
	(!A * Z)	0.00253	0.00236	0.00226
	(!A * Z)	-0.00332	-0.00360	-0.00377
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00344	0.00316	0.00297
	(A * !Z)	-0.00686	-0.00719	-0.00735
	(!A * Z)	0.00291	0.00275	0.00259
	(!A * Z)	-0.00656	-0.00695	-0.00720

Passive power(pJ) for TE_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00071	0.00067	0.00064
	(A * !Z)	0.00300	0.00295	0.00292
	(!A * Z)	0.00074	0.00069	0.00067
	(!A * Z)	0.00294	0.00289	0.00288
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00113	0.00106	0.00105
	(A * !Z)	0.00468	0.00461	0.00458
	(!A * Z)	0.00124	0.00118	0.00115
	(!A * Z)	0.00458	0.00452	0.00450
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00225	0.00214	0.00210
	(A * !Z)	0.00853	0.00844	0.00839
	(!A * Z)	0.00244	0.00233	0.00230
	(!A * Z)	0.00835	0.00825	0.00821
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00465	0.00451	0.00447
	(A * !Z)	0.01499	0.01488	0.01481
	(!A * Z)	0.00498	0.00484	0.00479
	(!A * Z)	0.01452	0.01438	0.01435

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	TE	Z
-	0	HiZ
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvp_1	7.99200
sky130_fd_sc_hs__einvp_2	11.18880
sky130_fd_sc_hs__einvp_4	19.18080
sky130_fd_sc_hs__einvp_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE	Z
sky130_fd_sc_hs__einvp_1	0.00261	0.00252	0.07481
sky130_fd_sc_hs__einvp_2	0.00475	0.00393	0.15385
sky130_fd_sc_hs__einvp_4	0.00963	0.00713	0.30076
sky130_fd_sc_hs__einvp_8	0.01929	0.01117	0.57583

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.00006	0.00008
sky130_fd_sc_hs__einvp_2	0.00000	0.00009	0.00013
sky130_fd_sc_hs__einvp_4	0.00000	0.00014	0.00020
sky130_fd_sc_hs__einvp_8	0.00000	0.00024	0.00037

Delay Information

Delay(ns) to Z rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (FR)	0.36953	2.36432	13.32650
	TE->Z (FR)	0.50242	1.39898	6.68015
	TE->Z (RR)	0.41533	2.12521	9.84389
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.24303	2.00615	13.66010
	TE->Z (FR)	0.35678	1.22680	5.86805
	TE->Z (RR)	0.37314	1.87175	10.26860
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.22847	1.78909	13.65450
	TE->Z (FR)	0.46510	1.35559	6.54158
	TE->Z (RR)	0.35262	1.64947	10.35180
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.22439	1.62411	13.66170
	TE->Z (FR)	0.73780	1.61841	7.09927
	TE->Z (RR)	0.39759	1.58863	10.73570

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.06989	0.75418	4.68968
	TE->Z (FF)	0.50353	1.40406	6.67976
	TE->Z (RF)	0.07145	0.74662	4.64743
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.06009	0.70446	4.78868
	TE->Z (FF)	0.36130	1.23051	5.87901
	TE->Z (RF)	0.06683	0.70300	4.71635
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.06015	0.66988	4.88743
	TE->Z (FF)	0.46878	1.36072	6.55148
	TE->Z (RF)	0.06803	0.66268	4.70544
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.06303	0.65065	5.08276
	TE->Z (FF)	0.74341	1.62585	7.11164
	TE->Z (RF)	0.07448	0.63214	4.68713

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00029	-0.00034	-0.00035
	A	0.00181	0.00177	0.00176
	TE	0.00350	0.00345	0.00341
	TE	0.00216	0.00210	0.00207
sky130_fd_sc_hs__einvp_2	A	-0.00089	-0.00094	-0.00093
	A	0.00299	0.00295	0.00297
	TE	0.00535	0.00527	0.00524
	TE	0.00337	0.00329	0.00325
sky130_fd_sc_hs__einvp_4	A	-0.00165	-0.00174	-0.00172
	A	0.00620	0.00614	0.00620
	TE	0.01022	0.01013	0.01004
	TE	0.00695	0.00682	0.00674
sky130_fd_sc_hs__einvp_8	A	-0.00330	-0.00339	-0.00334
	A	0.01252	0.01223	0.01246
	TE	0.01786	0.01778	0.01767
	TE	0.01386	0.01376	0.01366

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00199	0.00198	0.00196
	A	-0.00011	-0.00013	-0.00014
	TE	0.00440	0.00435	0.00431
	TE	0.00169	0.00163	0.00159
sky130_fd_sc_hs__einvp_2	A	0.00315	0.00315	0.00315
	A	-0.00073	-0.00074	-0.00073
	TE	0.00688	0.00682	0.00678
	TE	0.00251	0.00242	0.00238
sky130_fd_sc_hs__einvp_4	A	0.00624	0.00624	0.00631
	A	-0.00159	-0.00164	-0.00158
	TE	0.01323	0.01311	0.01306
	TE	0.00499	0.00486	0.00477
sky130_fd_sc_hs__einvp_8	A	0.01253	0.01245	0.01278
	A	-0.00318	-0.00336	-0.00309
	TE	0.02385	0.02379	0.02372
	TE	0.00978	0.00967	0.00956

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00043	0.00043	0.00042
	(!TE * Z)	-0.00078	-0.00078	-0.00078
	(!TE * !Z)	0.00046	0.00046	0.00046
	(!TE * !Z)	-0.00075	-0.00075	-0.00075
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00081	0.00080	0.00077
	(!TE * Z)	-0.00152	-0.00154	-0.00153
	(!TE * !Z)	0.00086	0.00086	0.00086
	(!TE * !Z)	-0.00145	-0.00146	-0.00144
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00155	0.00153	0.00147
	(!TE * Z)	-0.00304	-0.00308	-0.00306
	(!TE * !Z)	0.00167	0.00168	0.00167
	(!TE * !Z)	-0.00290	-0.00291	-0.00286
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00302	0.00300	0.00289
	(!TE * Z)	-0.00601	-0.00598	-0.00595
	(!TE * !Z)	0.00329	0.00330	0.00328
	(!TE * !Z)	-0.00564	-0.00566	-0.00555

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00041	-0.00041	-0.00041
	(!TE * Z)	0.00078	0.00078	0.00078
	(!TE * !Z)	-0.00046	-0.00046	-0.00046
	(!TE * !Z)	0.00077	0.00077	0.00076
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00075	-0.00076	-0.00075
	(!TE * Z)	0.00152	0.00154	0.00153
	(!TE * !Z)	-0.00086	-0.00086	-0.00086
	(!TE * !Z)	0.00146	0.00147	0.00144
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00144	-0.00145	-0.00144
	(!TE * Z)	0.00304	0.00308	0.00306
	(!TE * !Z)	-0.00167	-0.00168	-0.00167
	(!TE * !Z)	0.00291	0.00292	0.00286
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00289	-0.00286	-0.00285
	(!TE * Z)	0.00601	0.00598	0.00595
	(!TE * !Z)	-0.00329	-0.00330	-0.00328
	(!TE * !Z)	0.00568	0.00566	0.00555

Passive power(pJ) for TE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00303	0.00298	0.00293
	(A * !Z)	0.00114	0.00108	0.00105
	(!A * Z)	0.00304	0.00299	0.00295
	(!A * Z)	0.00108	0.00103	0.00099
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00457	0.00451	0.00446
	(A * !Z)	0.00166	0.00158	0.00154
	(!A * Z)	0.00466	0.00459	0.00454
	(!A * Z)	0.00156	0.00148	0.00144
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.00868	0.00857	0.00850
	(A * !Z)	0.00346	0.00334	0.00326
	(!A * Z)	0.00880	0.00873	0.00863
	(!A * Z)	0.00324	0.00311	0.00304
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.01483	0.01473	0.01463
	(A * !Z)	0.00689	0.00679	0.00669
	(!A * Z)	0.01511	0.01502	0.01491
	(!A * Z)	0.00650	0.00640	0.00631

Passive power(pJ) for TE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00057	-0.00066	-0.00069
	(A * !Z)	0.00130	0.00122	0.00120
	(!A * Z)	-0.00058	-0.00067	-0.00069
	(!A * Z)	0.00135	0.00129	0.00125
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00151	-0.00165	-0.00170
	(A * !Z)	0.00136	0.00127	0.00124
	(!A * Z)	-0.00160	-0.00170	-0.00173
	(!A * Z)	0.00149	0.00138	0.00132
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00278	-0.00303	-0.00311
	(A * !Z)	0.00241	0.00222	0.00216
	(!A * Z)	-0.00289	-0.00309	-0.00318
	(!A * Z)	0.00266	0.00246	0.00236
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00510	-0.00553	-0.00565
	(A * !Z)	0.00270	0.00250	0.00240
	(!A * Z)	-0.00537	-0.00571	-0.00580
	(!A * Z)	0.00314	0.00295	0.00275

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CIN	COUT	SUM
0	0	0	0	1
0	0	1	0	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	1	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcin_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CIN	COUT	SUM
sky130_fd_sc_hs__fahcin_1	0.00266	0.00689	0.00463	0.07732	0.18859

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	0.00069	0.00071

Delay Information

Delay(ns) to COUT rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (RR)	0.75061	2.56469	9.14860
	B->COUT (RR)	0.79216	2.55492	8.48063
	CIN->COUT (FR)	0.52123	2.14892	11.54530

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	1.62105	2.75505	9.07917
	B->COUT (FF)	1.38776	2.42210	8.31517
	CIN->COUT (RF)	0.12373	0.86475	4.93808

Delay(ns) to SUM rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->SUM (-R)	-	1.91074	3.60818	15.31480
	B->SUM (-R)	-	1.67739	3.26656	14.44170
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.34202	1.76238	10.18230
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.71867	2.43283	13.49770

Delay(ns) to SUM falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->SUM (-F)	-	1.65587	2.76102	9.04902
	B->SUM (-F)	-	1.45629	2.55182	8.61596
	CIN->SUM (FF)	(A * !B) + (!A * B)	1.08420	2.21898	8.68784
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.87404	1.61102	4.42737

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.00848	0.00845	0.00834
	A	0.00747	0.00743	0.00732
	B	0.00894	0.00904	0.00922
	B	0.00634	0.00645	0.00662
	CIN	0.00352	0.00347	0.00352
	CIN	0.00543	0.00537	0.00533

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.00731	0.00728	0.00715
	A	0.00833	0.00829	0.00816
	B	0.00635	0.00637	0.00652
	B	0.00897	0.00898	0.00911
	CIN	0.00571	0.00563	0.00556
	CIN	0.00382	0.00374	0.00367

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.01592	0.01587	0.01594
	A	-	0.01389	0.01384	0.01392
	B	-	0.01644	0.01684	0.01733
	B	-	0.01094	0.01129	0.01192
	CIN	(A * B) + (!A * !B)	0.00535	0.00516	0.00499
	CIN	(A * B) + (!A * !B)	0.00915	0.00895	0.00881
	CIN	(A * !B) + (!A * B)	0.00571	0.00565	0.00569
	CIN	(A * !B) + (!A * B)	0.00382	0.00375	0.00370

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.01321	0.01316	0.01282
	A	-	0.01524	0.01519	0.01503
	B	-	0.01116	0.01128	0.01228
	B	-	0.01638	0.01648	0.01747
	CIN	(A * B) + (!A * !B)	0.01002	0.00975	0.00960
	CIN	(A * B) + (!A * !B)	0.00624	0.00597	0.00580
	CIN	(A * !B) + (!A * B)	0.00352	0.00348	0.00298
	CIN	(A * !B) + (!A * B)	0.00543	0.00538	0.00486

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT_N	SUM
0	0	0	1	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	0
1	0	0	1	1
1	0	1	0	0
1	1	0	0	0
1	1	1	0	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcon_1	38.36160

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT_N	SUM
sky130_fd_sc_hs__fahcon_1	0.00264	0.00864	0.00465	0.07992	0.18085

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	0.00069	0.00072

Delay Information

Delay(ns) to COUT_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcon_1	A->COUT_N (FR)	1.17854	3.30095	12.75570
	B->COUT_N (FR)	0.93015	2.90802	12.08680
	CI->COUT_N (FR)	0.50534	2.18531	11.63000

Delay(ns) to COUT_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcon_1	A->COUT_N (RF)	1.15173	1.96428	5.08534
	B->COUT_N (RF)	0.87684	1.62162	5.20569
	CI->COUT_N (RF)	0.11811	0.84565	4.96885

Delay(ns) to SUM rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fahcon_1	A->SUM (-R)	-	1.61553	3.39037	14.81420
	B->SUM (-R)	-	1.28506	2.93846	13.75060
	CI->SUM (RR)	(A * B) + (!A * !B)	0.32465	1.72606	9.82958
	CI->SUM (FR)	(A * !B) + (!A * B)	0.70208	2.41392	13.31500

Delay(ns) to SUM falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fahcon_1	A->SUM (-F)	-	1.53070	2.63672	8.84450
	B->SUM (-F)	-	1.25055	2.36995	8.23877
	CI->SUM (FF)	(A * B) + (!A * !B)	1.04210	2.14979	8.55027
	CI->SUM (RF)	(A * !B) + (!A * B)	0.92309	1.65716	4.41361

Power Information

Internal switching power(pJ) to COUT_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.00652	0.00650	0.00644
	A	0.00757	0.00755	0.00748
	B	0.00494	0.00497	0.00523
	B	0.00832	0.00834	0.00861
	CI	0.00347	0.00338	0.00331
	CI	0.00539	0.00528	0.00524

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.00763	0.00750	0.00735
	A	0.00658	0.00645	0.00630
	B	0.00838	0.00842	0.00859
	B	0.00501	0.00505	0.00521
	CI	0.00576	0.00565	0.00558
	CI	0.00386	0.00374	0.00367

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01385	0.01381	0.01389
	A	-	0.01175	0.01171	0.01180
	B	-	0.01559	0.01704	0.02005
	B	-	0.00885	0.01028	0.01330
	CI	(A * B) + (!A * !B)	0.00989	0.00967	0.00950
	CI	(A * B) + (!A * !B)	0.00606	0.00585	0.00569
	CI	(A * !B) + (!A * B)	0.00347	0.00337	0.00330
	CI	(A * !B) + (!A * B)	0.00539	0.00527	0.00523

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01248	0.01243	0.01225
	A	-	0.01459	0.01452	0.01438
	B	-	0.01010	0.01262	0.01577
	B	-	0.01688	0.01939	0.02252
	CI	(A * B) + (!A * !B)	0.00614	0.00602	0.00591
	CI	(A * B) + (!A * !B)	0.00997	0.00984	0.00972
	CI	(A * !B) + (!A * B)	0.00576	0.00567	0.00574
	CI	(A * !B) + (!A * B)	0.00386	0.00375	0.00367

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fah_1	46.35360
sky130_fd_sc_hs__fah_2	47.95200
sky130_fd_sc_hs__fah_4	51.14880

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT	SUM
sky130_fd_sc_hs__fah_1	0.00439	0.00694	0.00232	0.17893	0.18597
sky130_fd_sc_hs__fah_2	0.00444	0.00796	0.00247	0.35904	0.36899
sky130_fd_sc_hs__fah_4	0.00435	0.00716	0.00235	0.67523	0.73366

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	0.00069	0.00072
sky130_fd_sc_hs__fah_2	0.00000	0.00077	0.00079
sky130_fd_sc_hs__fah_4	0.00000	0.00092	0.00094

Delay Information

Delay(ns) to COUT rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (RR)	1.57519	2.97136	11.13670
	B->COUT (RR)	1.32830	2.79045	11.07390
	CI->COUT (RR)	0.43321	1.94530	10.69540
sky130_fd_sc_hs__fah_2	A->COUT (RR)	1.67595	2.84474	11.04050
	B->COUT (RR)	1.31355	2.56079	11.00450
	CI->COUT (RR)	0.39510	1.68471	10.50120
sky130_fd_sc_hs__fah_4	A->COUT (RR)	1.47844	2.52057	10.94740
	B->COUT (RR)	1.26560	2.37775	10.98370
	CI->COUT (RR)	0.47237	1.64675	10.87600

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	1.36508	2.51347	8.07185
	B->COUT (FF)	1.52922	2.63327	9.08837
	CI->COUT (FF)	1.42343	2.52733	8.96501
sky130_fd_sc_hs__fah_2	A->COUT (FF)	1.62805	2.78613	8.54928
	B->COUT (FF)	1.71013	2.87364	9.39015
	CI->COUT (FF)	1.44964	2.58967	9.08725
sky130_fd_sc_hs__fah_4	A->COUT (FF)	2.12033	3.32413	9.11528
	B->COUT (FF)	2.13159	3.26430	10.24860
	CI->COUT (FF)	1.84017	3.01846	9.72117

Delay(ns) to SUM rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fah_1	A->SUM (-R)	-	1.60710	3.35940	14.90260
	B->SUM (-R)	-	1.42424	3.10262	14.28350
	CI->SUM (RR)	(A * B) + (!A * !B)	0.41878	1.86845	10.39470
	CI->SUM (FR)	(A * !B) + (!A * B)	1.06372	2.84247	14.34850
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	1.64280	3.17388	14.75800
	B->SUM (-R)	-	1.55020	2.97840	14.27630
	CI->SUM (RR)	(A * B) + (!A * !B)	0.38472	1.67087	10.46960
	CI->SUM (FR)	(A * !B) + (!A * B)	1.05227	2.58138	14.05420
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	1.57410	2.98212	14.93690
	B->SUM (-R)	-	1.42440	2.73485	14.24600
	CI->SUM (RR)	(A * B) + (!A * !B)	0.50603	1.66218	10.78560
	CI->SUM (FR)	(A * !B) + (!A * B)	1.26794	2.67826	14.68140

Delay(ns) to SUM falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__fah_1	A->SUM (-F)	-	1.43951	2.58006	8.23864
	B->SUM (-F)	-	1.67658	2.78865	8.98421
	CI->SUM (FF)	(A * B) + (!A * !B)	1.32411	2.45824	8.90851
	CI->SUM (RF)	(A * !B) + (!A * B)	1.24113	2.16300	5.62257
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	1.65980	2.80626	8.57537
	B->SUM (-F)	-	1.79207	2.92303	9.06772
	CI->SUM (FF)	(A * B) + (!A * !B)	1.41544	2.54395	9.04043
	CI->SUM (RF)	(A * !B) + (!A * B)	1.20965	2.08583	5.65609
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	2.16975	3.38885	9.29239
	B->SUM (-F)	-	2.29071	3.41217	11.58690
	CI->SUM (FF)	(A * B) + (!A * !B)	1.77422	2.96203	9.71892
	CI->SUM (RF)	(A * !B) + (!A * B)	1.83203	2.83535	6.89492

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01058	0.01047	0.01040
	A	0.00893	0.00881	0.00873
	B	0.00947	0.00958	0.00982
	B	0.00693	0.00704	0.00728
	CI	0.00664	0.00663	0.00657
	CI	0.00581	0.00580	0.00573
sky130_fd_sc_hs__fah_2	A	0.01185	0.01185	0.01187
	A	0.01000	0.01000	0.01002
	B	0.01098	0.01123	0.01148
	B	0.00797	0.00820	0.00846
	CI	0.00694	0.00707	0.00704
	CI	0.00593	0.00606	0.00605
sky130_fd_sc_hs__fah_4	A	0.01347	0.01363	0.01420
	A	0.01189	0.01204	0.01226
	B	0.01283	0.01333	0.01390
	B	0.01013	0.01062	0.01116
	CI	0.01047	0.01078	0.01129
	CI	0.00960	0.00991	0.00997

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.00885	0.00878	0.00848
	A	0.01057	0.01049	0.01019
	B	0.00732	0.00743	0.00757
	B	0.00994	0.01005	0.01018
	CI	0.00560	0.00564	0.00540
	CI	0.00644	0.00647	0.00624
sky130_fd_sc_hs__fah_2	A	0.00995	0.01000	0.00957
	A	0.01180	0.01184	0.01141
	B	0.00746	0.00768	0.00781
	B	0.01048	0.01070	0.01086
	CI	0.00597	0.00613	0.00562
	CI	0.00698	0.00714	0.00693
sky130_fd_sc_hs__fah_4	A	0.01180	0.01202	0.01120
	A	0.01354	0.01374	0.01337
	B	0.01039	0.01076	0.01383
	B	0.01310	0.01347	0.01652
	CI	0.00908	0.00947	0.00922
	CI	0.00996	0.01034	0.01009

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.01830	0.01798	0.01783
	A	-	0.01476	0.01441	0.01426
	B	-	0.01569	0.01646	0.01759
	B	-	0.01038	0.01116	0.01228
	CI	(A * B) + (!A * !B)	0.00915	0.00900	0.00885
	CI	(A * B) + (!A * !B)	0.00725	0.00709	0.00696
	CI	(A * !B) + (!A * B)	0.00560	0.00564	0.00551
	CI	(A * !B) + (!A * B)	0.00644	0.00647	0.00642
sky130_fd_sc_hs__fah_2	A	-	0.01943	0.01913	0.01908
	A	-	0.01571	0.01543	0.01538
	B	-	0.01716	0.01826	0.01945
	B	-	0.01112	0.01219	0.01342
	CI	(A * B) + (!A * !B)	0.00932	0.00937	0.00930
	CI	(A * B) + (!A * !B)	0.00729	0.00735	0.00730
	CI	(A * !B) + (!A * B)	0.00597	0.00613	0.00600
	CI	(A * !B) + (!A * B)	0.00698	0.00714	0.00718
sky130_fd_sc_hs__fah_4	A	-	0.02039	0.02034	0.02063
	A	-	0.01683	0.01677	0.01712
	B	-	0.01874	0.02013	0.02204
	B	-	0.01310	0.01348	0.01712
	CI	(A * B) + (!A * !B)	0.01320	0.01334	0.01325
	CI	(A * B) + (!A * !B)	0.01128	0.01141	0.01135
	CI	(A * !B) + (!A * B)	0.00908	0.00948	0.00896
	CI	(A * !B) + (!A * B)	0.00996	0.01035	0.01054

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.01392	0.01378	0.01362
	A	-	0.01766	0.01751	0.01732
	B	-	0.01190	0.01211	0.01552
	B	-	0.01738	0.01760	0.02097
	CI	(A * B) + (!A * !B)	0.00668	0.00663	0.00649
	CI	(A * B) + (!A * !B)	0.00860	0.00854	0.00844
	CI	(A * !B) + (!A * B)	0.00663	0.00663	0.00631
	CI	(A * !B) + (!A * B)	0.00581	0.00580	0.00546
sky130_fd_sc_hs__fah_2	A	-	0.01546	0.01547	0.01533
	A	-	0.01918	0.01917	0.01903
	B	-	0.01195	0.01237	0.01368
	B	-	0.01799	0.01841	0.02010
	CI	(A * B) + (!A * !B)	0.00749	0.00760	0.00756
	CI	(A * B) + (!A * !B)	0.00951	0.00962	0.00958
	CI	(A * !B) + (!A * B)	0.00694	0.00707	0.00681
	CI	(A * !B) + (!A * B)	0.00593	0.00606	0.00580
sky130_fd_sc_hs__fah_4	A	-	0.01661	0.01684	0.01657
	A	-	0.02026	0.02047	0.02049
	B	-	0.01591	0.01667	0.05318
	B	-	0.02156	0.02234	0.05879
	CI	(A * B) + (!A * !B)	0.01034	0.01069	0.01073
	CI	(A * B) + (!A * !B)	0.01228	0.01262	0.01265
	CI	(A * !B) + (!A * B)	0.01047	0.01079	0.01071
	CI	(A * !B) + (!A * B)	0.00960	0.00992	0.00954

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CIN	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fa_1	28.77120
sky130_fd_sc_hs__fa_2	30.36960
sky130_fd_sc_hs__fa_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CIN	COUT	SUM
sky130_fd_sc_hs__fa_1	0.00924	0.00932	0.00667	0.18863	0.18902
sky130_fd_sc_hs__fa_2	0.00986	0.00974	0.00722	0.35908	0.36059
sky130_fd_sc_hs__fa_4	0.00987	0.00998	0.00709	0.73343	0.73215

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.00026	0.00027
sky130_fd_sc_hs__fa_2	0.00000	0.00034	0.00035
sky130_fd_sc_hs__fa_4	0.00000	0.00049	0.00052

Delay Information

Delay(ns) to COUT rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (RR)	0.34372	1.77856	10.20390
	B->COUT (RR)	0.36158	1.78937	10.18970
	CIN->COUT (RR)	0.34413	1.78541	10.05840
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.33834	1.60075	10.30070
	B->COUT (RR)	0.33060	1.59693	10.27730
	CIN->COUT (RR)	0.31783	1.59681	10.17490
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.40807	1.55026	10.58180
	B->COUT (RR)	0.40154	1.54882	10.57760
	CIN->COUT (RR)	0.39776	1.57315	10.52550

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	1.40551	2.58513	9.03188
	B->COUT (FF)	1.24881	2.43551	8.91135
	CIN->COUT (FF)	1.21094	2.28381	8.39125
sky130_fd_sc_hs__fa_2	A->COUT (FF)	1.72575	2.94134	9.54627
	B->COUT (FF)	1.51990	2.74460	9.40278
	CIN->COUT (FF)	1.57600	2.68826	8.97707
sky130_fd_sc_hs__fa_4	A->COUT (FF)	2.29488	3.56864	10.42560
	B->COUT (FF)	2.17121	3.41868	10.32810
	CIN->COUT (FF)	2.16720	3.30696	9.81083

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	1.82560	3.47509	14.93700
	B->SUM (-R)	1.66648	3.32936	14.74560
	CIN->SUM (-R)	1.59722	3.14387	14.17330
sky130_fd_sc_hs__fa_2	A->SUM (-R)	2.34409	3.75333	15.31730
	B->SUM (-R)	2.10653	3.52932	15.09050
	CIN->SUM (-R)	2.17504	3.46689	14.66960
sky130_fd_sc_hs__fa_4	A->SUM (-R)	3.27399	4.51760	16.27030
	B->SUM (-R)	3.12415	4.34237	16.11190
	CIN->SUM (-R)	3.14227	4.22802	15.63490

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	1.76095	2.89522	9.10417
	B->SUM (-F)	1.64598	2.76452	9.08112
	CIN->SUM (-F)	1.55187	2.51667	8.37132
sky130_fd_sc_hs__fa_2	A->SUM (-F)	2.29695	3.49702	9.82972
	B->SUM (-F)	2.25476	3.42337	9.87357
	CIN->SUM (-F)	2.17699	3.18650	9.16012
sky130_fd_sc_hs__fa_4	A->SUM (-F)	3.11799	4.38611	11.00310
	B->SUM (-F)	3.03736	4.27253	11.01360
	CIN->SUM (-F)	2.97029	4.04544	10.26540

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00585	0.00586	0.00581
	A	0.00219	0.00219	0.00213
	B	0.00552	0.00553	0.00543
	B	0.00196	0.00196	0.00186
	CIN	0.00513	0.00506	0.00495
	CIN	0.00273	0.00266	0.00256
sky130_fd_sc_hs__fa_2	A	0.00753	0.00763	0.00759
	A	0.00353	0.00359	0.00355
	B	0.00715	0.00724	0.00717
	B	0.00337	0.00345	0.00338
	CIN	0.00681	0.00679	0.00672
	CIN	0.00411	0.00410	0.00403
sky130_fd_sc_hs__fa_4	A	0.01035	0.01065	0.01124
	A	0.00614	0.00644	0.00653
	B	0.01031	0.01058	0.01095
	B	0.00671	0.00699	0.00702
	CIN	0.00974	0.00992	0.01015
	CIN	0.00722	0.00740	0.00746

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00228	0.00230	0.00213
	A	0.00587	0.00591	0.00572
	B	0.00264	0.00259	0.00240
	B	0.00618	0.00615	0.00593
	CIN	0.00283	0.00282	0.00259
	CIN	0.00527	0.00525	0.00500
sky130_fd_sc_hs__fa_2	A	0.00361	0.00367	0.00343
	A	0.00751	0.00760	0.00736
	B	0.00397	0.00398	0.00373
	B	0.00771	0.00774	0.00747
	CIN	0.00415	0.00421	0.00389
	CIN	0.00695	0.00699	0.00667
sky130_fd_sc_hs__fa_4	A	0.00677	0.00701	0.00675
	A	0.01095	0.01123	0.01096
	B	0.00706	0.00723	0.00693
	B	0.01062	0.01078	0.01047
	CIN	0.00733	0.00755	0.00724
	CIN	0.00997	0.01018	0.00982

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00800	0.00802	0.00794
	A	0.00589	0.00593	0.00592
	B	0.00686	0.00685	0.00678
	B	0.00620	0.00617	0.00614
	CIN	0.00618	0.00613	0.00596
	CIN	0.00528	0.00526	0.00520
sky130_fd_sc_hs__fa_2	A	0.00973	0.00981	0.00984
	A	0.00753	0.00762	0.00765
	B	0.00865	0.00875	0.00877
	B	0.00773	0.00773	0.00776
	CIN	0.00804	0.00811	0.00798
	CIN	0.00697	0.00700	0.00697
sky130_fd_sc_hs__fa_4	A	0.01268	0.01291	0.01307
	A	0.01097	0.01124	0.01144
	B	0.01194	0.01211	0.01221
	B	0.01063	0.01079	0.01094
	CIN	0.01086	0.01104	0.01101
	CIN	0.01000	0.01019	0.01031

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00584	0.00584	0.00562
	A	0.00799	0.00798	0.00792
	B	0.00549	0.00551	0.00522
	B	0.00823	0.00827	0.00823
	CIN	0.00511	0.00504	0.00476
	CIN	0.00670	0.00661	0.00652
sky130_fd_sc_hs__fa_2	A	0.00751	0.00761	0.00735
	A	0.00954	0.00972	0.00971
	B	0.00712	0.00718	0.00689
	B	0.00942	0.00957	0.00960
	CIN	0.00680	0.00679	0.00649
	CIN	0.00831	0.00829	0.00828
sky130_fd_sc_hs__fa_4	A	0.01033	0.01063	0.01054
	A	0.01339	0.01374	0.01389
	B	0.01028	0.01055	0.01016
	B	0.01207	0.01232	0.01251
	CIN	0.00973	0.00991	0.00957
	CIN	0.01101	0.01113	0.01129

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT	
A	B	COUT	SUM
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__ha_1	15.98400
sky130_fd_sc_hs__ha_2	19.18080
sky130_fd_sc_hs__ha_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	A	B	COUT	SUM
sky130_fd_sc_hs__ha_1	0.00438	0.00426	0.18597	0.17821
sky130_fd_sc_hs__ha_2	0.00441	0.00478	0.35668	0.36578
sky130_fd_sc_hs__ha_4	0.00833	0.00779	0.68990	0.72557

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	0.00019	0.00021
sky130_fd_sc_hs__ha_2	0.00000	0.00028	0.00029
sky130_fd_sc_hs__ha_4	0.00000	0.00054	0.00056

Delay Information

Delay(ns) to COUT rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (RR)	0.29629	1.70389	9.96157
	B->COUT (RR)	0.29099	1.70168	9.81209
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.29492	1.55280	10.10460
	B->COUT (RR)	0.29043	1.55975	9.99539
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.31194	1.42123	10.17000
	B->COUT (RR)	0.29369	1.41605	10.02220

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.51667	1.57655	7.49562
	B->COUT (FF)	0.47563	1.52720	7.41070
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.63565	1.70677	7.94783
	B->COUT (FF)	0.59736	1.66429	7.87599
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.63194	1.65108	7.78317
	B->COUT (FF)	0.57210	1.58699	7.68623

Delay(ns) to SUM rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__ha_1	A->SUM (RR)	!B	0.29449	1.68561	9.78622
	A->SUM (FR)	B	0.79690	2.46892	13.28420
	B->SUM (RR)	!A	0.27445	1.66049	9.69768
	B->SUM (FR)	A	0.77094	2.44625	13.20200
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.29221	1.51125	10.01050
	A->SUM (FR)	B	1.01600	2.49425	13.90350
	B->SUM (RR)	!A	0.27748	1.49458	9.94796
	B->SUM (FR)	A	0.98213	2.45564	13.82770
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.31412	1.40564	10.15180
	A->SUM (FR)	B	1.02678	2.33214	13.73550
	B->SUM (RR)	!A	0.29136	1.37969	10.06630
	B->SUM (FR)	A	0.97627	2.28919	13.64290

Delay(ns) to SUM falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__ha_1	A->SUM (FF)	!B	0.89501	1.98413	8.16582
	A->SUM (RF)	B	0.49178	1.19771	4.22740
	B->SUM (FF)	!A	0.82680	1.82105	7.57389
	B->SUM (RF)	A	0.48612	1.19177	4.07237
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	1.27782	2.41263	8.84336
	A->SUM (RF)	B	0.65099	1.38152	4.59358
	B->SUM (FF)	!A	1.21236	2.24432	8.33836
	B->SUM (RF)	A	0.64621	1.38546	4.48197
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	1.23478	2.32853	8.80202
	A->SUM (RF)	B	0.68961	1.40385	4.70544
	B->SUM (FF)	!A	1.14592	2.13043	8.24676
	B->SUM (RF)	A	0.67027	1.39468	4.55620

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00426	0.00423	0.00419
	A	0.00224	0.00220	0.00216
	B	0.00407	0.00402	0.00397
	B	0.00234	0.00230	0.00224
sky130_fd_sc_hs__ha_2	A	0.00582	0.00591	0.00588
	A	0.00379	0.00388	0.00384
	B	0.00574	0.00578	0.00575
	B	0.00383	0.00389	0.00384
sky130_fd_sc_hs__ha_4	A	0.01081	0.01099	0.01107
	A	0.00714	0.00734	0.00737
	B	0.01027	0.01040	0.01043
	B	0.00721	0.00740	0.00738

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00227	0.00229	0.00211
	A	0.00429	0.00432	0.00409
	B	0.00251	0.00247	0.00226
	B	0.00423	0.00418	0.00393
sky130_fd_sc_hs__ha_2	A	0.00409	0.00419	0.00392
	A	0.00612	0.00622	0.00591
	B	0.00415	0.00419	0.00405
	B	0.00605	0.00609	0.00575
sky130_fd_sc_hs__ha_4	A	0.00732	0.00754	0.00715
	A	0.01100	0.01122	0.01068
	B	0.00775	0.00791	0.00799
	B	0.01077	0.01094	0.01036

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__ha_1	A	B	0.00227	0.00228	0.00244
	A	B	0.00429	0.00431	0.00430
	A	!B	0.00571	0.00573	0.00570
	A	!B	0.00198	0.00198	0.00196
	B	A	0.00252	0.00246	0.00261
	B	A	0.00424	0.00419	0.00415
	B	!A	0.00449	0.00448	0.00444
	B	!A	0.00139	0.00137	0.00134
sky130_fd_sc_hs__ha_2	A	B	0.00410	0.00420	0.00465
	A	B	0.00613	0.00623	0.00621
	A	!B	0.00745	0.00754	0.00756
	A	!B	0.00375	0.00383	0.00386
	B	A	0.00416	0.00420	0.00443
	B	A	0.00605	0.00610	0.00604
	B	!A	0.00649	0.00658	0.00657
	B	!A	0.00306	0.00314	0.00313
sky130_fd_sc_hs__ha_4	A	B	0.00733	0.00753	0.00795
	A	B	0.01103	0.01123	0.01131
	A	!B	0.01484	0.01501	0.01509
	A	!B	0.00716	0.00732	0.00742
	B	A	0.00779	0.00796	0.00862
	B	A	0.01080	0.01098	0.01100
	B	!A	0.01219	0.01231	0.01237
	B	!A	0.00588	0.00599	0.00606

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__ha_1	A	B	0.00426	0.00423	0.00402
	A	B	0.00224	0.00220	0.00199
	A	!B	0.00123	0.00127	0.00124
	A	!B	0.00484	0.00490	0.00485
	B	A	0.00407	0.00401	0.00379
	B	A	0.00234	0.00230	0.00206
	B	!A	0.00179	0.00181	0.00218
	B	!A	0.00486	0.00489	0.00484
sky130_fd_sc_hs__ha_2	A	B	0.00582	0.00583	0.00560
	A	B	0.00379	0.00389	0.00356
	A	!B	0.00260	0.00273	0.00275
	A	!B	0.00616	0.00632	0.00631
	B	A	0.00574	0.00577	0.00547
	B	A	0.00383	0.00388	0.00357
	B	!A	0.00290	0.00303	0.00313
	B	!A	0.00630	0.00643	0.00644
sky130_fd_sc_hs__ha_4	A	B	0.01081	0.01097	0.01056
	A	B	0.00713	0.00735	0.00686
	A	!B	0.00518	0.00547	0.00554
	A	!B	0.01263	0.01292	0.01298
	B	A	0.01027	0.01037	0.00989
	B	A	0.00721	0.00738	0.00685
	B	!A	0.00636	0.00659	0.00666
	B	!A	0.01266	0.01290	0.01293

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__bufinv_16	39.96000
sky130_fd_sc_hs__bufinv_8	20.77920
sky130_fd_sc_hs__inv_1	4.79520
sky130_fd_sc_hs__inv_16	27.17280
sky130_fd_sc_hs__inv_2	4.79520
sky130_fd_sc_hs__inv_4	7.99200
sky130_fd_sc_hs__inv_8	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__bufinv_16	0.00752	2.85892
sky130_fd_sc_hs__bufinv_8	0.00263	1.37210
sky130_fd_sc_hs__inv_1	0.00262	0.18888
sky130_fd_sc_hs__inv_16	0.03963	2.90439
sky130_fd_sc_hs__inv_2	0.00479	0.36693
sky130_fd_sc_hs__inv_4	0.00967	0.73334
sky130_fd_sc_hs__inv_8	0.01913	1.42148

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.00094	0.00098
sky130_fd_sc_hs__bufinv_8	0.00000	0.00045	0.00047
sky130_fd_sc_hs__inv_1	0.00000	0.00004	0.00004
sky130_fd_sc_hs__inv_16	0.00000	0.00060	0.00065
sky130_fd_sc_hs__inv_2	0.00000	0.00007	0.00008
sky130_fd_sc_hs__inv_4	0.00000	0.00015	0.00016
sky130_fd_sc_hs__inv_8	0.00000	0.00030	0.00033

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (FR)	0.62632	1.80964	13.29870
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.86251	2.14618	14.06890
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.16902	1.88250	13.48360
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.11628	1.29261	13.37460
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.12931	1.64751	13.29500
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.12323	1.51126	13.49600
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.11806	1.37256	13.30860

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.55152	1.17164	4.04758
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.61498	1.31064	4.42722
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.05775	0.78110	5.53134
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.04907	0.58871	5.52718
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.05118	0.71592	5.47957
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.05022	0.67605	5.57326
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.04961	0.62970	5.53386

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.03406	0.03484	0.03586
	A	0.04026	0.04104	0.04214
sky130_fd_sc_hs__bufinv_8	A	0.01778	0.01821	0.01864
	A	0.01990	0.02033	0.02074
sky130_fd_sc_hs__inv_1	A	-0.00033	-0.00035	-0.00035
	A	0.00182	0.00180	0.00183
sky130_fd_sc_hs__inv_16	A	-0.00706	-0.00723	-0.00664
	A	0.02536	0.02524	0.02624
sky130_fd_sc_hs__inv_2	A	-0.00087	-0.00088	-0.00085
	A	0.00306	0.00304	0.00309
sky130_fd_sc_hs__inv_4	A	-0.00168	-0.00170	-0.00161
	A	0.00626	0.00623	0.00643
sky130_fd_sc_hs__inv_8	A	-0.00329	-0.00334	-0.00311
	A	0.01236	0.01204	0.01253

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.04083	0.04179	0.04177
	A	0.03467	0.03576	0.03556
sky130_fd_sc_hs__bufinv_8	A	0.01973	0.02020	0.01997
	A	0.01762	0.01812	0.01785
sky130_fd_sc_hs__inv_1	A	0.00196	0.00195	0.00200
	A	-0.00018	-0.00020	-0.00020
sky130_fd_sc_hs__inv_16	A	0.02585	0.02573	0.02743
	A	-0.00647	-0.00684	-0.00593
sky130_fd_sc_hs__inv_2	A	0.00315	0.00314	0.00326
	A	-0.00076	-0.00077	-0.00075
sky130_fd_sc_hs__inv_4	A	0.00640	0.00641	0.00679
	A	-0.00150	-0.00154	-0.00143
sky130_fd_sc_hs__inv_8	A	0.01251	0.01250	0.01314
	A	-0.00312	-0.00325	-0.00291

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	x	0
0	1	0	0
x	1	1	1
1	0	0	0
1	x	1	1
1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__maj3_1	12.78720
sky130_fd_sc_hs__maj3_2	15.98400
sky130_fd_sc_hs__maj3_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__maj3_1	0.00482	0.00453	0.00472	0.18846
sky130_fd_sc_hs__maj3_2	0.00514	0.00492	0.00504	0.37844
sky130_fd_sc_hs__maj3_4	0.00936	0.00887	0.00925	0.73699

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__maj3_1	0.00000	0.00015	0.00018
sky130_fd_sc_hs__maj3_2	0.00000	0.00019	0.00022
sky130_fd_sc_hs__maj3_4	0.00000	0.00038	0.00044

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (RR)	0.31917	1.72958	10.06040
	B->X (RR)	0.32684	1.74810	9.92832
	C->X (RR)	0.33002	1.74386	10.05550
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.30853	1.54772	10.16080
	B->X (RR)	0.31317	1.57195	10.07460
	C->X (RR)	0.31665	1.55790	10.16860
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.31536	1.42371	10.27570
	B->X (RR)	0.31055	1.43336	10.13560
	C->X (RR)	0.31950	1.42974	10.26300

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	1.20641	2.34462	8.71785
	B->X (FF)	1.10832	2.12072	8.15407
	C->X (FF)	1.03236	2.17250	8.61104
sky130_fd_sc_hs__maj3_2	A->X (FF)	1.56429	2.72362	9.22586
	B->X (FF)	1.43983	2.45519	8.66684
	C->X (FF)	1.33137	2.48396	9.08167
sky130_fd_sc_hs__maj3_4	A->X (FF)	1.40186	2.51965	9.05464
	B->X (FF)	1.26540	2.24891	8.47800
	C->X (FF)	1.17935	2.29262	8.91498

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00736	0.00737	0.00731
	A	0.00207	0.00206	0.00201
	B	0.00625	0.00617	0.00596
	B	0.00198	0.00188	0.00168
	C	0.00693	0.00691	0.00673
	C	0.00231	0.00226	0.00210
sky130_fd_sc_hs__maj3_2	A	0.00892	0.00901	0.00899
	A	0.00321	0.00328	0.00328
	B	0.00808	0.00811	0.00794
	B	0.00343	0.00344	0.00327
	C	0.00874	0.00881	0.00867
	C	0.00375	0.00379	0.00367
sky130_fd_sc_hs__maj3_4	A	0.01636	0.01650	0.01649
	A	0.00641	0.00652	0.00653
	B	0.01438	0.01447	0.01422
	B	0.00622	0.00629	0.00604
	C	0.01585	0.01594	0.01573
	C	0.00695	0.00701	0.00681

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00144	0.00144	0.00141
	A	0.00675	0.00677	0.00671
	B	0.00197	0.00179	0.00171
	B	0.00627	0.00610	0.00601
	C	0.00213	0.00197	0.00188
	C	0.00686	0.00672	0.00661
sky130_fd_sc_hs__maj3_2	A	0.00309	0.00318	0.00319
	A	0.00883	0.00895	0.00894
	B	0.00326	0.00315	0.00289
	B	0.00799	0.00789	0.00782
	C	0.00346	0.00337	0.00333
	C	0.00865	0.00859	0.00852
sky130_fd_sc_hs__maj3_4	A	0.00571	0.00593	0.00547
	A	0.01568	0.01595	0.01597
	B	0.00602	0.00590	0.00588
	B	0.01429	0.01418	0.01414
	C	0.00649	0.00640	0.00639
	C	0.01565	0.01560	0.01554

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00179	0.00181	0.00178
	(B * C * X)	-0.00156	-0.00157	-0.00157
	(!B * !C * !X)	0.00155	0.00157	0.00156
	(!B * !C * !X)	-0.00173	-0.00175	-0.00174
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00171	0.00171	0.00171
	(B * C * X)	-0.00182	-0.00185	-0.00184
	(!B * !C * !X)	0.00141	0.00142	0.00141
	(!B * !C * !X)	-0.00207	-0.00208	-0.00207
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00314	0.00314	0.00314
	(B * C * X)	-0.00313	-0.00320	-0.00318
	(!B * !C * !X)	0.00270	0.00272	0.00270
	(!B * !C * !X)	-0.00355	-0.00357	-0.00355

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00179	-0.00178	-0.00178
	(B * C * X)	0.00158	0.00157	0.00157
	(!B * !C * !X)	-0.00154	-0.00157	-0.00156
	(!B * !C * !X)	0.00175	0.00176	0.00175
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00171	-0.00171	-0.00170
	(B * C * X)	0.00185	0.00186	0.00184
	(!B * !C * !X)	-0.00139	-0.00142	-0.00141
	(!B * !C * !X)	0.00207	0.00210	0.00208
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00314	-0.00314	-0.00314
	(B * C * X)	0.00319	0.00321	0.00318
	(!B * !C * !X)	-0.00266	-0.00272	-0.00270
	(!B * !C * !X)	0.00355	0.00358	0.00356

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00148	0.00148	0.00147
	(A * C * X)	-0.00109	-0.00109	-0.00108
	(!A * !C * !X)	0.00047	0.00047	0.00045
	(!A * !C * !X)	-0.00198	-0.00199	-0.00200
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00174	0.00176	0.00174
	(A * C * X)	-0.00104	-0.00105	-0.00104
	(!A * !C * !X)	0.00057	0.00057	0.00055
	(!A * !C * !X)	-0.00201	-0.00202	-0.00205
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00291	0.00290	0.00289
	(A * C * X)	-0.00219	-0.00217	-0.00216
	(!A * !C * !X)	0.00106	0.00107	0.00102
	(!A * !C * !X)	-0.00379	-0.00383	-0.00390

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00144	-0.00145	-0.00147
	(A * C * X)	0.00111	0.00111	0.00108
	(!A * !C * !X)	-0.00045	-0.00045	-0.00044
	(!A * !C * !X)	0.00200	0.00201	0.00200
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00171	-0.00172	-0.00174
	(A * C * X)	0.00108	0.00108	0.00105
	(!A * !C * !X)	-0.00054	-0.00055	-0.00054
	(!A * !C * !X)	0.00204	0.00206	0.00205
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00282	-0.00284	-0.00289
	(A * C * X)	0.00224	0.00224	0.00218
	(!A * !C * !X)	-0.00099	-0.00099	-0.00099
	(!A * !C * !X)	0.00390	0.00392	0.00390

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00152	0.00153	0.00152
	(A * B * X)	-0.00133	-0.00135	-0.00134
	(!A * !B * !X)	0.00082	0.00082	0.00081
	(!A * !B * !X)	-0.00196	-0.00197	-0.00198
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00176	0.00177	0.00176
	(A * B * X)	-0.00131	-0.00132	-0.00132
	(!A * !B * !X)	0.00101	0.00102	0.00100
	(!A * !B * !X)	-0.00194	-0.00195	-0.00195
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00302	0.00306	0.00301
	(A * B * X)	-0.00264	-0.00269	-0.00266
	(!A * !B * !X)	0.00186	0.00186	0.00183
	(!A * !B * !X)	-0.00370	-0.00371	-0.00374

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00150	-0.00151	-0.00151
	(A * B * X)	0.00135	0.00136	0.00134
	(!A * !B * !X)	-0.00080	-0.00081	-0.00081
	(!A * !B * !X)	0.00197	0.00199	0.00198
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00174	-0.00175	-0.00176
	(A * B * X)	0.00133	0.00134	0.00132
	(!A * !B * !X)	-0.00098	-0.00101	-0.00100
	(!A * !B * !X)	0.00195	0.00196	0.00195
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00299	-0.00300	-0.00301
	(A * B * X)	0.00269	0.00269	0.00266
	(!A * !B * !X)	-0.00181	-0.00183	-0.00183
	(!A * !B * !X)	0.00375	0.00375	0.00374

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A0	A1	S	Y
0	0	x	1
0	1	0	1
x	1	1	0
1	x	0	0
1	0	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2i_1	12.78720
sky130_fd_sc_hs__mux2i_2	20.77920
sky130_fd_sc_hs__mux2i_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	Y
sky130_fd_sc_hs__mux2i_1	0.00261	0.00246	0.00449	0.07394
sky130_fd_sc_hs__mux2i_2	0.00488	0.00518	0.00728	0.13861
sky130_fd_sc_hs__mux2i_4	0.00964	0.00963	0.01257	0.26351

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	0.00011	0.00012
sky130_fd_sc_hs__mux2i_2	0.00000	0.00020	0.00022
sky130_fd_sc_hs__mux2i_4	0.00000	0.00037	0.00042

Delay Information

Delay(ns) to Y rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__mux2i_1	A0->Y (FR)	-	0.61880	2.63619	13.70700
	A1->Y (FR)	-	0.55835	2.57365	13.64290
	S->Y (RR)	(A0 * !A1)	0.71714	2.46407	10.35170
	S->Y (FR)	(!A0 * A1)	0.66575	2.78985	14.26530
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.62906	2.39007	13.72990
	A1->Y (FR)	-	0.60264	2.31591	13.53590
	S->Y (RR)	(A0 * !A1)	0.73358	2.22763	10.27850
	S->Y (FR)	(!A0 * A1)	0.68557	2.55267	14.26720
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.55500	2.08539	13.53580
	A1->Y (FR)	-	0.54821	2.09394	13.67740
	S->Y (RR)	(A0 * !A1)	0.72178	2.08627	10.75670
	S->Y (FR)	(!A0 * A1)	0.61330	2.26097	14.06090

Delay(ns) to Y falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__mux2i_1	A0->Y (RF)	-	0.07938	0.78549	4.74030
	A1->Y (RF)	-	0.08045	0.80113	4.82731
	S->Y (FF)	(A0 * !A1)	0.39492	1.38249	6.62479
	S->Y (RF)	(!A0 * A1)	0.09111	0.78375	4.71499
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.08980	0.78803	4.95384
	A1->Y (RF)	-	0.08766	0.77803	4.90180
	S->Y (FF)	(A0 * !A1)	0.49916	1.48935	7.14691
	S->Y (RF)	(!A0 * A1)	0.09524	0.74604	4.67091
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.08350	0.73477	4.93100
	A1->Y (RF)	-	0.08927	0.76021	5.09334
	S->Y (FF)	(A0 * !A1)	0.49676	1.45277	7.02556
	S->Y (RF)	(!A0 * A1)	0.09524	0.70509	4.64355

Power Information

Internal switching power(pJ) to Y rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00065	0.00054	0.00052
	A0	-	0.00339	0.00330	0.00328
	A1	-	0.00047	0.00038	0.00036
	A1	-	0.00303	0.00293	0.00292
	S	(A0 * !A1)	0.00493	0.00479	0.00471
	S	(A0 * !A1)	0.00241	0.00225	0.00217
	S	(!A0 * A1)	0.00109	0.00094	0.00090
	S	(!A0 * A1)	0.00597	0.00581	0.00577
sky130_fd_sc_hs__mux2i_2	A0	-	0.00140	0.00118	0.00115
	A0	-	0.00674	0.00648	0.00645
	A1	-	0.00123	0.00100	0.00098
	A1	-	0.00660	0.00635	0.00634
	S	(A0 * !A1)	0.00831	0.00816	0.00805
	S	(A0 * !A1)	0.00507	0.00483	0.00473
	S	(!A0 * A1)	0.00261	0.00236	0.00231
	S	(!A0 * A1)	0.01087	0.01060	0.01053
sky130_fd_sc_hs__mux2i_4	A0	-	0.00152	0.00105	0.00103
	A0	-	0.01211	0.01163	0.01159
	A1	-	0.00152	0.00104	0.00101
	A1	-	0.01171	0.01121	0.01120
	S	(A0 * !A1)	0.01410	0.01383	0.01367
	S	(A0 * !A1)	0.00895	0.00861	0.00847
	S	(!A0 * A1)	0.00405	0.00367	0.00359
	S	(!A0 * A1)	0.01892	0.01849	0.01843

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00304	0.00303	0.00296
	A0	-	0.00046	0.00044	0.00038
	A1	-	0.00297	0.00295	0.00289
	A1	-	0.00045	0.00043	0.00038
	S	(A0 * !A1)	0.00246	0.00232	0.00221
	S	(A0 * !A1)	0.00499	0.00485	0.00476
	S	(!A0 * A1)	0.00610	0.00595	0.00584
	S	(!A0 * A1)	0.00122	0.00106	0.00095
sky130_fd_sc_hs__mux2i_2	A0	-	0.00647	0.00642	0.00632
	A0	-	0.00153	0.00147	0.00138
	A1	-	0.00635	0.00631	0.00622
	A1	-	0.00114	0.00107	0.00100
	S	(A0 * !A1)	0.00561	0.00543	0.00530
	S	(A0 * !A1)	0.00885	0.00867	0.00853
	S	(!A0 * A1)	0.01101	0.01081	0.01063
	S	(!A0 * A1)	0.00271	0.00247	0.00234
sky130_fd_sc_hs__mux2i_4	A0	-	0.01194	0.01179	0.01166
	A0	-	0.00208	0.00191	0.00178
	A1	-	0.01192	0.01180	0.01169
	A1	-	0.00196	0.00179	0.00168
	S	(A0 * !A1)	0.01049	0.01017	0.00994
	S	(A0 * !A1)	0.01550	0.01521	0.01498
	S	(!A0 * A1)	0.02008	0.01972	0.01944
	S	(!A0 * A1)	0.00517	0.00476	0.00451

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00095	0.00096	0.00095
	(A1 * S * !Y)	-0.00062	-0.00063	-0.00062
	(!A1 * S * Y)	0.00046	0.00046	0.00044
	(!A1 * S * Y)	-0.00107	-0.00109	-0.00109
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00171	0.00172	0.00172
	(A1 * S * !Y)	-0.00117	-0.00117	-0.00116
	(!A1 * S * Y)	0.00071	0.00071	0.00067
	(!A1 * S * Y)	-0.00207	-0.00211	-0.00214
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00334	0.00336	0.00335
	(A1 * S * !Y)	-0.00239	-0.00239	-0.00238
	(!A1 * S * Y)	0.00137	0.00136	0.00129
	(!A1 * S * Y)	-0.00421	-0.00428	-0.00431

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00091	-0.00093	-0.00095
	(A1 * S * !Y)	0.00066	0.00066	0.00063
	(!A1 * S * Y)	-0.00045	-0.00045	-0.00044
	(!A1 * S * Y)	0.00109	0.00109	0.00109
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00166	-0.00170	-0.00172
	(A1 * S * !Y)	0.00120	0.00120	0.00117
	(!A1 * S * Y)	-0.00066	-0.00066	-0.00065
	(!A1 * S * Y)	0.00214	0.00215	0.00214
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00324	-0.00330	-0.00335
	(A1 * S * !Y)	0.00246	0.00246	0.00240
	(!A1 * S * Y)	-0.00127	-0.00127	-0.00126
	(!A1 * S * Y)	0.00432	0.00433	0.00431

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00085	0.00085	0.00085
	(A0 * !S * !Y)	-0.00063	-0.00064	-0.00063
	(!A0 * !S * Y)	0.00039	0.00038	0.00036
	(!A0 * !S * Y)	-0.00105	-0.00107	-0.00109
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00177	0.00178	0.00177
	(A0 * !S * !Y)	-0.00128	-0.00129	-0.00127
	(!A0 * !S * Y)	0.00077	0.00077	0.00074
	(!A0 * !S * Y)	-0.00216	-0.00218	-0.00222
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00325	0.00327	0.00326
	(A0 * !S * !Y)	-0.00240	-0.00241	-0.00239
	(!A0 * !S * Y)	0.00125	0.00125	0.00118
	(!A0 * !S * Y)	-0.00424	-0.00429	-0.00436

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00080	-0.00083	-0.00085
	(A0 * !S * !Y)	0.00068	0.00066	0.00064
	(!A0 * !S * Y)	-0.00035	-0.00035	-0.00035
	(!A0 * !S * Y)	0.00109	0.00110	0.00109
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00167	-0.00174	-0.00177
	(A0 * !S * !Y)	0.00133	0.00133	0.00129
	(!A0 * !S * Y)	-0.00072	-0.00073	-0.00072
	(!A0 * !S * Y)	0.00222	0.00223	0.00222
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00311	-0.00324	-0.00326
	(A0 * !S * !Y)	0.00248	0.00249	0.00242
	(!A0 * !S * Y)	-0.00115	-0.00115	-0.00114
	(!A0 * !S * Y)	0.00437	0.00438	0.00436

Passive power(pJ) for S rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00360	0.00349	0.00343
	(A0 * A1 * !Y)	-0.00003	-0.00016	-0.00022
	(!A0 * !A1 * Y)	0.00362	0.00352	0.00345
	(!A0 * !A1 * Y)	-0.00002	-0.00014	-0.00019
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00544	0.00530	0.00522
	(A0 * A1 * !Y)	-0.00018	-0.00036	-0.00045
	(!A0 * !A1 * Y)	0.00544	0.00529	0.00520
	(!A0 * !A1 * Y)	-0.00021	-0.00034	-0.00042
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.00946	0.00930	0.00915
	(A0 * A1 * !Y)	-0.00024	-0.00051	-0.00062
	(!A0 * !A1 * Y)	0.00948	0.00931	0.00912
	(!A0 * !A1 * Y)	-0.00023	-0.00044	-0.00053

Passive power(pJ) for S falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00016	-0.00026	-0.00030
	(A0 * A1 * !Y)	0.00346	0.00338	0.00334
	(!A0 * !A1 * Y)	-0.00021	-0.00032	-0.00035
	(!A0 * !A1 * Y)	0.00344	0.00333	0.00329
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00028	-0.00041	-0.00045
	(A0 * A1 * !Y)	0.00536	0.00524	0.00518
	(!A0 * !A1 * Y)	-0.00027	-0.00044	-0.00048
	(!A0 * !A1 * Y)	0.00537	0.00523	0.00517
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00021	-0.00043	-0.00048
	(A0 * A1 * !Y)	0.00950	0.00934	0.00924
	(!A0 * !A1 * Y)	-0.00023	-0.00050	-0.00060
	(!A0 * !A1 * Y)	0.00937	0.00919	0.00916

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A0	A1	S	X
0	0	x	0
0	1	0	0
x	1	1	1
1	x	0	1
1	0	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2_1	14.38560
sky130_fd_sc_hs__mux2_2	17.58240
sky130_fd_sc_hs__mux2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	X
sky130_fd_sc_hs__mux2_1	0.00253	0.00299	0.00413	0.18881
sky130_fd_sc_hs__mux2_2	0.00233	0.00265	0.00495	0.35889
sky130_fd_sc_hs__mux2_4	0.00444	0.00448	0.00745	0.68049

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	0.00015	0.00016
sky130_fd_sc_hs__mux2_2	0.00000	0.00019	0.00021
sky130_fd_sc_hs__mux2_4	0.00000	0.00035	0.00038

Delay Information

Delay(ns) to X rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__mux2_1	A0->X (RR)	-	0.28193	1.66233	9.68545
	A1->X (RR)	-	0.28413	1.67178	9.72976
	S->X (RR)	(!A0 * A1)	0.27431	1.64929	9.77806
	S->X (FR)	(A0 * !A1)	0.63640	2.32608	12.97910
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.29780	1.54962	9.98543
	A1->X (RR)	-	0.29476	1.54949	9.99651
	S->X (RR)	(!A0 * A1)	0.28437	1.52244	10.04030
	S->X (FR)	(A0 * !A1)	0.62830	2.15819	12.98940
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.36323	1.49876	10.09300
	A1->X (RR)	-	0.35887	1.49516	10.08490
	S->X (RR)	(!A0 * A1)	0.36049	1.45328	10.11410
	S->X (FR)	(A0 * !A1)	0.82273	2.21739	13.46890

Delay(ns) to X falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__mux2_1	A0->X (FF)	-	0.98807	1.99760	7.92962
	A1->X (FF)	-	1.03277	2.04012	7.98150
	S->X (FF)	(!A0 * A1)	1.04666	2.16293	8.46255
	S->X (RF)	(A0 * !A1)	1.15923	1.91530	4.86199
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	1.24601	2.27363	8.36211
	A1->X (FF)	-	1.32759	2.35320	8.45430
	S->X (FF)	(!A0 * A1)	1.34203	2.48301	8.90126
	S->X (RF)	(A0 * !A1)	1.45541	2.23461	5.18870
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	1.34073	2.34860	8.47391
	A1->X (FF)	-	1.32338	2.33066	8.45909
	S->X (FF)	(!A0 * A1)	1.38055	2.49878	8.92239
	S->X (RF)	(A0 * !A1)	1.44645	2.22959	5.28851

Power Information

Internal switching power(pJ) to X rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00493	0.00488	0.00478
	A0	-	0.00236	0.00231	0.00222
	A1	-	0.00507	0.00503	0.00495
	A1	-	0.00227	0.00224	0.00215
	S	(A0 * !A1)	0.00462	0.00451	0.00440
	S	(A0 * !A1)	0.00655	0.00646	0.00637
	S	(!A0 * A1)	0.00800	0.00789	0.00781
	S	(!A0 * A1)	0.00332	0.00323	0.00314
sky130_fd_sc_hs__mux2_2	A0	-	0.00636	0.00643	0.00639
	A0	-	0.00384	0.00391	0.00388
	A1	-	0.00662	0.00667	0.00662
	A1	-	0.00399	0.00405	0.00400
	S	(A0 * !A1)	0.00587	0.00602	0.00599
	S	(A0 * !A1)	0.00827	0.00843	0.00843
	S	(!A0 * A1)	0.00973	0.00969	0.00961
	S	(!A0 * A1)	0.00463	0.00459	0.00452
sky130_fd_sc_hs__mux2_4	A0	-	0.01196	0.01206	0.01201
	A0	-	0.00743	0.00753	0.00749
	A1	-	0.01208	0.01216	0.01209
	A1	-	0.00747	0.00756	0.00751
	S	(A0 * !A1)	0.01105	0.01128	0.01142
	S	(A0 * !A1)	0.01461	0.01486	0.01502
	S	(!A0 * A1)	0.01719	0.01710	0.01697
	S	(!A0 * A1)	0.00912	0.00904	0.00892

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00227	0.00223	0.00228
	A0	-	0.00500	0.00496	0.00492
	A1	-	0.00260	0.00252	0.00247
	A1	-	0.00547	0.00539	0.00533
	S	(A0 * !A1)	0.00726	0.00715	0.00703
	S	(A0 * !A1)	0.00526	0.00512	0.00501
	S	(!A0 * A1)	0.00285	0.00279	0.00275
	S	(!A0 * A1)	0.00751	0.00743	0.00737
sky130_fd_sc_hs__mux2_2	A0	-	0.00337	0.00344	0.00346
	A0	-	0.00605	0.00614	0.00613
	A1	-	0.00375	0.00380	0.00382
	A1	-	0.00644	0.00651	0.00649
	S	(A0 * !A1)	0.00826	0.00831	0.00819
	S	(A0 * !A1)	0.00581	0.00583	0.00571
	S	(!A0 * A1)	0.00382	0.00385	0.00307
	S	(!A0 * A1)	0.00892	0.00893	0.00891
sky130_fd_sc_hs__mux2_4	A0	-	0.00788	0.00799	0.00799
	A0	-	0.01267	0.01277	0.01279
	A1	-	0.00804	0.00818	0.00820
	A1	-	0.01267	0.01279	0.01283
	S	(A0 * !A1)	0.01516	0.01540	0.01539
	S	(A0 * !A1)	0.01150	0.01169	0.01169
	S	(!A0 * A1)	0.00880	0.00885	0.00878
	S	(!A0 * A1)	0.01681	0.01685	0.01674

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00089	0.00089	0.00089
	(A1 * S * X)	-0.00052	-0.00053	-0.00052
	(!A1 * S * !X)	0.00040	0.00040	0.00037
	(!A1 * S * !X)	-0.00097	-0.00098	-0.00100
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00084	0.00084	0.00084
	(A1 * S * X)	-0.00056	-0.00056	-0.00056
	(!A1 * S * !X)	0.00044	0.00044	0.00041
	(!A1 * S * !X)	-0.00091	-0.00092	-0.00094
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00150	0.00152	0.00151
	(A1 * S * X)	-0.00110	-0.00112	-0.00110
	(!A1 * S * !X)	0.00067	0.00066	0.00063
	(!A1 * S * !X)	-0.00189	-0.00193	-0.00194

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00085	-0.00087	-0.00089
	(A1 * S * X)	0.00056	0.00056	0.00053
	(!A1 * S * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * S * !X)	0.00100	0.00100	0.00100
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00080	-0.00082	-0.00084
	(A1 * S * X)	0.00060	0.00059	0.00057
	(!A1 * S * !X)	-0.00039	-0.00040	-0.00040
	(!A1 * S * !X)	0.00094	0.00095	0.00094
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00145	-0.00148	-0.00151
	(A1 * S * X)	0.00115	0.00116	0.00111
	(!A1 * S * !X)	-0.00062	-0.00063	-0.00062
	(!A1 * S * !X)	0.00195	0.00196	0.00194

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00098	0.00098	0.00098
	(A0 * !S * X)	-0.00062	-0.00062	-0.00061
	(!A0 * !S * !X)	0.00036	0.00035	0.00035
	(!A0 * !S * !X)	-0.00118	-0.00118	-0.00119
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00090	0.00091	0.00090
	(A0 * !S * X)	-0.00055	-0.00055	-0.00054
	(!A0 * !S * !X)	0.00032	0.00032	0.00031
	(!A0 * !S * !X)	-0.00106	-0.00107	-0.00107
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00149	0.00149	0.00149
	(A0 * !S * X)	-0.00111	-0.00112	-0.00111
	(!A0 * !S * !X)	0.00055	0.00055	0.00053
	(!A0 * !S * !X)	-0.00198	-0.00201	-0.00203

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00095	-0.00097	-0.00098
	(A0 * !S * X)	0.00064	0.00063	0.00062
	(!A0 * !S * !X)	-0.00034	-0.00034	-0.00034
	(!A0 * !S * !X)	0.00119	0.00119	0.00119
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00085	-0.00088	-0.00090
	(A0 * !S * X)	0.00058	0.00058	0.00055
	(!A0 * !S * !X)	-0.00031	-0.00031	-0.00031
	(!A0 * !S * !X)	0.00107	0.00107	0.00107
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00142	-0.00148	-0.00149
	(A0 * !S * X)	0.00116	0.00116	0.00112
	(!A0 * !S * !X)	-0.00052	-0.00052	-0.00052
	(!A0 * !S * !X)	0.00204	0.00205	0.00203

Passive power(pJ) for S rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00356	0.00348	0.00342
	(A0 * A1 * X)	0.00029	0.00018	0.00013
	(!A0 * !A1 * !X)	0.00367	0.00359	0.00353
	(!A0 * !A1 * !X)	0.00044	0.00033	0.00028
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00364	0.00355	0.00348
	(A0 * A1 * X)	-0.00006	-0.00020	-0.00025
	(!A0 * !A1 * !X)	0.00352	0.00341	0.00333
	(!A0 * !A1 * !X)	-0.00019	-0.00031	-0.00036
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00566	0.00552	0.00543
	(A0 * A1 * X)	-0.00003	-0.00021	-0.00030
	(!A0 * !A1 * !X)	0.00578	0.00564	0.00552
	(!A0 * !A1 * !X)	0.00006	-0.00009	-0.00018

Passive power(pJ) for S falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00000	-0.00007	-0.00010
	(A0 * A1 * X)	0.00329	0.00319	0.00317
	(!A0 * !A1 * !X)	-0.00010	-0.00020	-0.00023
	(!A0 * !A1 * !X)	0.00313	0.00306	0.00303
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00030	-0.00041	-0.00045
	(A0 * A1 * X)	0.00340	0.00331	0.00327
	(!A0 * !A1 * !X)	-0.00018	-0.00029	-0.00033
	(!A0 * !A1 * !X)	0.00353	0.00343	0.00339
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00020	-0.00036	-0.00041
	(A0 * A1 * X)	0.00548	0.00536	0.00529
	(!A0 * !A1 * !X)	-0.00032	-0.00050	-0.00055
	(!A0 * !A1 * !X)	0.00539	0.00524	0.00517

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT						OUTPUT
A0	A1	A2	A3	S0	S1	X
0	0	0	0	x	x	0
0	x	0	1	0	x	0
x	0	x	1	1	0	0
x	x	x	1	1	1	1
0	0	1	x	x	0	0
0	x	1	x	0	1	1
0	x	1	0	1	1	0
0	1	0	x	0	x	0
0	1	x	x	1	0	1
0	1	x	0	1	1	0
0	1	1	x	0	0	0
1	0	0	x	0	0	1
1	x	0	0	x	1	0
1	0	x	0	1	x	0
1	x	0	1	0	1	0
1	x	1	x	0	x	1
1	1	0	x	x	0	1
1	1	1	x	1	0	1
1	1	1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux4_1	31.96800
sky130_fd_sc_hs__mux4_2	35.16480
sky130_fd_sc_hs__mux4_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A0	A1	A2	A3	S0	S1	X
sky130_fd_sc_hs__mux4_1	0.00213	0.00224	0.00222	0.00249	0.00777	0.00494	0.18603
sky130_fd_sc_hs__mux4_2	0.00243	0.00229	0.00239	0.00233	0.00886	0.00512	0.37594
sky130_fd_sc_hs__mux4_4	0.00420	0.00402	0.00422	0.00422	0.01218	0.00763	0.72971

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.00038	0.00041
sky130_fd_sc_hs__mux4_2	0.00000	0.00042	0.00045
sky130_fd_sc_hs__mux4_4	0.00000	0.00076	0.00082

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (RR)	0.44429	1.86544	10.35100
	A1->X (RR)	0.44138	1.86820	10.36370
	A2->X (RR)	0.44566	1.87827	10.41430
	A3->X (RR)	0.43164	1.86942	10.40280
	S0->X (-R)	0.93028	2.64472	13.75510
	S1->X (-R)	0.58266	2.30432	12.92400
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.46934	1.70418	10.47110
	A1->X (RR)	0.44268	1.69002	10.45470
	A2->X (RR)	0.42723	1.66652	10.41070
	A3->X (RR)	0.40381	1.65104	10.38840
	S0->X (-R)	0.90871	2.44769	13.75340
	S1->X (-R)	0.60134	2.14312	13.02840
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.52934	1.61953	10.57670
	A1->X (RR)	0.52156	1.62014	10.57780
	A2->X (RR)	0.52520	1.62069	10.58480
	A3->X (RR)	0.49281	1.60410	10.57570
	S0->X (-R)	1.19631	2.60936	14.43970
	S1->X (-R)	0.76595	2.18854	13.67560

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	1.96700	3.13926	9.58137
	A1->X (FF)	2.02321	3.19045	9.63321
	A2->X (FF)	2.16273	3.33601	9.79543
	A3->X (FF)	2.17078	3.33751	9.79512
	S0->X (-F)	2.02152	3.08497	9.25041
	S1->X (-F)	1.00633	2.02378	7.82889
sky130_fd_sc_hs__mux4_2	A0->X (FF)	2.64345	3.87759	10.51740
	A1->X (FF)	2.61897	3.85908	10.50050
	A2->X (FF)	2.50607	3.73329	10.35750
	A3->X (FF)	2.46259	3.69449	10.32250
	S0->X (-F)	2.53167	3.65157	9.96706
	S1->X (-F)	1.46576	2.56718	8.71129
sky130_fd_sc_hs__mux4_4	A0->X (FF)	2.40722	3.60705	10.28810
	A1->X (FF)	2.39171	3.59592	10.27610
	A2->X (FF)	2.49217	3.69913	10.37740
	A3->X (FF)	2.45335	3.65908	10.35070
	S0->X (-F)	2.35361	3.45279	9.86351
	S1->X (-F)	1.52394	2.59620	8.78093

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.00779	0.00782	0.00779
	A0	0.00492	0.00495	0.00492
	A1	0.00728	0.00731	0.00727
	A1	0.00432	0.00434	0.00431
	A2	0.00718	0.00721	0.00718
	A2	0.00429	0.00432	0.00429
	A3	0.00685	0.00688	0.00683
	A3	0.00369	0.00372	0.00368
	S0	0.01394	0.01364	0.01333
	S0	0.01416	0.01421	0.01405
	S1	0.00651	0.00634	0.00621
	S1	0.00639	0.00663	0.00682
sky130_fd_sc_hs__mux4_2	A0	0.00971	0.00984	0.00984
	A0	0.00645	0.00658	0.00660
	A1	0.00908	0.00921	0.00921
	A1	0.00573	0.00586	0.00588
	A2	0.00856	0.00869	0.00870
	A2	0.00540	0.00552	0.00555
	A3	0.00816	0.00828	0.00829
	A3	0.00494	0.00506	0.00509
	S0	0.01623	0.01591	0.01560
	S0	0.01510	0.01518	0.01512
	S1	0.00788	0.00779	0.00768
	S1	0.00789	0.00826	0.00857

sky130_fd_sc_hs__mux4_4	**A0**	0.01761	0.01788	0.01795
	A0	0.01205	0.01231	0.01244
	A1	0.01641	0.01666	0.01675
	A1	0.01079	0.01105	0.01117
	A2	0.01644	0.01670	0.01678
	A2	0.01077	0.01103	0.01116
	A3	0.01572	0.01598	0.01605
	A3	0.00982	0.01007	0.01018
	S0	0.02659	0.02618	0.02578
	S0	0.02499	0.02548	0.02545
	S1	0.01394	0.01391	0.01381
	S1	0.01406	0.01481	0.01589

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00284	0.00289	0.00256
	A0	0.00572	0.00578	0.00577
	A1	0.00346	0.00350	0.00323
	A1	0.00638	0.00643	0.00641
	A2	0.00411	0.00416	0.00386
	A2	0.00700	0.00706	0.00706
	A3	0.00450	0.00452	0.00423
	A3	0.00762	0.00765	0.00764
	S0	0.01285	0.01261	0.01230
	S0	0.01417	0.01405	0.01382
	S1	0.00646	0.00668	0.00694
	S1	0.00576	0.00563	0.00557

sky130_fd_sc_hs__mux4_2	**A0**	0.00506	0.00521	0.00527
	A0	0.00832	0.00848	0.00852
	A1	0.00562	0.00579	0.00586
	A1	0.00894	0.00911	0.00916
	A2	0.00543	0.00558	0.00563
	A2	0.00860	0.00875	0.00879
	A3	0.00577	0.00594	0.00599
	A3	0.00896	0.00912	0.00917
	S0	0.01506	0.01486	0.01466
	S0	0.01501	0.01510	0.01490
	S1	0.00818	0.00850	0.00889
	S1	0.00772	0.00767	0.00765
sky130_fd_sc_hs__mux4_4	**A0**	0.00914	0.00949	0.00961
	A0	0.01469	0.01507	0.01522
	A1	0.01042	0.01079	0.01091
	A1	0.01601	0.01638	0.01654
	A2	0.01029	0.01063	0.01076
	A2	0.01595	0.01631	0.01649
	A3	0.01128	0.01162	0.01174
	A3	0.01713	0.01747	0.01763
	S0	0.02473	0.02465	0.02443
	S0	0.02533	0.02554	0.02528
	S1	0.01458	0.01556	0.01673
	S1	0.01323	0.01327	0.01325

Passive power(pJ) for A0 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00395	0.00389	0.00381
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00161	0.00155	0.00148
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00071	0.00071	0.00071
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00080	-0.00081	-0.00081
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00456	0.00451	0.00443
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00184	0.00178	0.00172
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00079	0.00079	0.00078
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00078	-0.00079	-0.00079
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00738	0.00728	0.00711
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00285	0.00273	0.00260
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00132	0.00132	0.00131
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00166	-0.00169	-0.00168

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00082	0.00077	0.00076
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00317	0.00312	0.00309
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00070	-0.00071	-0.00071
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00081	0.00081	0.00081
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00126	0.00117	0.00113
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00398	0.00390	0.00385
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00078	-0.00079	-0.00078
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00080	0.00079	0.00079

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00183	0.00171	0.00166
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00636	0.00625	0.00618
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00130	-0.00132	-0.00131
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00168	0.00169	0.00168

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00345	0.00340	0.00332
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00104	0.00098	0.00091
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00064	0.00064	0.00064
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00091	-0.00091	-0.00091

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00393	0.00388	0.00380
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00115	0.00109	0.00101
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00068	0.00069	0.00068
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00086	-0.00087	-0.00087
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00621	0.00610	0.00595
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00166	0.00154	0.00141
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00128	0.00127	0.00126
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00160	-0.00163	-0.00162

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00142	0.00135	0.00131
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00384	0.00377	0.00372
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00063	-0.00064	-0.00064
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00092	0.00092	0.00091
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00178	0.00172	0.00170
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00459	0.00452	0.00448
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00067	-0.00069	-0.00068
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00087	0.00087	0.00087
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00304	0.00294	0.00289
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00762	0.00750	0.00741
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00125	-0.00127	-0.00126
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00162	0.00163	0.00162

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00076	0.00076	0.00075
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00077	-0.00078	-0.00078
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00415	0.00410	0.00402
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00179	0.00173	0.00167
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00087	0.00087	0.00087
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00077	-0.00079	-0.00078
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00428	0.00423	0.00415
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00170	0.00164	0.00158

sky130_fd_sc_hs__mux4_4	**(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)**	0.00139	0.00140	0.00139
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00154	-0.00158	-0.00157
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00757	0.00747	0.00730
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00296	0.00282	0.00270

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)**	-0.00075	-0.00076	-0.00075
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00078	0.00078	0.00078
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00133	0.00127	0.00125
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00369	0.00363	0.00360

sky130_fd_sc_hs__mux4_2	**(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)**	-0.00087	-0.00087	-0.00087
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00079	0.00079	0.00078
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00131	0.00123	0.00119
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00390	0.00382	0.00376
sky130_fd_sc_hs__mux4_4	**(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)**	-0.00138	-0.00140	-0.00139
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00157	0.00158	0.00157
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00173	0.00161	0.00155
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00636	0.00623	0.00617

Passive power(pJ) for A3 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00383	0.00377	0.00368
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00123	0.00116	0.00108
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00084	0.00085	0.00084
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00087	-0.00088	-0.00088
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00387	0.00382	0.00374
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00126	0.00120	0.00113
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00074	0.00074	0.00074
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00083	-0.00084	-0.00084
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00684	0.00671	0.00655
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00203	0.00189	0.00174
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00133	0.00134	0.00132
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00157	-0.00160	-0.00159

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00169	0.00161	0.00158
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00430	0.00422	0.00416
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00083	-0.00085	-0.00084
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00087	0.00088	0.00088
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00162	0.00156	0.00154
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00425	0.00418	0.00413
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00072	-0.00074	-0.00074
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00084	0.00084	0.00084

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00268	0.00254	0.00249
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00750	0.00737	0.00725
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00131	-0.00134	-0.00132
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00159	0.00160	0.00159

Passive power(pJ) for S0 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00513	0.00504	0.00492
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00057	-0.00071	-0.00080
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00771	0.00752	0.00728
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00276	0.00254	0.00231
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00738	0.00717	0.00699
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00093	0.00071	0.00054
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00523	0.00511	0.00502
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00044	-0.00058	-0.00068
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00722	0.00716	0.00692
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00224	0.00215	0.00191
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00702	0.00694	0.00671
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00208	0.00196	0.00172
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00714	0.00693	0.00674
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00069	0.00045	0.00029
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00754	0.00730	0.00714
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00112	0.00088	0.00071
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00747	0.00726	0.00703
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00253	0.00229	0.00204
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00777	0.00756	0.00737
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00133	0.00109	0.00091

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00572	0.00558	0.00549
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00006	-0.00004	-0.00015
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00811	0.00782	0.00758
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00339	0.00306	0.00282
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00796	0.00774	0.00754
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00150	0.00126	0.00109
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00555	0.00544	0.00534
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00001	-0.00012	-0.00022
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00846	0.00809	0.00783
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00393	0.00355	0.00327
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00808	0.00771	0.00745
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00364	0.00324	0.00296
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00802	0.00778	0.00757
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00137	0.00110	0.00091
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00810	0.00784	0.00764
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00153	0.00126	0.00106
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00760	0.00729	0.00706
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00297	0.00264	0.00237
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00844	0.00821	0.00800
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00207	0.00181	0.00165

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00812	0.00806	0.00789
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00006	-0.00018	-0.00029
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01224	0.01176	0.01136
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00563	0.00513	0.00470
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01205	0.01177	0.01145
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00243	0.00209	0.00182
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00797	0.00789	0.00775
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	-0.00007	-0.00020	-0.00032
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01247	0.01225	0.01184
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00560	0.00531	0.00488
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01183	0.01158	0.01121
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00509	0.00481	0.00436
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01161	0.01134	0.01104
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00215	0.00182	0.00158
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01194	0.01162	0.01137
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00263	0.00231	0.00203
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01187	0.01140	0.01100
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00531	0.00480	0.00435
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01272	0.01241	0.01212
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00318	0.00281	0.00253

Passive power(pJ) for S0 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__mux4_1	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00041	0.00026	0.00017
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00611	0.00598	0.00590
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00350	0.00341	0.00320
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00844	0.00837	0.00818
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00166	0.00141	0.00132
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00810	0.00788	0.00778
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00027	0.00013	0.00005
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00594	0.00581	0.00575
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00327	0.00319	0.00297
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00825	0.00818	0.00799
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00344	0.00336	0.00316
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00840	0.00832	0.00815
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00116	0.00091	0.00082
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00760	0.00738	0.00728
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00071	0.00047	0.00040
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00712	0.00691	0.00680
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00372	0.00363	0.00345
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00867	0.00859	0.00842
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00122	0.00098	0.00091
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00766	0.00746	0.00736

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00050	-0.00063	-0.00069
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00512	0.00502	0.00495
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00261	0.00256	0.00237
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00733	0.00730	0.00713
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00083	0.00057	0.00049
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00728	0.00705	0.00696
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00040	-0.00054	-0.00059
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00515	0.00503	0.00495
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00297	0.00299	0.00278
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00753	0.00753	0.00735
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00331	0.00331	0.00311
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00777	0.00777	0.00758
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00053	0.00025	0.00015
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00718	0.00692	0.00681
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00041	0.00013	0.00003
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00698	0.00672	0.00660
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00308	0.00303	0.00285
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00774	0.00769	0.00753
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00031	0.00006	-0.00002
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00667	0.00645	0.00633

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00070	-0.00083	-0.00092
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00745	0.00736	0.00727
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00500	0.00504	0.00470
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01162	0.01168	0.01139
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00106	0.00071	0.00057
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01066	0.01034	0.01019
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00061	-0.00074	-0.00083
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00743	0.00735	0.00723
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00454	0.00459	0.00428
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01142	0.01150	0.01124
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00514	0.00518	0.00487
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01192	0.01199	0.01172
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00095	0.00062	0.00049
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01037	0.01009	0.00995
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00055	0.00023	0.00012
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00987	0.00957	0.00943
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00534	0.00536	0.00504
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01193	0.01198	0.01167
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00032	-0.00003	-0.00016
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00988	0.00955	0.00941

Passive power(pJ) for S1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A1 * A3 * S0 * X)	0.00339	0.00328	0.00321
	(A1 * A3 * S0 * X)	-0.00016	-0.00027	-0.00033
	(A0 * A2 * !S0 * X)	0.00339	0.00328	0.00321
	(A0 * A2 * !S0 * X)	-0.00016	-0.00028	-0.00033
	(!A1 * !A3 * S0 * !X)	0.00342	0.00329	0.00324
	(!A1 * !A3 * S0 * !X)	-0.00012	-0.00024	-0.00029
	(!A0 * !A2 * !S0 * !X)	0.00341	0.00329	0.00324
	(!A0 * !A2 * !S0 * !X)	-0.00012	-0.00024	-0.00029
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00358	0.00348	0.00342
	(A1 * A3 * S0 * X)	-0.00011	-0.00022	-0.00027
	(A0 * A2 * !S0 * X)	0.00358	0.00348	0.00342
	(A0 * A2 * !S0 * X)	-0.00011	-0.00022	-0.00027
	(!A1 * !A3 * S0 * !X)	0.00348	0.00337	0.00332
	(!A1 * !A3 * S0 * !X)	-0.00015	-0.00028	-0.00032
	(!A0 * !A2 * !S0 * !X)	0.00348	0.00337	0.00332
	(!A0 * !A2 * !S0 * !X)	-0.00015	-0.00028	-0.00032
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00522	0.00511	0.00502
	(A1 * A3 * S0 * X)	-0.00007	-0.00021	-0.00028
	(A0 * A2 * !S0 * X)	0.00522	0.00511	0.00502
	(A0 * A2 * !S0 * X)	-0.00007	-0.00021	-0.00028
	(!A1 * !A3 * S0 * !X)	0.00502	0.00488	0.00482
	(!A1 * !A3 * S0 * !X)	-0.00026	-0.00041	-0.00047
	(!A0 * !A2 * !S0 * !X)	0.00502	0.00488	0.00482
	(!A0 * !A2 * !S0 * !X)	-0.00025	-0.00041	-0.00047

Passive power(pJ) for S1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	(A1 * A3 * S0 * X)	-0.00036	-0.00043	-0.00046
	(A1 * A3 * S0 * X)	0.00317	0.00310	0.00308
	(A0 * A2 * !S0 * X)	-0.00036	-0.00043	-0.00046
	(A0 * A2 * !S0 * X)	0.00317	0.00310	0.00308
	(!A1 * !A3 * S0 * !X)	-0.00040	-0.00048	-0.00050
	(!A1 * !A3 * S0 * !X)	0.00313	0.00305	0.00303
	(!A0 * !A2 * !S0 * !X)	-0.00040	-0.00048	-0.00050
	(!A0 * !A2 * !S0 * !X)	0.00313	0.00305	0.00303
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00038	-0.00045	-0.00048
	(A1 * A3 * S0 * X)	0.00329	0.00323	0.00321
	(A0 * A2 * !S0 * X)	-0.00038	-0.00045	-0.00048
	(A0 * A2 * !S0 * X)	0.00329	0.00323	0.00321
	(!A1 * !A3 * S0 * !X)	-0.00035	-0.00042	-0.00043
	(!A1 * !A3 * S0 * !X)	0.00330	0.00323	0.00320
	(!A0 * !A2 * !S0 * !X)	-0.00035	-0.00042	-0.00043
	(!A0 * !A2 * !S0 * !X)	0.00330	0.00323	0.00320
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00064	-0.00074	-0.00077
	(A1 * A3 * S0 * X)	0.00468	0.00457	0.00453
	(A0 * A2 * !S0 * X)	-0.00064	-0.00074	-0.00077
	(A0 * A2 * !S0 * X)	0.00468	0.00457	0.00453
	(!A1 * !A3 * S0 * !X)	-0.00045	-0.00056	-0.00059
	(!A1 * !A3 * S0 * !X)	0.00486	0.00474	0.00470
	(!A0 * !A2 * !S0 * !X)	-0.00045	-0.00056	-0.00059
	(!A0 * !A2 * !S0 * !X)	0.00486	0.00474	0.00470

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A_N	B	Y
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2b_1	7.99200
sky130_fd_sc_hs__nand2b_2	11.18880
sky130_fd_sc_hs__nand2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	Y
sky130_fd_sc_hs__nand2b_1	0.00213	0.00252	0.18068
sky130_fd_sc_hs__nand2b_2	0.00240	0.00473	0.35974
sky130_fd_sc_hs__nand2b_4	0.00352	0.00727	0.37910

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.00008	0.00011
sky130_fd_sc_hs__nand2b_2	0.00000	0.00014	0.00020
sky130_fd_sc_hs__nand2b_4	0.00000	0.00021	0.00025

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2b_1	A_N->Y (RR)	0.25758	1.63499	9.65249
	B->Y (FR)	0.22765	1.93048	13.33640
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.21788	1.41738	9.62570
	B->Y (FR)	0.20864	1.74952	13.57360
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.27719	1.48311	9.77837
	B->Y (FR)	0.29503	1.81668	13.60820

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2b_1	A_N->Y (FF)	0.37605	1.44345	7.42196
	B->Y (RF)	0.08181	0.87287	6.02559
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.44682	1.51939	7.95704
	B->Y (RF)	0.08345	0.82126	6.11631
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.34929	1.33373	6.89511
	B->Y (RF)	0.07890	0.69500	5.05082

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00387	0.00378	0.00375
	A_N	0.00209	0.00202	0.00199
	B	0.00017	0.00014	0.00014
	B	0.00216	0.00212	0.00212
sky130_fd_sc_hs__nand2b_2	A_N	0.00505	0.00503	0.00503
	A_N	0.00323	0.00321	0.00322
	B	0.00004	-0.00005	-0.00003
	B	0.00389	0.00380	0.00385
sky130_fd_sc_hs__nand2b_4	A_N	0.00685	0.00681	0.00685
	A_N	0.00424	0.00419	0.00425
	B	-0.00010	-0.00030	-0.00029
	B	0.00578	0.00559	0.00564

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00208	0.00202	0.00207
	A_N	0.00386	0.00379	0.00377
	B	0.00253	0.00252	0.00257
	B	0.00055	0.00053	0.00054
sky130_fd_sc_hs__nand2b_2	A_N	0.00357	0.00353	0.00356
	A_N	0.00541	0.00539	0.00538
	B	0.00486	0.00484	0.00485
	B	0.00099	0.00096	0.00098
sky130_fd_sc_hs__nand2b_4	A_N	0.00615	0.00599	0.00643
	A_N	0.00878	0.00867	0.00868
	B	0.00850	0.00848	0.00854
	B	0.00257	0.00251	0.00254

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00300	0.00290	0.00285
	(!B * Y)	0.00111	0.00101	0.00096
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00413	0.00403	0.00396
	(!B * Y)	0.00203	0.00192	0.00185
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00511	0.00495	0.00485
	(!B * Y)	0.00205	0.00187	0.00179

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00015	0.00007	0.00003
	(!B * Y)	0.00204	0.00196	0.00193
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00056	0.00046	0.00040
	(!B * Y)	0.00268	0.00258	0.00251
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00095	0.00082	0.00073
	(!B * Y)	0.00405	0.00391	0.00381

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00090	0.00091	0.00090
	(A_N * Y)	-0.00089	-0.00090	-0.00089
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00152	0.00153	0.00152
	(A_N * Y)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00308	0.00309	0.00307
	(A_N * Y)	-0.00197	-0.00198	-0.00197

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00089	-0.00091	-0.00090
	(A_N * Y)	0.00089	0.00090	0.00090
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00151	-0.00153	-0.00152
	(A_N * Y)	0.00188	0.00188	0.00186
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00304	-0.00309	-0.00307
	(A_N * Y)	0.00198	0.00199	0.00197

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2_1	4.79520
sky130_fd_sc_hs__nand2_2	7.99200
sky130_fd_sc_hs__nand2_4	14.38560
sky130_fd_sc_hs__nand2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nand2_1	0.00256	0.00244	0.18538
sky130_fd_sc_hs__nand2_2	0.00488	0.00475	0.36427
sky130_fd_sc_hs__nand2_4	0.00750	0.00709	0.37260
sky130_fd_sc_hs__nand2_8	0.01431	0.01400	0.72388

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.00005	0.00008
sky130_fd_sc_hs__nand2_2	0.00000	0.00010	0.00016
sky130_fd_sc_hs__nand2_4	0.00000	0.00016	0.00022
sky130_fd_sc_hs__nand2_8	0.00000	0.00032	0.00044

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (FR)	0.17706	1.88052	13.36390
	B->Y (FR)	0.21653	1.92019	13.40980
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.15272	1.67318	13.33530
	B->Y (FR)	0.20412	1.72307	13.35890
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.21993	1.73562	13.54130
	B->Y (FR)	0.31876	1.84301	13.61650
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.17313	1.54718	13.35440
	B->Y (FR)	0.26779	1.62510	13.29170

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.07050	0.88953	6.27416
	B->Y (RF)	0.07606	0.87072	6.07425
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.06791	0.84139	6.46371
	B->Y (RF)	0.07811	0.82915	6.22260
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.06500	0.70809	5.29522
	B->Y (RF)	0.07340	0.69968	5.06723
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.06021	0.66487	5.43388
	B->Y (RF)	0.06860	0.64764	5.02385

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00023	-0.00026	-0.00025
	A	0.00190	0.00188	0.00189
	B	0.00001	-0.00003	-0.00003
	B	0.00252	0.00248	0.00248
sky130_fd_sc_hs__nand2_2	A	-0.00071	-0.00076	-0.00073
	A	0.00341	0.00336	0.00345
	B	0.00010	-0.00001	0.00000
	B	0.00505	0.00494	0.00499
sky130_fd_sc_hs__nand2_4	A	-0.00141	-0.00155	-0.00150
	A	0.00491	0.00475	0.00486
	B	0.00013	-0.00012	-0.00010
	B	0.00801	0.00778	0.00781
sky130_fd_sc_hs__nand2_8	A	-0.00313	-0.00326	-0.00318
	A	0.00910	0.00890	0.00915
	B	-0.00035	-0.00073	-0.00069
	B	0.01525	0.01484	0.01495

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00207	0.00207	0.00237
	A	-0.00006	-0.00008	-0.00008
	B	0.00248	0.00249	0.00253
	B	-0.00005	-0.00007	-0.00007
sky130_fd_sc_hs__nand2_2	A	0.00408	0.00408	0.00431
	A	-0.00002	-0.00007	-0.00003
	B	0.00502	0.00498	0.00528
	B	0.00000	-0.00004	-0.00002
sky130_fd_sc_hs__nand2_4	A	0.00760	0.00755	0.00762
	A	0.00133	0.00123	0.00127
	B	0.00939	0.00937	0.00941
	B	0.00135	0.00128	0.00130
sky130_fd_sc_hs__nand2_8	A	0.01209	0.01197	0.01229
	A	-0.00009	-0.00025	-0.00012
	B	0.01586	0.01581	0.01598
	B	0.00000	-0.00014	-0.00005

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00033	0.00033	0.00032
	(!B * Y)	-0.00112	-0.00112	-0.00113
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00063	0.00063	0.00060
	(!B * Y)	-0.00214	-0.00216	-0.00221
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00125	0.00124	0.00118
	(!B * Y)	-0.00263	-0.00264	-0.00273
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00246	0.00245	0.00235
	(!B * Y)	-0.00503	-0.00506	-0.00524

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00032	-0.00032	-0.00032
	(!B * Y)	0.00113	0.00115	0.00113
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00059	-0.00059	-0.00058
	(!B * Y)	0.00222	0.00224	0.00221
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00115	-0.00115	-0.00115
	(!B * Y)	0.00272	0.00273	0.00273
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00230	-0.00229	-0.00228
	(!B * Y)	0.00526	0.00526	0.00524

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00075	0.00075	0.00074
	(!A * Y)	-0.00095	-0.00095	-0.00095
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00143	0.00144	0.00143
	(!A * Y)	-0.00185	-0.00185	-0.00185
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00285	0.00285	0.00284
	(!A * Y)	-0.00195	-0.00196	-0.00195
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.00568	0.00565	0.00566
	(!A * Y)	-0.00390	-0.00390	-0.00390

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00073	-0.00075	-0.00074
	(!A * Y)	0.00095	0.00096	0.00095
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00142	-0.00144	-0.00143
	(!A * Y)	0.00186	0.00187	0.00185
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00280	-0.00285	-0.00284
	(!A * Y)	0.00196	0.00197	0.00195
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.00556	-0.00565	-0.00566
	(!A * Y)	0.00390	0.00395	0.00391

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A_N	B	C	Y
x	0	x	1
x	1	0	1
0	1	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3b_1	9.59040
sky130_fd_sc_hs__nand3b_2	14.38560
sky130_fd_sc_hs__nand3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	Y
sky130_fd_sc_hs__nand3b_1	0.00198	0.00253	0.00245	0.18606
sky130_fd_sc_hs__nand3b_2	0.00237	0.00479	0.00477	0.37214
sky130_fd_sc_hs__nand3b_4	0.00332	0.00689	0.00695	0.35881

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	0.00009	0.00016
sky130_fd_sc_hs__nand3b_2	0.00000	0.00015	0.00028
sky130_fd_sc_hs__nand3b_4	0.00000	0.00023	0.00035

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3b_1	A_N->Y (RR)	0.27584	1.63618	9.62334
	B->Y (FR)	0.26161	1.97437	13.56530
	C->Y (FR)	0.29091	1.99853	13.51690
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.24327	1.44171	9.71735
	B->Y (FR)	0.22868	1.75346	13.52910
	C->Y (FR)	0.26513	1.79761	13.62000
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.29830	1.51396	9.72995
	B->Y (FR)	0.30749	1.80349	13.33760
	C->Y (FR)	0.40071	1.92901	13.61310

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3b_1	A_N->Y (FF)	0.39110	1.53262	8.08464
	B->Y (RF)	0.11224	1.00093	6.87095
	C->Y (RF)	0.11859	0.95746	6.47573
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.48698	1.62460	8.88792
	B->Y (RF)	0.11452	0.95995	7.20471
	C->Y (RF)	0.11886	0.90434	6.68232
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.38957	1.44420	7.79264
	B->Y (RF)	0.11898	0.87322	6.37373
	C->Y (RF)	0.12362	0.77787	5.44077

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00372	0.00364	0.00361
	A_N	0.00219	0.00212	0.00209
	B	0.00030	0.00024	0.00024
	B	0.00235	0.00228	0.00230
	C	0.00052	0.00047	0.00047
	C	0.00282	0.00277	0.00275
sky130_fd_sc_hs__nand3b_2	A_N	0.00524	0.00521	0.00521
	A_N	0.00353	0.00351	0.00352
	B	0.00025	0.00010	0.00011
	B	0.00436	0.00420	0.00426
	C	0.00072	0.00062	0.00061
	C	0.00558	0.00545	0.00549
sky130_fd_sc_hs__nand3b_4	A_N	0.00704	0.00707	0.00717
	A_N	0.00447	0.00449	0.00460
	B	0.00023	-0.00018	-0.00016
	B	0.00597	0.00561	0.00566
	C	0.00112	0.00092	0.00091
	C	0.00858	0.00837	0.00838

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00270	0.00264	0.00266
	A_N	0.00424	0.00416	0.00415
	B	0.00312	0.00312	0.00310
	B	0.00107	0.00105	0.00105
	C	0.00350	0.00350	0.00373
	C	0.00115	0.00113	0.00114
sky130_fd_sc_hs__nand3b_2	A_N	0.00482	0.00476	0.00480
	A_N	0.00653	0.00650	0.00649
	B	0.00591	0.00591	0.00588
	B	0.00178	0.00174	0.00177
	C	0.00674	0.00674	0.00672
	C	0.00176	0.00172	0.00175
sky130_fd_sc_hs__nand3b_4	A_N	0.00658	0.00651	0.00659
	A_N	0.00917	0.00908	0.00907
	B	0.00860	0.00857	0.00882
	B	0.00278	0.00273	0.00276
	C	0.01077	0.01075	0.01075
	C	0.00303	0.00298	0.00300

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(B * !C * Y)	0.00284	0.00275	0.00269
	(B * !C * Y)	0.00108	0.00098	0.00094
	(!B * Y)	0.00282	0.00274	0.00269
	(!B * Y)	0.00108	0.00098	0.00094
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00431	0.00420	0.00414
	(B * !C * Y)	0.00206	0.00196	0.00189
	(!B * Y)	0.00424	0.00414	0.00408
	(!B * Y)	0.00206	0.00196	0.00189
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00516	0.00501	0.00491
	(B * !C * Y)	0.00201	0.00184	0.00176
	(!B * Y)	0.00506	0.00490	0.00482
	(!B * Y)	0.00198	0.00182	0.00174

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(B * !C * Y)	0.00024	0.00017	0.00012
	(B * !C * Y)	0.00205	0.00197	0.00191
	(!B * Y)	0.00024	0.00017	0.00014
	(!B * Y)	0.00200	0.00192	0.00189
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00051	0.00041	0.00033
	(B * !C * Y)	0.00285	0.00275	0.00263
	(!B * Y)	0.00058	0.00048	0.00042
	(!B * Y)	0.00278	0.00268	0.00261
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00103	0.00090	0.00078
	(B * !C * Y)	0.00437	0.00423	0.00404
	(!B * Y)	0.00111	0.00100	0.00091
	(!B * Y)	0.00422	0.00409	0.00400

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(A_N * C * Y)	0.00084	0.00084	0.00083
	(A_N * C * Y)	-0.00092	-0.00092	-0.00092
	(A_N * !C * Y)	0.00056	0.00056	0.00056
	(A_N * !C * Y)	-0.00092	-0.00093	-0.00092
	(!A_N * !C * Y)	0.00037	0.00037	0.00037
	(!A_N * !C * Y)	-0.00109	-0.00109	-0.00109
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00154	0.00155	0.00154
	(A_N * C * Y)	-0.00191	-0.00191	-0.00191
	(A_N * !C * Y)	0.00099	0.00100	0.00099
	(A_N * !C * Y)	-0.00191	-0.00192	-0.00191
	(!A_N * !C * Y)	0.00079	0.00079	0.00080
	(!A_N * !C * Y)	-0.00204	-0.00204	-0.00205
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00311	0.00314	0.00312
	(A_N * C * Y)	-0.00185	-0.00186	-0.00185
	(A_N * !C * Y)	0.00185	0.00185	0.00184
	(A_N * !C * Y)	-0.00204	-0.00204	-0.00203
	(!A_N * !C * Y)	0.00149	0.00149	0.00152
	(!A_N * !C * Y)	-0.00224	-0.00223	-0.00223

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(A_N * C * Y)	-0.00083	-0.00084	-0.00083
	(A_N * C * Y)	0.00092	0.00093	0.00093
	(A_N * !C * Y)	-0.00056	-0.00056	-0.00056
	(A_N * !C * Y)	0.00093	0.00093	0.00093
	(!A_N * !C * Y)	-0.00035	-0.00035	-0.00036
	(!A_N * !C * Y)	0.00112	0.00112	0.00110
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00154	-0.00155	-0.00154
	(A_N * C * Y)	0.00192	0.00193	0.00191
	(A_N * !C * Y)	-0.00099	-0.00100	-0.00099
	(A_N * !C * Y)	0.00192	0.00193	0.00192
	(!A_N * !C * Y)	-0.00076	-0.00075	-0.00077
	(!A_N * !C * Y)	0.00212	0.00211	0.00207
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00308	-0.00314	-0.00312
	(A_N * C * Y)	0.00186	0.00187	0.00186
	(A_N * !C * Y)	-0.00185	-0.00185	-0.00184
	(A_N * !C * Y)	0.00208	0.00208	0.00207
	(!A_N * !C * Y)	-0.00141	-0.00144	-0.00147
	(!A_N * !C * Y)	0.00229	0.00232	0.00226

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(A_N * B * Y)	0.00071	0.00071	0.00071
	(A_N * B * Y)	-0.00091	-0.00091	-0.00091
	(A_N * !B * Y)	0.00072	0.00072	0.00072
	(A_N * !B * Y)	-0.00091	-0.00091	-0.00091
	(!A_N * !B * Y)	0.00068	0.00069	0.00068
	(!A_N * !B * Y)	-0.00094	-0.00094	-0.00094
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00155	0.00155	0.00155
	(A_N * B * Y)	-0.00183	-0.00183	-0.00182
	(A_N * !B * Y)	0.00157	0.00156	0.00156
	(A_N * !B * Y)	-0.00183	-0.00183	-0.00183
	(!A_N * !B * Y)	0.00136	0.00137	0.00136
	(!A_N * !B * Y)	-0.00202	-0.00203	-0.00202
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00295	0.00295	0.00294
	(A_N * B * Y)	-0.00190	-0.00190	-0.00189
	(A_N * !B * Y)	0.00295	0.00295	0.00293
	(A_N * !B * Y)	-0.00194	-0.00194	-0.00192
	(!A_N * !B * Y)	0.00265	0.00268	0.00267
	(!A_N * !B * Y)	-0.00218	-0.00220	-0.00217

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	(A_N * B * Y)	-0.00070	-0.00071	-0.00071
	(A_N * B * Y)	0.00092	0.00091	0.00091
	(A_N * !B * Y)	-0.00071	-0.00072	-0.00072
	(A_N * !B * Y)	0.00091	0.00092	0.00091
	(!A_N * !B * Y)	-0.00067	-0.00069	-0.00068
	(!A_N * !B * Y)	0.00094	0.00095	0.00094
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00152	-0.00155	-0.00155
	(A_N * B * Y)	0.00183	0.00184	0.00183
	(A_N * !B * Y)	-0.00153	-0.00156	-0.00156
	(A_N * !B * Y)	0.00183	0.00185	0.00183
	(!A_N * !B * Y)	-0.00134	-0.00137	-0.00136
	(!A_N * !B * Y)	0.00202	0.00204	0.00202
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00287	-0.00295	-0.00294
	(A_N * B * Y)	0.00191	0.00190	0.00189
	(A_N * !B * Y)	-0.00287	-0.00295	-0.00293
	(A_N * !B * Y)	0.00196	0.00194	0.00192
	(!A_N * !B * Y)	-0.00261	-0.00268	-0.00267
	(!A_N * !B * Y)	0.00223	0.00220	0.00217

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	Y
0	x	x	1
1	0	x	1
1	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3_1	7.99200
sky130_fd_sc_hs__nand3_2	11.18880
sky130_fd_sc_hs__nand3_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nand3_1	0.00260	0.00261	0.00252	0.18260
sky130_fd_sc_hs__nand3_2	0.00484	0.00522	0.00472	0.32726
sky130_fd_sc_hs__nand3_4	0.00725	0.00701	0.00701	0.36038

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3_1	0.00000	0.00005	0.00012
sky130_fd_sc_hs__nand3_2	0.00000	0.00011	0.00024
sky130_fd_sc_hs__nand3_4	0.00000	0.00018	0.00031

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (FR)	0.21573	1.90957	13.30590
	B->Y (FR)	0.26029	1.95286	13.34570
	C->Y (FR)	0.29282	1.99145	13.39860
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.18345	1.71881	13.29960
	B->Y (FR)	0.22681	1.71174	12.79430
	C->Y (FR)	0.26564	1.75754	12.85520
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.21462	1.71953	13.31010
	B->Y (FR)	0.31211	1.80374	13.34520
	C->Y (FR)	0.37985	1.88713	13.34330

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.09442	1.00075	6.95806
	B->Y (RF)	0.10797	0.99654	6.82812
	C->Y (RF)	0.11235	0.95108	6.43216
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.08131	0.90790	6.85131
	B->Y (RF)	0.10110	0.91795	6.75012
	C->Y (RF)	0.10856	0.87801	6.34309
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.07103	0.76747	5.76509
	B->Y (RF)	0.08828	0.77511	5.62747
	C->Y (RF)	0.09378	0.73315	5.17752

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00018	-0.00024	-0.00023
	A	0.00212	0.00206	0.00208
	B	0.00015	0.00008	0.00008
	B	0.00282	0.00274	0.00273
	C	0.00032	0.00026	0.00026
	C	0.00339	0.00333	0.00332
sky130_fd_sc_hs__nand3_2	A	-0.00067	-0.00076	-0.00072
	A	0.00365	0.00355	0.00360
	B	0.00014	-0.00003	-0.00002
	B	0.00544	0.00526	0.00529
	C	0.00077	0.00063	0.00062
	C	0.00672	0.00658	0.00659
sky130_fd_sc_hs__nand3_4	A	-0.00141	-0.00159	-0.00153
	A	0.00496	0.00480	0.00490
	B	0.00008	-0.00026	-0.00025
	B	0.00805	0.00770	0.00776
	C	0.00107	0.00081	0.00079
	C	0.01072	0.01046	0.01040

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00291	0.00289	0.00311
	A	0.00063	0.00060	0.00060
	B	0.00332	0.00333	0.00331
	B	0.00064	0.00061	0.00062
	C	0.00375	0.00376	0.00393
	C	0.00060	0.00058	0.00059
sky130_fd_sc_hs__nand3_2	A	0.00488	0.00482	0.00485
	A	0.00058	0.00053	0.00055
	B	0.00591	0.00586	0.00598
	B	0.00055	0.00050	0.00052
	C	0.00670	0.00669	0.00677
	C	0.00058	0.00053	0.00055
sky130_fd_sc_hs__nand3_4	A	0.00738	0.00733	0.00758
	A	0.00102	0.00094	0.00097
	B	0.00916	0.00914	0.00919
	B	0.00106	0.00099	0.00101
	C	0.01096	0.01093	0.01103
	C	0.00092	0.00087	0.00089

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00032	0.00032	0.00030
	(B * !C * Y)	-0.00107	-0.00108	-0.00113
	(!B * Y)	0.00032	0.00033	0.00031
	(!B * Y)	-0.00110	-0.00111	-0.00113
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00065	0.00064	0.00058
	(B * !C * Y)	-0.00199	-0.00200	-0.00211
	(!B * Y)	0.00066	0.00065	0.00062
	(!B * Y)	-0.00206	-0.00207	-0.00211
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00120	0.00120	0.00109
	(B * !C * Y)	-0.00241	-0.00243	-0.00264
	(!B * Y)	0.00121	0.00121	0.00115
	(!B * Y)	-0.00256	-0.00258	-0.00266

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00030	-0.00030	-0.00030
	(B * !C * Y)	0.00113	0.00115	0.00113
	(!B * Y)	-0.00031	-0.00031	-0.00031
	(!B * Y)	0.00113	0.00115	0.00113
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00057	-0.00058	-0.00057
	(B * !C * Y)	0.00212	0.00215	0.00212
	(!B * Y)	-0.00060	-0.00061	-0.00060
	(!B * Y)	0.00212	0.00214	0.00212
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00108	-0.00108	-0.00108
	(B * !C * Y)	0.00265	0.00266	0.00266
	(!B * Y)	-0.00112	-0.00112	-0.00112
	(!B * Y)	0.00265	0.00266	0.00266

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00041	0.00041	0.00041
	(A * !C * Y)	-0.00094	-0.00094	-0.00094
	(!A * C * Y)	0.00072	0.00073	0.00072
	(!A * C * Y)	-0.00094	-0.00095	-0.00094
	(!A * !C * Y)	0.00044	0.00044	0.00044
	(!A * !C * Y)	-0.00094	-0.00095	-0.00095
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00082	0.00082	0.00083
	(A * !C * Y)	-0.00199	-0.00199	-0.00198
	(!A * C * Y)	0.00143	0.00144	0.00144
	(!A * C * Y)	-0.00198	-0.00199	-0.00198
	(!A * !C * Y)	0.00089	0.00090	0.00089
	(!A * !C * Y)	-0.00199	-0.00201	-0.00200
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00150	0.00150	0.00151
	(A * !C * Y)	-0.00196	-0.00196	-0.00196
	(!A * C * Y)	0.00284	0.00284	0.00283
	(!A * C * Y)	-0.00196	-0.00197	-0.00196
	(!A * !C * Y)	0.00161	0.00162	0.00160
	(!A * !C * Y)	-0.00197	-0.00198	-0.00197

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00040	-0.00039	-0.00040
	(A * !C * Y)	0.00098	0.00097	0.00095
	(!A * C * Y)	-0.00071	-0.00073	-0.00072
	(!A * C * Y)	0.00095	0.00096	0.00095
	(!A * !C * Y)	-0.00044	-0.00044	-0.00044
	(!A * !C * Y)	0.00094	0.00095	0.00095
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00078	-0.00079	-0.00080
	(A * !C * Y)	0.00204	0.00206	0.00200
	(!A * C * Y)	-0.00142	-0.00144	-0.00144
	(!A * C * Y)	0.00200	0.00200	0.00199
	(!A * !C * Y)	-0.00089	-0.00090	-0.00089
	(!A * !C * Y)	0.00200	0.00201	0.00200
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00144	-0.00143	-0.00146
	(A * !C * Y)	0.00208	0.00206	0.00198
	(!A * C * Y)	-0.00277	-0.00284	-0.00283
	(!A * C * Y)	0.00196	0.00198	0.00196
	(!A * !C * Y)	-0.00161	-0.00162	-0.00160
	(!A * !C * Y)	0.00197	0.00199	0.00198

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00078	0.00078	0.00077
	(A * !B * Y)	-0.00095	-0.00096	-0.00095
	(!A * B * Y)	0.00075	0.00076	0.00075
	(!A * B * Y)	-0.00095	-0.00096	-0.00095
	(!A * !B * Y)	0.00077	0.00078	0.00077
	(!A * !B * Y)	-0.00095	-0.00096	-0.00095
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00142	0.00142	0.00141
	(A * !B * Y)	-0.00188	-0.00188	-0.00187
	(!A * B * Y)	0.00137	0.00138	0.00137
	(!A * B * Y)	-0.00186	-0.00187	-0.00186
	(!A * !B * Y)	0.00140	0.00142	0.00141
	(!A * !B * Y)	-0.00186	-0.00188	-0.00187
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00285	0.00285	0.00284
	(A * !B * Y)	-0.00198	-0.00198	-0.00198
	(!A * B * Y)	0.00276	0.00279	0.00277
	(!A * B * Y)	-0.00197	-0.00199	-0.00198
	(!A * !B * Y)	0.00284	0.00286	0.00284
	(!A * !B * Y)	-0.00198	-0.00199	-0.00198

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00076	-0.00078	-0.00077
	(A * !B * Y)	0.00095	0.00096	0.00095
	(!A * B * Y)	-0.00074	-0.00076	-0.00075
	(!A * B * Y)	0.00095	0.00096	0.00095
	(!A * !B * Y)	-0.00076	-0.00078	-0.00077
	(!A * !B * Y)	0.00095	0.00096	0.00095
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00139	-0.00142	-0.00141
	(A * !B * Y)	0.00189	0.00189	0.00187
	(!A * B * Y)	-0.00134	-0.00138	-0.00137
	(!A * B * Y)	0.00188	0.00188	0.00187
	(!A * !B * Y)	-0.00139	-0.00142	-0.00141
	(!A * !B * Y)	0.00188	0.00189	0.00187
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00279	-0.00285	-0.00284
	(A * !B * Y)	0.00199	0.00200	0.00198
	(!A * B * Y)	-0.00270	-0.00279	-0.00277
	(!A * B * Y)	0.00200	0.00200	0.00199
	(!A * !B * Y)	-0.00279	-0.00286	-0.00284
	(!A * !B * Y)	0.00199	0.00200	0.00198

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A_N	B_N	C	D	Y
0	x	0	x	1
0	x	1	0	1
0	0	1	1	0
x	1	1	1	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4bb_1	14.38560
sky130_fd_sc_hs__nand4bb_2	22.37760
sky130_fd_sc_hs__nand4bb_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	Y
sky130_fd_sc_hs__nand4bb_1	0.00201	0.00194	0.00260	0.00262	0.17971
sky130_fd_sc_hs__nand4bb_2	0.00231	0.00228	0.00485	0.00476	0.36534
sky130_fd_sc_hs__nand4bb_4	0.00321	0.00332	0.00941	0.00942	0.71407

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	0.00012	0.00023
sky130_fd_sc_hs__nand4bb_2	0.00000	0.00018	0.00039
sky130_fd_sc_hs__nand4bb_4	0.00000	0.00032	0.00072

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4bb_1	A_N->Y (RR)	0.32041	1.69105	9.66930
	B_N->Y (RR)	0.37664	1.74731	9.72390
	C->Y (FR)	0.34142	2.03693	13.41360
	D->Y (FR)	0.37911	2.08304	13.46360
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.26798	1.46830	9.73500
	B_N->Y (RR)	0.32990	1.51306	9.61941
	C->Y (FR)	0.28883	1.80635	13.44120
	D->Y (FR)	0.32928	1.85502	13.52390
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.29490	1.38414	9.87294
	B_N->Y (RR)	0.35909	1.45243	9.97353
	C->Y (FR)	0.27791	1.66034	13.52810
	D->Y (FR)	0.31703	1.70632	13.59690

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4bb_1	A_N->Y (FF)	0.42201	1.63748	8.75187
	B_N->Y (FF)	0.45623	1.67769	8.84455
	C->Y (RF)	0.17536	1.10455	7.26232
	D->Y (RF)	0.18543	1.08183	6.96403
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.51980	1.72575	9.76313
	B_N->Y (FF)	0.58365	1.80058	9.90147
	C->Y (RF)	0.17752	1.04744	7.65406
	D->Y (RF)	0.18458	1.03225	7.36492
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.50169	1.64535	9.84273
	B_N->Y (FF)	0.55277	1.70370	9.95409
	C->Y (RF)	0.18193	0.98402	7.86447
	D->Y (RF)	0.18857	0.96332	7.51496

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00380	0.00371	0.00368
	A_N	0.00250	0.00241	0.00238
	B_N	0.00410	0.00398	0.00394
	B_N	0.00284	0.00273	0.00269
	C	0.00060	0.00050	0.00049
	C	0.00284	0.00275	0.00274
	D	0.00085	0.00076	0.00074
	D	0.00340	0.00332	0.00333
sky130_fd_sc_hs__nand4bb_2	A_N	0.00536	0.00533	0.00533
	A_N	0.00397	0.00394	0.00395
	B_N	0.00643	0.00630	0.00627
	B_N	0.00509	0.00496	0.00494
	C	0.00083	0.00064	0.00064
	C	0.00489	0.00471	0.00475
	D	0.00149	0.00133	0.00131
	D	0.00630	0.00616	0.00616
sky130_fd_sc_hs__nand4bb_4	A_N	0.00892	0.00887	0.00899
	A_N	0.00717	0.00713	0.00726
	B_N	0.01064	0.01042	0.01045
	B_N	0.00882	0.00861	0.00864
	C	0.00130	0.00094	0.00097
	C	0.00935	0.00896	0.00908
	D	0.00242	0.00211	0.00210
	D	0.01198	0.01168	0.01171

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00337	0.00329	0.00328
	A_N	0.00468	0.00459	0.00458
	B_N	0.00402	0.00394	0.00394
	B_N	0.00528	0.00520	0.00519
	C	0.00447	0.00444	0.00445
	C	0.00222	0.00220	0.00220
	D	0.00492	0.00490	0.00495
	D	0.00230	0.00227	0.00227
sky130_fd_sc_hs__nand4bb_2	A_N	0.00571	0.00564	0.00567
	A_N	0.00712	0.00706	0.00706
	B_N	0.00690	0.00687	0.00686
	B_N	0.00826	0.00820	0.00820
	C	0.00780	0.00774	0.00777
	C	0.00371	0.00366	0.00368
	D	0.00864	0.00859	0.00869
	D	0.00368	0.00363	0.00364
sky130_fd_sc_hs__nand4bb_4	A_N	0.01151	0.01136	0.01159
	A_N	0.01326	0.01320	0.01322
	B_N	0.01339	0.01332	0.01334
	B_N	0.01522	0.01513	0.01515
	C	0.01530	0.01520	0.01528
	C	0.00722	0.00709	0.00715
	D	0.01706	0.01692	0.01701
	D	0.00721	0.00709	0.00715

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(B_N * Y)	0.00265	0.00257	0.00252
	(B_N * Y)	0.00097	0.00088	0.00084
	(!B_N * C * !D * Y)	0.00292	0.00284	0.00279
	(!B_N * C * !D * Y)	0.00123	0.00114	0.00110
	(!B_N * !C * Y)	0.00292	0.00284	0.00279
	(!B_N * !C * Y)	0.00124	0.00114	0.00110
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00394	0.00385	0.00378
	(B_N * Y)	0.00209	0.00199	0.00193
	(!B_N * C * !D * Y)	0.00426	0.00416	0.00410
	(!B_N * C * !D * Y)	0.00240	0.00230	0.00224
	(!B_N * !C * Y)	0.00426	0.00416	0.00410
	(!B_N * !C * Y)	0.00240	0.00230	0.00224
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00642	0.00627	0.00618
	(B_N * Y)	0.00377	0.00361	0.00353
	(!B_N * C * !D * Y)	0.00685	0.00671	0.00661
	(!B_N * C * !D * Y)	0.00418	0.00402	0.00395
	(!B_N * !C * Y)	0.00685	0.00670	0.00661
	(!B_N * !C * Y)	0.00419	0.00402	0.00395

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(B_N * Y)	0.00034	0.00027	0.00024
	(B_N * Y)	0.00203	0.00196	0.00193
	(!B_N * C * !D * Y)	0.00011	0.00004	-0.00002
	(!B_N * C * !D * Y)	0.00185	0.00178	0.00170
	(!B_N * !C * Y)	0.00009	0.00002	-0.00002
	(!B_N * !C * Y)	0.00180	0.00172	0.00168
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00082	0.00073	0.00066
	(B_N * Y)	0.00267	0.00258	0.00252
	(!B_N * C * !D * Y)	0.00055	0.00045	0.00034
	(!B_N * C * !D * Y)	0.00252	0.00242	0.00226
	(!B_N * !C * Y)	0.00051	0.00042	0.00034
	(!B_N * !C * Y)	0.00240	0.00231	0.00221
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00157	0.00144	0.00134
	(B_N * Y)	0.00423	0.00410	0.00399
	(!B_N * C * !D * Y)	0.00125	0.00111	0.00092
	(!B_N * C * !D * Y)	0.00417	0.00402	0.00374
	(!B_N * !C * Y)	0.00120	0.00107	0.00093
	(!B_N * !C * Y)	0.00393	0.00379	0.00363

Passive power(pJ) for B_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00255	0.00248	0.00243
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00092	0.00084	0.00080
	(!C * Y)	0.00260	0.00252	0.00248
	(!C * Y)	0.00092	0.00084	0.00080
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00372	0.00363	0.00357
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00192	0.00183	0.00177
	(!C * Y)	0.00381	0.00373	0.00366
	(!C * Y)	0.00193	0.00183	0.00177
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00620	0.00607	0.00597
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00350	0.00333	0.00324
	(!C * Y)	0.00640	0.00625	0.00616
	(!C * Y)	0.00350	0.00335	0.00326

Passive power(pJ) for B_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00069	0.00063	0.00060
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00233	0.00226	0.00224
	(!C * Y)	0.00043	0.00037	0.00035
	(!C * Y)	0.00210	0.00204	0.00201
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00153	0.00145	0.00142
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00334	0.00325	0.00322
	(!C * Y)	0.00102	0.00094	0.00091
	(!C * Y)	0.00290	0.00282	0.00278
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00277	0.00264	0.00260
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00551	0.00537	0.00533
	(!C * Y)	0.00174	0.00162	0.00157
	(!C * Y)	0.00462	0.00450	0.00444

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nand4bb_1	**(A_N * B_N * D * Y)**	0.00080	0.00080	0.00080
	(A_N * B_N * D * Y)	-0.00097	-0.00098	-0.00097
	(A_N * B_N * !D * Y)	0.00056	0.00057	0.00057
	(A_N * B_N * !D * Y)	-0.00097	-0.00098	-0.00098
	(A_N * !B_N * D * Y)	0.00067	0.00067	0.00067
	(A_N * !B_N * D * Y)	-0.00112	-0.00112	-0.00110
	(A_N * !B_N * !D * Y)	0.00043	0.00043	0.00042
	(A_N * !B_N * !D * Y)	-0.00115	-0.00116	-0.00115
	(!A_N * B_N * D * Y)	0.00080	0.00080	0.00080
	(!A_N * B_N * D * Y)	-0.00097	-0.00097	-0.00097
	(!A_N * B_N * !D * Y)	0.00055	0.00055	0.00055
	(!A_N * B_N * !D * Y)	-0.00098	-0.00098	-0.00098
	(!A_N * !B_N * !D * Y)	0.00038	0.00038	0.00038
	(!A_N * !B_N * !D * Y)	-0.00110	-0.00110	-0.00110
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00150	0.00152	0.00150
	(A_N * B_N * D * Y)	-0.00190	-0.00191	-0.00190
	(A_N * B_N * !D * Y)	0.00100	0.00101	0.00100
	(A_N * B_N * !D * Y)	-0.00190	-0.00191	-0.00190
	(A_N * !B_N * D * Y)	0.00143	0.00144	0.00143
	(A_N * !B_N * D * Y)	-0.00199	-0.00200	-0.00197
	(A_N * !B_N * !D * Y)	0.00092	0.00093	0.00092
	(A_N * !B_N * !D * Y)	-0.00206	-0.00208	-0.00206
	(!A_N * B_N * D * Y)	0.00150	0.00151	0.00150
	(!A_N * B_N * D * Y)	-0.00190	-0.00190	-0.00190
	(!A_N * B_N * !D * Y)	0.00097	0.00098	0.00097
	(!A_N * B_N * !D * Y)	-0.00190	-0.00191	-0.00190
	(!A_N * !B_N * !D * Y)	0.00081	0.00081	0.00082
	(!A_N * !B_N * !D * Y)	-0.00197	-0.00197	-0.00198

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00300	0.00302	0.00300
	(A_N * B_N * D * Y)	-0.00371	-0.00373	-0.00371
	(A_N * B_N * !D * Y)	0.00198	0.00199	0.00198
	(A_N * B_N * !D * Y)	-0.00372	-0.00373	-0.00371
	(A_N * !B_N * D * Y)	0.00281	0.00283	0.00282
	(A_N * !B_N * D * Y)	-0.00394	-0.00396	-0.00390
	(A_N * !B_N * !D * Y)	0.00176	0.00177	0.00176
	(A_N * !B_N * !D * Y)	-0.00407	-0.00410	-0.00408
	(!A_N * B_N * D * Y)	0.00299	0.00301	0.00300
	(!A_N * B_N * D * Y)	-0.00371	-0.00373	-0.00371
	(!A_N * B_N * !D * Y)	0.00191	0.00193	0.00191
	(!A_N * B_N * !D * Y)	-0.00371	-0.00374	-0.00372
	(!A_N * !B_N * !D * Y)	0.00157	0.00158	0.00159
	(!A_N * !B_N * !D * Y)	-0.00386	-0.00388	-0.00390

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nand4bb_1	**(A_N * B_N * D * Y)**	-0.00079	-0.00080	-0.00080
	(A_N * B_N * D * Y)	0.00097	0.00098	0.00098
	(A_N * B_N * !D * Y)	-0.00056	-0.00057	-0.00057
	(A_N * B_N * !D * Y)	0.00098	0.00099	0.00098
	(A_N * !B_N * D * Y)	-0.00065	-0.00067	-0.00067
	(A_N * !B_N * D * Y)	0.00113	0.00112	0.00110
	(A_N * !B_N * !D * Y)	-0.00043	-0.00043	-0.00042
	(A_N * !B_N * !D * Y)	0.00117	0.00120	0.00119
	(!A_N * B_N * D * Y)	-0.00079	-0.00080	-0.00080
	(!A_N * B_N * D * Y)	0.00097	0.00098	0.00098
	(!A_N * B_N * !D * Y)	-0.00055	-0.00055	-0.00055
	(!A_N * B_N * !D * Y)	0.00098	0.00099	0.00098
	(!A_N * !B_N * !D * Y)	-0.00037	-0.00038	-0.00037
	(!A_N * !B_N * !D * Y)	0.00111	0.00112	0.00111
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00149	-0.00152	-0.00150
	(A_N * B_N * D * Y)	0.00190	0.00192	0.00190
	(A_N * B_N * !D * Y)	-0.00100	-0.00101	-0.00100
	(A_N * B_N * !D * Y)	0.00190	0.00192	0.00191
	(A_N * !B_N * D * Y)	-0.00140	-0.00144	-0.00143
	(A_N * !B_N * D * Y)	0.00205	0.00200	0.00197
	(A_N * !B_N * !D * Y)	-0.00092	-0.00093	-0.00092
	(A_N * !B_N * !D * Y)	0.00212	0.00215	0.00213
	(!A_N * B_N * D * Y)	-0.00149	-0.00151	-0.00150
	(!A_N * B_N * D * Y)	0.00190	0.00192	0.00191
	(!A_N * B_N * !D * Y)	-0.00097	-0.00098	-0.00097
	(!A_N * B_N * !D * Y)	0.00191	0.00192	0.00191
	(!A_N * !B_N * !D * Y)	-0.00081	-0.00080	-0.00080
	(!A_N * !B_N * !D * Y)	0.00202	0.00201	0.00199

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00297	-0.00302	-0.00300
	(A_N * B_N * D * Y)	0.00371	0.00376	0.00372
	(A_N * B_N * !D * Y)	-0.00198	-0.00199	-0.00198
	(A_N * B_N * !D * Y)	0.00372	0.00375	0.00373
	(A_N * !B_N * D * Y)	-0.00272	-0.00283	-0.00282
	(A_N * !B_N * D * Y)	0.00401	0.00396	0.00390
	(A_N * !B_N * !D * Y)	-0.00176	-0.00177	-0.00176
	(A_N * !B_N * !D * Y)	0.00422	0.00427	0.00423
	(!A_N * B_N * D * Y)	-0.00296	-0.00301	-0.00300
	(!A_N * B_N * D * Y)	0.00372	0.00376	0.00372
	(!A_N * B_N * !D * Y)	-0.00191	-0.00193	-0.00191
	(!A_N * B_N * !D * Y)	0.00372	0.00375	0.00373
	(!A_N * !B_N * !D * Y)	-0.00154	-0.00155	-0.00155
	(!A_N * !B_N * !D * Y)	0.00393	0.00397	0.00393

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	(A_N * B_N * C * Y)	0.00068	0.00068	0.00068
	(A_N * B_N * C * Y)	-0.00103	-0.00103	-0.00103
	(A_N * !C * Y)	0.00069	0.00070	0.00069
	(A_N * !C * Y)	-0.00103	-0.00104	-0.00103
	(A_N * !B_N * C * Y)	0.00067	0.00067	0.00067
	(A_N * !B_N * C * Y)	-0.00106	-0.00106	-0.00106
	(!A_N * B_N * C * Y)	0.00068	0.00069	0.00068
	(!A_N * B_N * C * Y)	-0.00103	-0.00103	-0.00103
	(!A_N * B_N * !C * Y)	0.00069	0.00070	0.00069
	(!A_N * B_N * !C * Y)	-0.00103	-0.00103	-0.00103
	(!A_N * !B_N * !C * Y)	0.00069	0.00070	0.00069
	(!A_N * !B_N * !C * Y)	-0.00103	-0.00103	-0.00103

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00143	0.00143	0.00143
	(A_N * B_N * C * Y)	-0.00185	-0.00185	-0.00185
	(A_N * !C * Y)	0.00146	0.00146	0.00145
	(A_N * !C * Y)	-0.00186	-0.00186	-0.00185
	(A_N * !B_N * C * Y)	0.00140	0.00142	0.00140
	(A_N * !B_N * C * Y)	-0.00192	-0.00193	-0.00191
	(!A_N * B_N * C * Y)	0.00143	0.00143	0.00143
	(!A_N * B_N * C * Y)	-0.00185	-0.00186	-0.00185
	(!A_N * B_N * !C * Y)	0.00144	0.00145	0.00145
	(!A_N * B_N * !C * Y)	-0.00184	-0.00185	-0.00185
	(!A_N * !B_N * !C * Y)	0.00145	0.00146	0.00145
	(!A_N * !B_N * !C * Y)	-0.00185	-0.00186	-0.00185
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00284	0.00286	0.00284
	(A_N * B_N * C * Y)	-0.00368	-0.00370	-0.00368
	(A_N * !C * Y)	0.00290	0.00290	0.00288
	(A_N * !C * Y)	-0.00367	-0.00370	-0.00368
	(A_N * !B_N * C * Y)	0.00278	0.00278	0.00278
	(A_N * !B_N * C * Y)	-0.00383	-0.00382	-0.00380
	(!A_N * B_N * C * Y)	0.00285	0.00286	0.00284
	(!A_N * B_N * C * Y)	-0.00369	-0.00370	-0.00368
	(!A_N * B_N * !C * Y)	0.00289	0.00290	0.00288
	(!A_N * B_N * !C * Y)	-0.00367	-0.00370	-0.00368
	(!A_N * !B_N * !C * Y)	0.00286	0.00289	0.00287
	(!A_N * !B_N * !C * Y)	-0.00367	-0.00370	-0.00369

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nand4bb_1	**(A_N * B_N * C * Y)**	-0.00067	-0.00068	-0.00068
	(A_N * B_N * C * Y)	0.00104	0.00104	0.00103
	(A_N * !C * Y)	-0.00068	-0.00070	-0.00069
	(A_N * !C * Y)	0.00103	0.00104	0.00103
	(A_N * !B_N * C * Y)	-0.00065	-0.00067	-0.00067
	(A_N * !B_N * C * Y)	0.00107	0.00107	0.00106
	(!A_N * B_N * C * Y)	-0.00067	-0.00069	-0.00068
	(!A_N * B_N * C * Y)	0.00104	0.00104	0.00103
	(!A_N * B_N * !C * Y)	-0.00068	-0.00070	-0.00069
	(!A_N * B_N * !C * Y)	0.00103	0.00104	0.00103
	(!A_N * !B_N * !C * Y)	-0.00068	-0.00070	-0.00069
	(!A_N * !B_N * !C * Y)	0.00103	0.00104	0.00103
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00139	-0.00143	-0.00143
	(A_N * B_N * C * Y)	0.00186	0.00187	0.00185
	(A_N * !C * Y)	-0.00143	-0.00146	-0.00145
	(A_N * !C * Y)	0.00186	0.00187	0.00185
	(A_N * !B_N * C * Y)	-0.00136	-0.00142	-0.00140
	(A_N * !B_N * C * Y)	0.00195	0.00193	0.00191
	(!A_N * B_N * C * Y)	-0.00139	-0.00143	-0.00143
	(!A_N * B_N * C * Y)	0.00186	0.00187	0.00185
	(!A_N * B_N * !C * Y)	-0.00143	-0.00145	-0.00145
	(!A_N * B_N * !C * Y)	0.00186	0.00187	0.00185
	(!A_N * !B_N * !C * Y)	-0.00142	-0.00146	-0.00145
	(!A_N * !B_N * !C * Y)	0.00186	0.00187	0.00186

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00277	-0.00286	-0.00284
	(A_N * B_N * C * Y)	0.00371	0.00372	0.00369
	(A_N * !C * Y)	-0.00281	-0.00290	-0.00288
	(A_N * !C * Y)	0.00367	0.00372	0.00369
	(A_N * !B_N * C * Y)	-0.00270	-0.00278	-0.00278
	(A_N * !B_N * C * Y)	0.00388	0.00384	0.00380
	(!A_N * B_N * C * Y)	-0.00277	-0.00286	-0.00284
	(!A_N * B_N * C * Y)	0.00372	0.00372	0.00369
	(!A_N * B_N * !C * Y)	-0.00281	-0.00290	-0.00288
	(!A_N * B_N * !C * Y)	0.00367	0.00372	0.00369
	(!A_N * !B_N * !C * Y)	-0.00281	-0.00289	-0.00287
	(!A_N * !B_N * !C * Y)	0.00367	0.00373	0.00370

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A_N	B	C	D	Y
x	0	x	x	1
x	1	0	x	1
x	1	1	0	1
0	1	1	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4b_1	11.18880
sky130_fd_sc_hs__nand4b_2	19.18080
sky130_fd_sc_hs__nand4b_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	Y
sky130_fd_sc_hs__nand4b_1	0.00197	0.00254	0.00254	0.00245	0.18436
sky130_fd_sc_hs__nand4b_2	0.00251	0.00501	0.00484	0.00482	0.37152
sky130_fd_sc_hs__nand4b_4	0.00347	0.00710	0.00725	0.00689	0.36920

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	0.00009	0.00020
sky130_fd_sc_hs__nand4b_2	0.00000	0.00015	0.00036
sky130_fd_sc_hs__nand4b_4	0.00000	0.00024	0.00044

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4b_1	A_N->Y (RR)	0.28948	1.64136	9.51386
	B->Y (FR)	0.27324	1.98134	13.51510
	C->Y (FR)	0.31423	2.02328	13.55860
	D->Y (FR)	0.33603	2.04359	13.50850
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.26372	1.44736	9.59160
	B->Y (FR)	0.24714	1.75054	13.50080
	C->Y (FR)	0.28991	1.81831	13.62830
	D->Y (FR)	0.32656	1.85829	13.63210
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.33082	1.52484	9.66474
	B->Y (FR)	0.34420	1.84041	13.46820
	C->Y (FR)	0.42338	1.91512	13.56280
	D->Y (FR)	0.49842	2.01771	13.69360

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4b_1	A_N->Y (FF)	0.42746	1.64819	8.86052
	B->Y (RF)	0.14017	1.11769	7.62226
	C->Y (RF)	0.15451	1.09039	7.29919
	D->Y (RF)	0.15879	1.06198	6.99806
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.50315	1.71020	9.75506
	B->Y (RF)	0.14996	1.08407	8.14440
	C->Y (RF)	0.16324	1.04028	7.68194
	D->Y (RF)	0.17172	1.02375	7.39511
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.38688	1.43048	7.78304
	B->Y (RF)	0.13184	0.87964	6.35664
	C->Y (RF)	0.14583	0.84868	5.93117
	D->Y (RF)	0.15211	0.82795	5.59109

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00376	0.00368	0.00365
	A_N	0.00237	0.00231	0.00227
	B	0.00031	0.00023	0.00023
	B	0.00249	0.00241	0.00243
	C	0.00060	0.00051	0.00051
	C	0.00304	0.00295	0.00296
	D	0.00080	0.00074	0.00073
	D	0.00357	0.00351	0.00348
sky130_fd_sc_hs__nand4b_2	A_N	0.00540	0.00537	0.00536
	A_N	0.00408	0.00405	0.00406
	B	0.00016	-0.00004	-0.00001
	B	0.00466	0.00447	0.00454
	C	0.00078	0.00059	0.00059
	C	0.00591	0.00572	0.00575
	D	0.00140	0.00124	0.00123
	D	0.00733	0.00716	0.00710
sky130_fd_sc_hs__nand4b_4	A_N	0.00699	0.00690	0.00698
	A_N	0.00506	0.00497	0.00505
	B	0.00013	-0.00027	-0.00025
	B	0.00644	0.00605	0.00611
	C	0.00114	0.00072	0.00070
	C	0.00903	0.00862	0.00862
	D	0.00229	0.00199	0.00193
	D	0.01154	0.01122	0.01118

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00310	0.00303	0.00301
	A_N	0.00449	0.00441	0.00439
	B	0.00340	0.00338	0.00341
	B	0.00122	0.00120	0.00120
	C	0.00380	0.00379	0.00383
	C	0.00131	0.00129	0.00129
	D	0.00417	0.00416	0.00418
	D	0.00130	0.00128	0.00128
sky130_fd_sc_hs__nand4b_2	A_N	0.00562	0.00550	0.00554
	A_N	0.00694	0.00687	0.00685
	B	0.00689	0.00685	0.00686
	B	0.00236	0.00231	0.00233
	C	0.00768	0.00763	0.00765
	C	0.00244	0.00239	0.00241
	D	0.00857	0.00852	0.00861
	D	0.00241	0.00236	0.00237
sky130_fd_sc_hs__nand4b_4	A_N	0.00839	0.00804	0.00834
	A_N	0.01035	0.01015	0.01018
	B	0.01054	0.01048	0.01092
	B	0.00417	0.00411	0.00413
	C	0.01233	0.01228	0.01260
	C	0.00420	0.00414	0.00416
	D	0.01395	0.01390	0.01396
	D	0.00423	0.00417	0.00419

Passive power(pJ) for A_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(B * C * !D * Y)	0.00287	0.00279	0.00274
	(B * C * !D * Y)	0.00112	0.00102	0.00098
	(B * !C * Y)	0.00287	0.00279	0.00273
	(B * !C * Y)	0.00112	0.00102	0.00098
	(!B * Y)	0.00286	0.00277	0.00272
	(!B * Y)	0.00112	0.00103	0.00098
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00430	0.00418	0.00411
	(B * C * !D * Y)	0.00208	0.00197	0.00190
	(B * !C * Y)	0.00429	0.00418	0.00411
	(B * !C * Y)	0.00208	0.00197	0.00190
	(!B * Y)	0.00427	0.00416	0.00409
	(!B * Y)	0.00209	0.00197	0.00190
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00511	0.00494	0.00484
	(B * C * !D * Y)	0.00203	0.00185	0.00177
	(B * !C * Y)	0.00510	0.00494	0.00484
	(B * !C * Y)	0.00203	0.00185	0.00177
	(!B * Y)	0.00506	0.00489	0.00480
	(!B * Y)	0.00204	0.00186	0.00178

Passive power(pJ) for A_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(B * C * !D * Y)	0.00037	0.00029	0.00024
	(B * C * !D * Y)	0.00220	0.00212	0.00204
	(B * !C * Y)	0.00036	0.00029	0.00025
	(B * !C * Y)	0.00217	0.00209	0.00203
	(!B * Y)	0.00037	0.00029	0.00026
	(!B * Y)	0.00211	0.00204	0.00200
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00046	0.00035	0.00023
	(B * C * !D * Y)	0.00283	0.00271	0.00252
	(B * !C * Y)	0.00043	0.00032	0.00023
	(B * !C * Y)	0.00274	0.00262	0.00249
	(!B * Y)	0.00041	0.00031	0.00025
	(!B * Y)	0.00263	0.00251	0.00244
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00095	0.00081	0.00063
	(B * C * !D * Y)	0.00433	0.00417	0.00387
	(B * !C * Y)	0.00090	0.00076	0.00064
	(B * !C * Y)	0.00416	0.00400	0.00382
	(!B * Y)	0.00088	0.00075	0.00067
	(!B * Y)	0.00394	0.00379	0.00370

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nand4b_1	**(A_N * C * D * Y)**	0.00082	0.00082	0.00082
	(A_N * C * D * Y)	-0.00093	-0.00093	-0.00093
	(A_N * C * !D * Y)	0.00057	0.00057	0.00057
	(A_N * C * !D * Y)	-0.00093	-0.00093	-0.00093
	(A_N * !C * Y)	0.00056	0.00057	0.00056
	(A_N * !C * Y)	-0.00093	-0.00093	-0.00093
	(!A_N * C * !D * Y)	0.00036	0.00036	0.00037
	(!A_N * C * !D * Y)	-0.00107	-0.00106	-0.00108
	(!A_N * !C * Y)	0.00038	0.00038	0.00038
	(!A_N * !C * Y)	-0.00108	-0.00108	-0.00109
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00150	0.00151	0.00150
	(A_N * C * D * Y)	-0.00198	-0.00199	-0.00198
	(A_N * C * !D * Y)	0.00101	0.00100	0.00100
	(A_N * C * !D * Y)	-0.00200	-0.00199	-0.00199
	(A_N * !C * Y)	0.00100	0.00099	0.00100
	(A_N * !C * Y)	-0.00200	-0.00199	-0.00199
	(!A_N * C * !D * Y)	0.00076	0.00076	0.00077
	(!A_N * C * !D * Y)	-0.00208	-0.00209	-0.00212
	(!A_N * !C * Y)	0.00080	0.00080	0.00080
	(!A_N * !C * Y)	-0.00212	-0.00212	-0.00213
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00286	0.00288	0.00286
	(A_N * C * D * Y)	-0.00206	-0.00208	-0.00207
	(A_N * C * !D * Y)	0.00182	0.00184	0.00182
	(A_N * C * !D * Y)	-0.00208	-0.00210	-0.00209
	(A_N * !C * Y)	0.00179	0.00181	0.00180
	(A_N * !C * Y)	-0.00208	-0.00210	-0.00209
	(!A_N * C * !D * Y)	0.00142	0.00143	0.00145
	(!A_N * C * !D * Y)	-0.00219	-0.00219	-0.00226
	(!A_N * !C * Y)	0.00151	0.00150	0.00151
	(!A_N * !C * Y)	-0.00226	-0.00226	-0.00228

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(A_N * C * D * Y)	-0.00082	-0.00082	-0.00082
	(A_N * C * D * Y)	0.00094	0.00094	0.00093
	(A_N * C * !D * Y)	-0.00057	-0.00057	-0.00057
	(A_N * C * !D * Y)	0.00093	0.00094	0.00093
	(A_N * !C * Y)	-0.00056	-0.00057	-0.00056
	(A_N * !C * Y)	0.00093	0.00094	0.00093
	(!A_N * C * !D * Y)	-0.00036	-0.00036	-0.00036
	(!A_N * C * !D * Y)	0.00112	0.00111	0.00110
	(!A_N * !C * Y)	-0.00036	-0.00036	-0.00037
	(!A_N * !C * Y)	0.00112	0.00111	0.00110
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00149	-0.00151	-0.00150
	(A_N * C * D * Y)	0.00200	0.00200	0.00198
	(A_N * C * !D * Y)	-0.00101	-0.00100	-0.00100
	(A_N * C * !D * Y)	0.00200	0.00202	0.00199
	(A_N * !C * Y)	-0.00100	-0.00099	-0.00100
	(A_N * !C * Y)	0.00201	0.00201	0.00200
	(!A_N * C * !D * Y)	-0.00073	-0.00074	-0.00075
	(!A_N * C * !D * Y)	0.00217	0.00218	0.00215
	(!A_N * !C * Y)	-0.00075	-0.00076	-0.00077
	(!A_N * !C * Y)	0.00217	0.00218	0.00215

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00281	-0.00288	-0.00286
	(A_N * C * D * Y)	0.00206	0.00209	0.00208
	(A_N * C * !D * Y)	-0.00182	-0.00184	-0.00182
	(A_N * C * !D * Y)	0.00210	0.00212	0.00209
	(A_N * !C * Y)	-0.00179	-0.00181	-0.00180
	(A_N * !C * Y)	0.00211	0.00211	0.00210
	(!A_N * C * !D * Y)	-0.00140	-0.00139	-0.00142
	(!A_N * C * !D * Y)	0.00239	0.00238	0.00232
	(!A_N * !C * Y)	-0.00143	-0.00143	-0.00145
	(!A_N * !C * Y)	0.00239	0.00238	0.00232

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nand4b_1	**(A_N * B * D * Y)**	0.00070	0.00070	0.00070
	(A_N * B * D * Y)	-0.00093	-0.00093	-0.00093
	(A_N * B * !D * Y)	0.00044	0.00045	0.00045
	(A_N * B * !D * Y)	-0.00092	-0.00093	-0.00093
	(A_N * !B * D * Y)	0.00071	0.00072	0.00071
	(A_N * !B * D * Y)	-0.00092	-0.00093	-0.00093
	(A_N * !B * !D * Y)	0.00045	0.00045	0.00045
	(A_N * !B * !D * Y)	-0.00093	-0.00093	-0.00093
	(!A_N * B * !D * Y)	0.00037	0.00037	0.00037
	(!A_N * B * !D * Y)	-0.00096	-0.00095	-0.00096
	(!A_N * !B * D * Y)	0.00068	0.00068	0.00068
	(!A_N * !B * D * Y)	-0.00095	-0.00096	-0.00096
	(!A_N * !B * !D * Y)	0.00040	0.00040	0.00040
	(!A_N * !B * !D * Y)	-0.00096	-0.00096	-0.00096

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00142	0.00142	0.00141
	(A_N * B * D * Y)	-0.00189	-0.00190	-0.00189
	(A_N * B * !D * Y)	0.00090	0.00091	0.00090
	(A_N * B * !D * Y)	-0.00189	-0.00191	-0.00190
	(A_N * !B * D * Y)	0.00145	0.00145	0.00144
	(A_N * !B * D * Y)	-0.00189	-0.00189	-0.00189
	(A_N * !B * !D * Y)	0.00092	0.00093	0.00092
	(A_N * !B * !D * Y)	-0.00189	-0.00190	-0.00189
	(!A_N * B * !D * Y)	0.00080	0.00080	0.00081
	(!A_N * B * !D * Y)	-0.00189	-0.00189	-0.00189
	(!A_N * !B * D * Y)	0.00145	0.00145	0.00144
	(!A_N * !B * D * Y)	-0.00189	-0.00189	-0.00189
	(!A_N * !B * !D * Y)	0.00089	0.00090	0.00089
	(!A_N * !B * !D * Y)	-0.00188	-0.00190	-0.00189
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00285	0.00286	0.00284
	(A_N * B * D * Y)	-0.00206	-0.00206	-0.00205
	(A_N * B * !D * Y)	0.00177	0.00178	0.00176
	(A_N * B * !D * Y)	-0.00207	-0.00208	-0.00206
	(A_N * !B * D * Y)	0.00288	0.00290	0.00290
	(A_N * !B * D * Y)	-0.00203	-0.00205	-0.00205
	(A_N * !B * !D * Y)	0.00178	0.00178	0.00177
	(A_N * !B * !D * Y)	-0.00206	-0.00206	-0.00205
	(!A_N * B * !D * Y)	0.00158	0.00157	0.00158
	(!A_N * B * !D * Y)	-0.00205	-0.00204	-0.00205
	(!A_N * !B * D * Y)	0.00288	0.00291	0.00290
	(!A_N * !B * D * Y)	-0.00204	-0.00206	-0.00205
	(!A_N * !B * !D * Y)	0.00172	0.00173	0.00171
	(!A_N * !B * !D * Y)	-0.00205	-0.00207	-0.00205

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(A_N * B * D * Y)	-0.00068	-0.00070	-0.00070
	(A_N * B * D * Y)	0.00093	0.00094	0.00093
	(A_N * B * !D * Y)	-0.00044	-0.00045	-0.00045
	(A_N * B * !D * Y)	0.00093	0.00093	0.00093
	(A_N * !B * D * Y)	-0.00070	-0.00072	-0.00071
	(A_N * !B * D * Y)	0.00093	0.00094	0.00093
	(A_N * !B * !D * Y)	-0.00045	-0.00045	-0.00045
	(A_N * !B * !D * Y)	0.00094	0.00093	0.00093
	(!A_N * B * !D * Y)	-0.00037	-0.00036	-0.00036
	(!A_N * B * !D * Y)	0.00098	0.00097	0.00096
	(!A_N * !B * D * Y)	-0.00067	-0.00068	-0.00068
	(!A_N * !B * D * Y)	0.00096	0.00097	0.00096
	(!A_N * !B * !D * Y)	-0.00040	-0.00040	-0.00040
	(!A_N * !B * !D * Y)	0.00096	0.00097	0.00096
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00138	-0.00142	-0.00141
	(A_N * B * D * Y)	0.00192	0.00191	0.00189
	(A_N * B * !D * Y)	-0.00090	-0.00091	-0.00090
	(A_N * B * !D * Y)	0.00192	0.00191	0.00190
	(A_N * !B * D * Y)	-0.00143	-0.00145	-0.00144
	(A_N * !B * D * Y)	0.00191	0.00191	0.00189
	(A_N * !B * !D * Y)	-0.00092	-0.00093	-0.00092
	(A_N * !B * !D * Y)	0.00191	0.00190	0.00189
	(!A_N * B * !D * Y)	-0.00080	-0.00079	-0.00079
	(!A_N * B * !D * Y)	0.00193	0.00192	0.00190
	(!A_N * !B * D * Y)	-0.00142	-0.00145	-0.00144
	(!A_N * !B * D * Y)	0.00191	0.00191	0.00189
	(!A_N * !B * !D * Y)	-0.00089	-0.00090	-0.00089
	(!A_N * !B * !D * Y)	0.00188	0.00191	0.00190

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00275	-0.00286	-0.00284
	(A_N * B * D * Y)	0.00207	0.00208	0.00206
	(A_N * B * !D * Y)	-0.00177	-0.00178	-0.00176
	(A_N * B * !D * Y)	0.00209	0.00208	0.00207
	(A_N * !B * D * Y)	-0.00285	-0.00290	-0.00290
	(A_N * !B * D * Y)	0.00205	0.00207	0.00205
	(A_N * !B * !D * Y)	-0.00178	-0.00178	-0.00177
	(A_N * !B * !D * Y)	0.00208	0.00207	0.00205
	(!A_N * B * !D * Y)	-0.00156	-0.00155	-0.00154
	(!A_N * B * !D * Y)	0.00211	0.00210	0.00206
	(!A_N * !B * D * Y)	-0.00285	-0.00291	-0.00290
	(!A_N * !B * D * Y)	0.00206	0.00207	0.00205
	(!A_N * !B * !D * Y)	-0.00172	-0.00173	-0.00171
	(!A_N * !B * !D * Y)	0.00208	0.00207	0.00206

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(A_N * B * C * Y)	0.00070	0.00070	0.00069
	(A_N * B * C * Y)	-0.00090	-0.00091	-0.00090
	(A_N * !C * Y)	0.00071	0.00072	0.00072
	(A_N * !C * Y)	-0.00090	-0.00091	-0.00090
	(A_N * !B * C * Y)	0.00070	0.00070	0.00070
	(A_N * !B * C * Y)	-0.00090	-0.00091	-0.00090
	(!A_N * B * !C * Y)	0.00068	0.00069	0.00068
	(!A_N * B * !C * Y)	-0.00093	-0.00094	-0.00093
	(!A_N * !B * C * Y)	0.00066	0.00067	0.00067
	(!A_N * !B * C * Y)	-0.00093	-0.00094	-0.00093
	(!A_N * !B * !C * Y)	0.00069	0.00069	0.00068
	(!A_N * !B * !C * Y)	-0.00093	-0.00094	-0.00093

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00140	0.00140	0.00140
	(A_N * B * C * Y)	-0.00187	-0.00187	-0.00187
	(A_N * !C * Y)	0.00145	0.00145	0.00144
	(A_N * !C * Y)	-0.00186	-0.00188	-0.00187
	(A_N * !B * C * Y)	0.00140	0.00141	0.00140
	(A_N * !B * C * Y)	-0.00187	-0.00188	-0.00187
	(!A_N * B * !C * Y)	0.00144	0.00145	0.00144
	(!A_N * B * !C * Y)	-0.00186	-0.00188	-0.00187
	(!A_N * !B * C * Y)	0.00141	0.00141	0.00140
	(!A_N * !B * C * Y)	-0.00187	-0.00188	-0.00187
	(!A_N * !B * !C * Y)	0.00144	0.00145	0.00144
	(!A_N * !B * !C * Y)	-0.00186	-0.00187	-0.00187
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00277	0.00274	0.00276
	(A_N * B * C * Y)	-0.00188	-0.00187	-0.00187
	(A_N * !C * Y)	0.00284	0.00285	0.00285
	(A_N * !C * Y)	-0.00186	-0.00187	-0.00187
	(A_N * !B * C * Y)	0.00277	0.00278	0.00276
	(A_N * !B * C * Y)	-0.00186	-0.00188	-0.00187
	(!A_N * B * !C * Y)	0.00285	0.00286	0.00285
	(!A_N * B * !C * Y)	-0.00186	-0.00187	-0.00187
	(!A_N * !B * C * Y)	0.00277	0.00278	0.00276
	(!A_N * !B * C * Y)	-0.00186	-0.00188	-0.00187
	(!A_N * !B * !C * Y)	0.00286	0.00286	0.00285
	(!A_N * !B * !C * Y)	-0.00186	-0.00187	-0.00187

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nand4b_1	**(A_N * B * C * Y)**	-0.00068	-0.00070	-0.00069
	(A_N * B * C * Y)	0.00091	0.00091	0.00091
	(A_N * !C * Y)	-0.00070	-0.00072	-0.00072
	(A_N * !C * Y)	0.00090	0.00091	0.00090
	(A_N * !B * C * Y)	-0.00068	-0.00070	-0.00070
	(A_N * !B * C * Y)	0.00091	0.00091	0.00091
	(!A_N * B * !C * Y)	-0.00067	-0.00069	-0.00068
	(!A_N * B * !C * Y)	0.00093	0.00094	0.00094
	(!A_N * !B * C * Y)	-0.00065	-0.00067	-0.00067
	(!A_N * !B * C * Y)	0.00094	0.00094	0.00094
	(!A_N * !B * !C * Y)	-0.00067	-0.00069	-0.00068
	(!A_N * !B * !C * Y)	0.00093	0.00094	0.00094
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00135	-0.00140	-0.00140
	(A_N * B * C * Y)	0.00188	0.00189	0.00188
	(A_N * !C * Y)	-0.00141	-0.00145	-0.00144
	(A_N * !C * Y)	0.00186	0.00189	0.00188
	(A_N * !B * C * Y)	-0.00137	-0.00141	-0.00140
	(A_N * !B * C * Y)	0.00189	0.00189	0.00188
	(!A_N * B * !C * Y)	-0.00141	-0.00145	-0.00144
	(!A_N * B * !C * Y)	0.00186	0.00189	0.00188
	(!A_N * !B * C * Y)	-0.00136	-0.00141	-0.00140
	(!A_N * !B * C * Y)	0.00189	0.00189	0.00188
	(!A_N * !B * !C * Y)	-0.00141	-0.00145	-0.00144
	(!A_N * !B * !C * Y)	0.00186	0.00189	0.00188

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00268	-0.00274	-0.00276
	(A_N * B * C * Y)	0.00188	0.00189	0.00188
	(A_N * !C * Y)	-0.00279	-0.00285	-0.00285
	(A_N * !C * Y)	0.00186	0.00189	0.00187
	(A_N * !B * C * Y)	-0.00268	-0.00278	-0.00276
	(A_N * !B * C * Y)	0.00186	0.00189	0.00187
	(!A_N * B * !C * Y)	-0.00279	-0.00286	-0.00285
	(!A_N * B * !C * Y)	0.00186	0.00189	0.00187
	(!A_N * !B * C * Y)	-0.00267	-0.00278	-0.00276
	(!A_N * !B * C * Y)	0.00186	0.00189	0.00187
	(!A_N * !B * !C * Y)	-0.00279	-0.00286	-0.00285
	(!A_N * !B * !C * Y)	0.00186	0.00189	0.00187

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D	Y
0	x	x	x	1
1	0	x	x	1
1	1	0	x	1
1	1	1	0	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4_1	9.59040
sky130_fd_sc_hs__nand4_2	15.98400
sky130_fd_sc_hs__nand4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nand4_1	0.00251	0.00263	0.00258	0.00258	0.18606
sky130_fd_sc_hs__nand4_2	0.00489	0.00486	0.00490	0.00473	0.36512
sky130_fd_sc_hs__nand4_4	0.00737	0.00704	0.00703	0.00720	0.36648

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.00005	0.00016
sky130_fd_sc_hs__nand4_2	0.00000	0.00011	0.00033
sky130_fd_sc_hs__nand4_4	0.00000	0.00020	0.00040

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (FR)	0.23030	1.93179	13.43090
	B->Y (FR)	0.28356	1.99545	13.59180
	C->Y (FR)	0.32207	2.03767	13.63730
	D->Y (FR)	0.34778	2.06211	13.58390
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.19295	1.69945	13.39190
	B->Y (FR)	0.24270	1.75651	13.38940
	C->Y (FR)	0.28223	1.80125	13.44170
	D->Y (FR)	0.31736	1.84711	13.52080
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.25082	1.75195	13.34370
	B->Y (FR)	0.34553	1.83687	13.39680
	C->Y (FR)	0.43143	1.93047	13.62040
	D->Y (FR)	0.50188	2.03015	13.69680

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.11410	1.10261	7.66987
	B->Y (RF)	0.13745	1.11547	7.60715
	C->Y (RF)	0.14953	1.08547	7.27713
	D->Y (RF)	0.15576	1.05743	6.97489
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.10691	1.05681	8.15003
	B->Y (RF)	0.13650	1.07695	8.10034
	C->Y (RF)	0.15038	1.03242	7.64062
	D->Y (RF)	0.15770	1.01100	7.34615
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.08865	0.85655	6.40624
	B->Y (RF)	0.11608	0.87668	6.33861
	C->Y (RF)	0.13069	0.84281	5.91135
	D->Y (RF)	0.13791	0.81938	5.57151

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00006	-0.00013	-0.00012
	A	0.00242	0.00236	0.00238
	B	0.00030	0.00021	0.00020
	B	0.00315	0.00306	0.00308
	C	0.00060	0.00051	0.00050
	C	0.00379	0.00369	0.00370
	D	0.00078	0.00071	0.00069
	D	0.00437	0.00428	0.00428
sky130_fd_sc_hs__nand4_2	A	-0.00060	-0.00072	-0.00067
	A	0.00397	0.00386	0.00392
	B	0.00022	0.00002	0.00004
	B	0.00564	0.00544	0.00550
	C	0.00074	0.00055	0.00055
	C	0.00698	0.00679	0.00681
	D	0.00140	0.00124	0.00122
	D	0.00834	0.00819	0.00818
sky130_fd_sc_hs__nand4_4	A	-0.00123	-0.00149	-0.00142
	A	0.00550	0.00526	0.00530
	B	0.00023	-0.00020	-0.00017
	B	0.00854	0.00811	0.00809
	C	0.00134	0.00092	0.00091
	C	0.01114	0.01071	0.01070
	D	0.00246	0.00215	0.00209
	D	0.01391	0.01358	0.01355

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00318	0.00315	0.00316
	A	0.00071	0.00068	0.00068
	B	0.00362	0.00360	0.00362
	B	0.00074	0.00071	0.00072
	C	0.00400	0.00399	0.00398
	C	0.00074	0.00072	0.00072
	D	0.00444	0.00442	0.00449
	D	0.00073	0.00070	0.00070
sky130_fd_sc_hs__nand4_2	A	0.00583	0.00578	0.00582
	A	0.00126	0.00120	0.00123
	B	0.00676	0.00672	0.00674
	B	0.00127	0.00122	0.00124
	C	0.00769	0.00770	0.00766
	C	0.00127	0.00123	0.00124
	D	0.00849	0.00846	0.00850
	D	0.00124	0.00119	0.00120
sky130_fd_sc_hs__nand4_4	A	0.00901	0.00894	0.00909
	A	0.00230	0.00222	0.00225
	B	0.01077	0.01074	0.01089
	B	0.00232	0.00226	0.00228
	C	0.01249	0.01243	0.01264
	C	0.00234	0.00228	0.00229
	D	0.01430	0.01428	0.01426
	D	0.00222	0.00216	0.00218

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(B * C * !D * Y)	0.00037	0.00037	0.00033
	(B * C * !D * Y)	-0.00101	-0.00101	-0.00109
	(B * !C * Y)	0.00036	0.00036	0.00033
	(B * !C * Y)	-0.00104	-0.00104	-0.00110
	(!B * Y)	0.00035	0.00035	0.00034
	(!B * Y)	-0.00108	-0.00108	-0.00110
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00067	0.00067	0.00058
	(B * C * !D * Y)	-0.00198	-0.00200	-0.00218
	(B * !C * Y)	0.00063	0.00063	0.00057
	(B * !C * Y)	-0.00207	-0.00209	-0.00220
	(!B * Y)	0.00064	0.00064	0.00061
	(!B * Y)	-0.00215	-0.00216	-0.00221
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00131	0.00131	0.00114
	(B * C * !D * Y)	-0.00228	-0.00231	-0.00264
	(B * !C * Y)	0.00123	0.00123	0.00113
	(B * !C * Y)	-0.00245	-0.00247	-0.00268
	(!B * Y)	0.00124	0.00124	0.00119
	(!B * Y)	-0.00260	-0.00262	-0.00270

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(B * C * !D * Y)	-0.00033	-0.00033	-0.00032
	(B * C * !D * Y)	0.00111	0.00111	0.00110
	(B * !C * Y)	-0.00033	-0.00033	-0.00032
	(B * !C * Y)	0.00111	0.00111	0.00110
	(!B * Y)	-0.00033	-0.00033	-0.00033
	(!B * Y)	0.00111	0.00111	0.00110
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00057	-0.00057	-0.00057
	(B * C * !D * Y)	0.00221	0.00224	0.00221
	(B * !C * Y)	-0.00057	-0.00058	-0.00057
	(B * !C * Y)	0.00222	0.00224	0.00221
	(!B * Y)	-0.00059	-0.00059	-0.00059
	(!B * Y)	0.00220	0.00224	0.00221
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00113	-0.00113	-0.00112
	(B * C * !D * Y)	0.00272	0.00273	0.00270
	(B * !C * Y)	-0.00113	-0.00113	-0.00112
	(B * !C * Y)	0.00272	0.00273	0.00270
	(!B * Y)	-0.00117	-0.00117	-0.00115
	(!B * Y)	0.00272	0.00273	0.00270

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nand4_1	**(A * C * !D * Y)**	0.00037	0.00037	0.00038
	(A * C * !D * Y)	-0.00098	-0.00098	-0.00098
	(A * !C * Y)	0.00039	0.00039	0.00039
	(A * !C * Y)	-0.00098	-0.00098	-0.00098
	(!A * C * D * Y)	0.00069	0.00069	0.00069
	(!A * C * D * Y)	-0.00099	-0.00099	-0.00098
	(!A * C * !D * Y)	0.00042	0.00042	0.00042
	(!A * C * !D * Y)	-0.00099	-0.00099	-0.00099
	(!A * !C * Y)	0.00042	0.00042	0.00042
	(!A * !C * Y)	-0.00099	-0.00099	-0.00099
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00077	0.00077	0.00079
	(A * C * !D * Y)	-0.00187	-0.00186	-0.00186
	(A * !C * Y)	0.00079	0.00079	0.00079
	(A * !C * Y)	-0.00187	-0.00187	-0.00188
	(!A * C * D * Y)	0.00144	0.00145	0.00145
	(!A * C * D * Y)	-0.00188	-0.00188	-0.00188
	(!A * C * !D * Y)	0.00089	0.00089	0.00089
	(!A * C * !D * Y)	-0.00189	-0.00189	-0.00188
	(!A * !C * Y)	0.00085	0.00085	0.00084
	(!A * !C * Y)	-0.00189	-0.00189	-0.00188
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00149	0.00150	0.00152
	(A * C * !D * Y)	-0.00196	-0.00197	-0.00195
	(A * !C * Y)	0.00153	0.00155	0.00154
	(A * !C * Y)	-0.00198	-0.00199	-0.00198
	(!A * C * D * Y)	0.00284	0.00286	0.00285
	(!A * C * D * Y)	-0.00197	-0.00199	-0.00198
	(!A * C * !D * Y)	0.00170	0.00171	0.00170
	(!A * C * !D * Y)	-0.00199	-0.00200	-0.00199
	(!A * !C * Y)	0.00163	0.00164	0.00163
	(!A * !C * Y)	-0.00199	-0.00200	-0.00199

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(A * C * !D * Y)	-0.00037	-0.00036	-0.00037
	(A * C * !D * Y)	0.00102	0.00101	0.00099
	(A * !C * Y)	-0.00037	-0.00037	-0.00038
	(A * !C * Y)	0.00102	0.00101	0.00099
	(!A * C * D * Y)	-0.00068	-0.00069	-0.00069
	(!A * C * D * Y)	0.00099	0.00100	0.00099
	(!A * C * !D * Y)	-0.00042	-0.00042	-0.00042
	(!A * C * !D * Y)	0.00099	0.00100	0.00099
	(!A * !C * Y)	-0.00042	-0.00042	-0.00042
	(!A * !C * Y)	0.00099	0.00100	0.00099
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00074	-0.00074	-0.00075
	(A * C * !D * Y)	0.00195	0.00194	0.00189
	(A * !C * Y)	-0.00075	-0.00075	-0.00077
	(A * !C * Y)	0.00195	0.00193	0.00189
	(!A * C * D * Y)	-0.00142	-0.00145	-0.00145
	(!A * C * D * Y)	0.00189	0.00189	0.00188
	(!A * C * !D * Y)	-0.00089	-0.00089	-0.00089
	(!A * C * !D * Y)	0.00189	0.00190	0.00189
	(!A * !C * Y)	-0.00085	-0.00085	-0.00084
	(!A * !C * Y)	0.00189	0.00190	0.00189

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00143	-0.00143	-0.00145
	(A * C * !D * Y)	0.00209	0.00208	0.00200
	(A * !C * Y)	-0.00146	-0.00146	-0.00149
	(A * !C * Y)	0.00209	0.00208	0.00200
	(!A * C * D * Y)	-0.00278	-0.00286	-0.00285
	(!A * C * D * Y)	0.00199	0.00199	0.00198
	(!A * C * !D * Y)	-0.00170	-0.00171	-0.00170
	(!A * C * !D * Y)	0.00200	0.00200	0.00199
	(!A * !C * Y)	-0.00163	-0.00164	-0.00163
	(!A * !C * Y)	0.00199	0.00201	0.00200

Passive power(pJ) for C rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nand4_1	**(A * B * !D * Y)**	0.00037	0.00037	0.00037
	(A * B * !D * Y)	-0.00097	-0.00097	-0.00097
	(A * !B * D * Y)	0.00068	0.00069	0.00068
	(A * !B * D * Y)	-0.00096	-0.00097	-0.00097
	(A * !B * !D * Y)	0.00041	0.00041	0.00041
	(A * !B * !D * Y)	-0.00097	-0.00097	-0.00097
	(!A * B * D * Y)	0.00066	0.00067	0.00066
	(!A * B * D * Y)	-0.00097	-0.00097	-0.00096
	(!A * B * !D * Y)	0.00040	0.00041	0.00040
	(!A * B * !D * Y)	-0.00097	-0.00097	-0.00097
	(!A * !B * D * Y)	0.00068	0.00069	0.00068
	(!A * !B * D * Y)	-0.00096	-0.00097	-0.00097
	(!A * !B * !D * Y)	0.00042	0.00042	0.00042
	(!A * !B * !D * Y)	-0.00096	-0.00097	-0.00097

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00080	0.00080	0.00080
	(A * B * !D * Y)	-0.00187	-0.00187	-0.00187
	(A * !B * D * Y)	0.00142	0.00143	0.00143
	(A * !B * D * Y)	-0.00186	-0.00188	-0.00187
	(A * !B * !D * Y)	0.00088	0.00088	0.00088
	(A * !B * !D * Y)	-0.00187	-0.00188	-0.00187
	(!A * B * D * Y)	0.00140	0.00140	0.00139
	(!A * B * D * Y)	-0.00187	-0.00188	-0.00187
	(!A * B * !D * Y)	0.00089	0.00090	0.00089
	(!A * B * !D * Y)	-0.00188	-0.00189	-0.00188
	(!A * !B * D * Y)	0.00142	0.00143	0.00143
	(!A * !B * D * Y)	-0.00187	-0.00188	-0.00187
	(!A * !B * !D * Y)	0.00090	0.00091	0.00090
	(!A * !B * !D * Y)	-0.00187	-0.00188	-0.00187
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00151	0.00152	0.00150
	(A * B * !D * Y)	-0.00194	-0.00195	-0.00194
	(A * !B * D * Y)	0.00275	0.00277	0.00277
	(A * !B * D * Y)	-0.00193	-0.00195	-0.00194
	(A * !B * !D * Y)	0.00165	0.00166	0.00165
	(A * !B * !D * Y)	-0.00194	-0.00195	-0.00194
	(!A * B * D * Y)	0.00269	0.00270	0.00269
	(!A * B * D * Y)	-0.00195	-0.00195	-0.00195
	(!A * B * !D * Y)	0.00165	0.00167	0.00165
	(!A * B * !D * Y)	-0.00195	-0.00197	-0.00195
	(!A * !B * D * Y)	0.00275	0.00279	0.00277
	(!A * !B * D * Y)	-0.00193	-0.00195	-0.00194
	(!A * !B * !D * Y)	0.00171	0.00171	0.00170
	(!A * !B * !D * Y)	-0.00195	-0.00195	-0.00194

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(A * B * !D * Y)	-0.00037	-0.00037	-0.00036
	(A * B * !D * Y)	0.00097	0.00098	0.00097
	(A * !B * D * Y)	-0.00067	-0.00069	-0.00068
	(A * !B * D * Y)	0.00097	0.00098	0.00097
	(A * !B * !D * Y)	-0.00041	-0.00041	-0.00041
	(A * !B * !D * Y)	0.00097	0.00098	0.00097
	(!A * B * D * Y)	-0.00064	-0.00067	-0.00066
	(!A * B * D * Y)	0.00097	0.00097	0.00097
	(!A * B * !D * Y)	-0.00040	-0.00041	-0.00040
	(!A * B * !D * Y)	0.00097	0.00098	0.00097
	(!A * !B * D * Y)	-0.00067	-0.00069	-0.00068
	(!A * !B * D * Y)	0.00097	0.00098	0.00097
	(!A * !B * !D * Y)	-0.00042	-0.00042	-0.00042
	(!A * !B * !D * Y)	0.00098	0.00098	0.00097
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00079	-0.00079	-0.00078
	(A * B * !D * Y)	0.00191	0.00190	0.00188
	(A * !B * D * Y)	-0.00139	-0.00143	-0.00143
	(A * !B * D * Y)	0.00187	0.00189	0.00188
	(A * !B * !D * Y)	-0.00088	-0.00088	-0.00088
	(A * !B * !D * Y)	0.00187	0.00189	0.00188
	(!A * B * D * Y)	-0.00134	-0.00140	-0.00139
	(!A * B * D * Y)	0.00189	0.00190	0.00188
	(!A * B * !D * Y)	-0.00089	-0.00090	-0.00089
	(!A * B * !D * Y)	0.00188	0.00189	0.00188
	(!A * !B * D * Y)	-0.00139	-0.00143	-0.00143
	(!A * !B * D * Y)	0.00187	0.00189	0.00188
	(!A * !B * !D * Y)	-0.00090	-0.00091	-0.00090
	(!A * !B * !D * Y)	0.00187	0.00189	0.00188

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00148	-0.00148	-0.00146
	(A * B * !D * Y)	0.00198	0.00197	0.00195
	(A * !B * D * Y)	-0.00270	-0.00277	-0.00277
	(A * !B * D * Y)	0.00194	0.00197	0.00195
	(A * !B * !D * Y)	-0.00165	-0.00166	-0.00165
	(A * !B * !D * Y)	0.00197	0.00196	0.00195
	(!A * B * D * Y)	-0.00258	-0.00270	-0.00269
	(!A * B * D * Y)	0.00196	0.00197	0.00195
	(!A * B * !D * Y)	-0.00165	-0.00167	-0.00165
	(!A * B * !D * Y)	0.00196	0.00197	0.00196
	(!A * !B * D * Y)	-0.00270	-0.00279	-0.00277
	(!A * !B * D * Y)	0.00194	0.00197	0.00195
	(!A * !B * !D * Y)	-0.00171	-0.00171	-0.00170
	(!A * !B * !D * Y)	0.00197	0.00196	0.00195

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	(A * B * !C * Y)	0.00069	0.00069	0.00069
	(A * B * !C * Y)	-0.00101	-0.00101	-0.00101
	(A * !B * C * Y)	0.00066	0.00067	0.00067
	(A * !B * C * Y)	-0.00100	-0.00101	-0.00101
	(A * !B * !C * Y)	0.00069	0.00069	0.00069
	(A * !B * !C * Y)	-0.00101	-0.00101	-0.00101
	(!A * B * C * Y)	0.00066	0.00066	0.00066
	(!A * B * C * Y)	-0.00101	-0.00101	-0.00101
	(!A * !C * Y)	0.00069	0.00069	0.00069
	(!A * !C * Y)	-0.00101	-0.00101	-0.00101
	(!A * !B * C * Y)	0.00067	0.00067	0.00067
	(!A * !B * C * Y)	-0.00101	-0.00101	-0.00101

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00146	0.00147	0.00146
	(A * B * !C * Y)	-0.00185	-0.00185	-0.00184
	(A * !B * C * Y)	0.00140	0.00141	0.00140
	(A * !B * C * Y)	-0.00184	-0.00185	-0.00184
	(A * !B * !C * Y)	0.00147	0.00146	0.00146
	(A * !B * !C * Y)	-0.00185	-0.00184	-0.00184
	(!A * B * C * Y)	0.00139	0.00140	0.00139
	(!A * B * C * Y)	-0.00185	-0.00186	-0.00185
	(!A * !C * Y)	0.00147	0.00145	0.00146
	(!A * !C * Y)	-0.00185	-0.00184	-0.00184
	(!A * !B * C * Y)	0.00141	0.00141	0.00140
	(!A * !B * C * Y)	-0.00185	-0.00185	-0.00184
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00293	0.00295	0.00292
	(A * B * !C * Y)	-0.00199	-0.00200	-0.00199
	(A * !B * C * Y)	0.00281	0.00283	0.00281
	(A * !B * C * Y)	-0.00198	-0.00199	-0.00199
	(A * !B * !C * Y)	0.00294	0.00295	0.00292
	(A * !B * !C * Y)	-0.00199	-0.00199	-0.00199
	(!A * B * C * Y)	0.00279	0.00280	0.00278
	(!A * B * C * Y)	-0.00199	-0.00200	-0.00199
	(!A * !C * Y)	0.00294	0.00294	0.00292
	(!A * !C * Y)	-0.00199	-0.00199	-0.00199
	(!A * !B * C * Y)	0.00282	0.00281	0.00281
	(!A * !B * C * Y)	-0.00199	-0.00198	-0.00199

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nand4_1	**(A * B * !C * Y)**	-0.00067	-0.00069	-0.00069
	(A * B * !C * Y)	0.00101	0.00102	0.00101
	(A * !B * C * Y)	-0.00066	-0.00067	-0.00067
	(A * !B * C * Y)	0.00102	0.00102	0.00101
	(A * !B * !C * Y)	-0.00067	-0.00069	-0.00069
	(A * !B * !C * Y)	0.00101	0.00102	0.00101
	(!A * B * C * Y)	-0.00065	-0.00066	-0.00066
	(!A * B * C * Y)	0.00102	0.00102	0.00101
	(!A * !C * Y)	-0.00067	-0.00069	-0.00069
	(!A * !C * Y)	0.00101	0.00102	0.00101
	(!A * !B * C * Y)	-0.00065	-0.00067	-0.00067
	(!A * !B * C * Y)	0.00101	0.00102	0.00101
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00144	-0.00147	-0.00146
	(A * B * !C * Y)	0.00186	0.00186	0.00185
	(A * !B * C * Y)	-0.00136	-0.00141	-0.00140
	(A * !B * C * Y)	0.00186	0.00186	0.00185
	(A * !B * !C * Y)	-0.00144	-0.00146	-0.00146
	(A * !B * !C * Y)	0.00186	0.00186	0.00185
	(!A * B * C * Y)	-0.00134	-0.00140	-0.00139
	(!A * B * C * Y)	0.00185	0.00186	0.00185
	(!A * !C * Y)	-0.00144	-0.00145	-0.00146
	(!A * !C * Y)	0.00186	0.00186	0.00185
	(!A * !B * C * Y)	-0.00136	-0.00141	-0.00140
	(!A * !B * C * Y)	0.00186	0.00186	0.00185

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00288	-0.00295	-0.00292
	(A * B * !C * Y)	0.00200	0.00201	0.00199
	(A * !B * C * Y)	-0.00273	-0.00283	-0.00281
	(A * !B * C * Y)	0.00200	0.00200	0.00199
	(A * !B * !C * Y)	-0.00288	-0.00295	-0.00292
	(A * !B * !C * Y)	0.00200	0.00201	0.00199
	(!A * B * C * Y)	-0.00268	-0.00280	-0.00278
	(!A * B * C * Y)	0.00199	0.00201	0.00199
	(!A * !C * Y)	-0.00288	-0.00294	-0.00292
	(!A * !C * Y)	0.00200	0.00201	0.00199
	(!A * !B * C * Y)	-0.00273	-0.00281	-0.00281
	(!A * !B * C * Y)	0.00200	0.00200	0.00199

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B_N	Y
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2b_1	7.99200
sky130_fd_sc_hs__nor2b_2	11.18880
sky130_fd_sc_hs__nor2b_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	Y
sky130_fd_sc_hs__nor2b_1	0.00248	0.00202	0.07804
sky130_fd_sc_hs__nor2b_2	0.00485	0.00236	0.15159
sky130_fd_sc_hs__nor2b_4	0.00803	0.00337	0.30318

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.00008	0.00010
sky130_fd_sc_hs__nor2b_2	0.00000	0.00013	0.00018
sky130_fd_sc_hs__nor2b_4	0.00000	0.00021	0.00025

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (FR)	0.46302	2.58737	14.27400
	B_N->Y (RR)	0.47239	2.21257	10.24840
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.41528	2.28901	14.30130
	B_N->Y (RR)	0.37722	1.88001	10.28290
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.31433	1.96837	14.22150
	B_N->Y (RR)	0.31020	1.62709	10.40470

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.06137	0.69337	4.32163
	B_N->Y (FF)	0.35485	1.31676	6.41305
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.05784	0.65178	4.31693
	B_N->Y (FF)	0.42725	1.40099	6.82909
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.06747	0.73940	5.26530
	B_N->Y (FF)	0.39663	1.37462	6.90669

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00033	0.00030	0.00030
	A	0.00233	0.00229	0.00230
	B_N	0.00374	0.00364	0.00358
	B_N	0.00211	0.00200	0.00195
sky130_fd_sc_hs__nor2b_2	A	0.00072	0.00066	0.00067
	A	0.00471	0.00465	0.00466
	B_N	0.00546	0.00537	0.00531
	B_N	0.00386	0.00376	0.00371
sky130_fd_sc_hs__nor2b_4	A	0.00104	0.00098	0.00101
	A	0.00759	0.00752	0.00754
	B_N	0.00806	0.00794	0.00789
	B_N	0.00570	0.00558	0.00555

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00226	0.00223	0.00219
	A	0.00029	0.00023	0.00021
	B_N	0.00205	0.00196	0.00197
	B_N	0.00369	0.00362	0.00360
sky130_fd_sc_hs__nor2b_2	A	0.00410	0.00399	0.00390
	A	0.00017	0.00003	-0.00005
	B_N	0.00339	0.00338	0.00339
	B_N	0.00500	0.00500	0.00500
sky130_fd_sc_hs__nor2b_4	A	0.00649	0.00627	0.00621
	A	0.00003	-0.00023	-0.00031
	B_N	0.00500	0.00496	0.00513
	B_N	0.00737	0.00741	0.00746

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00077	0.00078	0.00077
	(!B_N * !Y)	-0.00104	-0.00105	-0.00104
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00159	0.00159	0.00158
	(!B_N * !Y)	-0.00186	-0.00189	-0.00187
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00198	0.00197	0.00195
	(!B_N * !Y)	-0.00374	-0.00378	-0.00375

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00077	-0.00077	-0.00077
	(!B_N * !Y)	0.00105	0.00105	0.00104
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00158	-0.00159	-0.00158
	(!B_N * !Y)	0.00189	0.00189	0.00187
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00195	-0.00197	-0.00195
	(!B_N * !Y)	0.00375	0.00378	0.00375

Passive power(pJ) for B_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00235	0.00226	0.00220
	(A * !Y)	0.00056	0.00047	0.00042
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00312	0.00302	0.00293
	(A * !Y)	0.00110	0.00099	0.00092
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00491	0.00475	0.00463
	(A * !Y)	0.00189	0.00173	0.00162

Passive power(pJ) for B_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00081	0.00074	0.00072
	(A * !Y)	0.00260	0.00252	0.00250
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00161	0.00152	0.00149
	(A * !Y)	0.00362	0.00355	0.00350
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00197	0.00185	0.00181
	(A * !Y)	0.00498	0.00487	0.00481

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
x	1	0
1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2_1	4.79520
sky130_fd_sc_hs__nor2_2	7.99200
sky130_fd_sc_hs__nor2_4	14.38560
sky130_fd_sc_hs__nor2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nor2_1	0.00249	0.00259	0.07737
sky130_fd_sc_hs__nor2_2	0.00390	0.00378	0.15167
sky130_fd_sc_hs__nor2_4	0.00740	0.00754	0.29170
sky130_fd_sc_hs__nor2_8	0.01443	0.01485	0.56954

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.00005	0.00007
sky130_fd_sc_hs__nor2_2	0.00000	0.00008	0.00009
sky130_fd_sc_hs__nor2_4	0.00000	0.00016	0.00018
sky130_fd_sc_hs__nor2_8	0.00000	0.00031	0.00036

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (FR)	0.45498	2.57267	14.20680
	B->Y (FR)	0.39276	2.42012	13.63790
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.33459	2.21384	14.24300
	B->Y (FR)	0.23771	2.02568	13.63690
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.33217	1.98544	14.10370
	B->Y (FR)	0.23756	1.80050	13.51300
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.30769	1.79502	14.11060
	B->Y (FR)	0.22662	1.62492	13.55680

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.06167	0.69227	4.31071
	B->Y (RF)	0.05997	0.68326	4.29570
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.06663	0.78003	5.21645
	B->Y (RF)	0.06293	0.76288	5.19523
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.06650	0.73379	5.18296
	B->Y (RF)	0.06208	0.71090	5.14071
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.06486	0.68856	5.15804
	B->Y (RF)	0.06734	0.67234	5.14728

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00020	-0.00023	-0.00024
	A	0.00231	0.00227	0.00227
	B	-0.00024	-0.00028	-0.00029
	B	0.00200	0.00195	0.00195
sky130_fd_sc_hs__nor2_2	A	-0.00043	-0.00046	-0.00046
	A	0.00361	0.00358	0.00360
	B	-0.00029	-0.00033	-0.00032
	B	0.00293	0.00290	0.00292
sky130_fd_sc_hs__nor2_4	A	0.00023	0.00017	0.00018
	A	0.00805	0.00797	0.00799
	B	0.00003	-0.00004	-0.00002
	B	0.00656	0.00647	0.00651
sky130_fd_sc_hs__nor2_8	A	-0.00001	-0.00012	-0.00008
	A	0.01534	0.01516	0.01527
	B	-0.00047	-0.00061	-0.00054
	B	0.01240	0.01221	0.01236

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00271	0.00267	0.00262
	A	0.00024	0.00018	0.00015
	B	0.00219	0.00217	0.00216
	B	-0.00005	-0.00007	-0.00008
sky130_fd_sc_hs__nor2_2	A	0.00414	0.00403	0.00395
	A	0.00018	0.00006	-0.00001
	B	0.00250	0.00251	0.00251
	B	-0.00070	-0.00072	-0.00071
sky130_fd_sc_hs__nor2_4	A	0.00788	0.00764	0.00749
	A	0.00027	-0.00001	-0.00011
	B	0.00498	0.00493	0.00499
	B	-0.00150	-0.00159	-0.00154
sky130_fd_sc_hs__nor2_8	A	0.01512	0.01464	0.01442
	A	0.00017	-0.00038	-0.00054
	B	0.00989	0.00973	0.00996
	B	-0.00295	-0.00319	-0.00295

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00084	0.00084	0.00083
	(B * !Y)	-0.00088	-0.00090	-0.00089
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00107	0.00107	0.00106
	(B * !Y)	-0.00175	-0.00179	-0.00177
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00170	0.00170	0.00169
	(B * !Y)	-0.00354	-0.00360	-0.00358
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00330	0.00331	0.00325
	(B * !Y)	-0.00705	-0.00718	-0.00711

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00084	-0.00083	-0.00083
	(B * !Y)	0.00090	0.00090	0.00089
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00107	-0.00107	-0.00106
	(B * !Y)	0.00178	0.00179	0.00177
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00169	-0.00169	-0.00169
	(B * !Y)	0.00359	0.00360	0.00358
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00325	-0.00328	-0.00325
	(B * !Y)	0.00708	0.00718	0.00711

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00097	0.00095	0.00095
	(A * !Y)	-0.00060	-0.00059	-0.00058
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00106	0.00106	0.00106
	(A * !Y)	-0.00119	-0.00119	-0.00118
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00215	0.00215	0.00214
	(A * !Y)	-0.00236	-0.00235	-0.00234
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00419	0.00421	0.00420
	(A * !Y)	-0.00464	-0.00466	-0.00465

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00094	-0.00094	-0.00095
	(A * !Y)	0.00060	0.00060	0.00059
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00101	-0.00102	-0.00106
	(A * !Y)	0.00124	0.00124	0.00119
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00205	-0.00207	-0.00214
	(A * !Y)	0.00244	0.00243	0.00236
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00405	-0.00408	-0.00420
	(A * !Y)	0.00481	0.00481	0.00468

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C_N	Y
0	x	0	0
0	0	1	1
x	1	1	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3b_1	9.59040
sky130_fd_sc_hs__nor3b_2	15.98400
sky130_fd_sc_hs__nor3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	Y
sky130_fd_sc_hs__nor3b_1	0.00243	0.00254	0.00195	0.04588
sky130_fd_sc_hs__nor3b_2	0.00473	0.00474	0.00235	0.08983
sky130_fd_sc_hs__nor3b_4	0.00954	0.00947	0.00330	0.17195

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	0.00008	0.00014
sky130_fd_sc_hs__nor3b_2	0.00000	0.00014	0.00025
sky130_fd_sc_hs__nor3b_4	0.00000	0.00025	0.00048

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (FR)	0.94017	3.27994	14.33630
	B->Y (FR)	0.89390	3.19625	14.37390
	C_N->Y (RR)	0.79846	2.74466	10.39030
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.83596	2.89253	14.38590
	B->Y (FR)	0.77673	2.79377	14.40730
	C_N->Y (RR)	0.61338	2.29581	10.41000
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.80174	2.61133	14.33870
	B->Y (FR)	0.74673	2.51690	14.38700
	C_N->Y (RR)	0.63462	2.13139	10.77450

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.06353	0.65806	3.79833
	B->Y (RF)	0.06570	0.65884	3.80972
	C_N->Y (FF)	0.35971	1.29809	6.23445
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.05816	0.61694	3.77168
	B->Y (RF)	0.05896	0.60917	3.75037
	C_N->Y (FF)	0.43130	1.38073	6.65094
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.05771	0.59408	3.77548
	B->Y (RF)	0.05894	0.58681	3.75780
	C_N->Y (FF)	0.45805	1.38757	6.60298

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00083	0.00079	0.00078
	A	0.00312	0.00307	0.00307
	B	0.00073	0.00068	0.00067
	B	0.00287	0.00282	0.00281
	C_N	0.00402	0.00390	0.00384
	C_N	0.00265	0.00253	0.00246
sky130_fd_sc_hs__nor3b_2	A	0.00123	0.00115	0.00114
	A	0.00604	0.00596	0.00596
	B	0.00122	0.00114	0.00114
	B	0.00543	0.00534	0.00533
	C_N	0.00593	0.00580	0.00573
	C_N	0.00464	0.00451	0.00444
sky130_fd_sc_hs__nor3b_4	A	0.00223	0.00208	0.00208
	A	0.01194	0.01177	0.01179
	B	0.00234	0.00219	0.00220
	B	0.01087	0.01069	0.01069
	C_N	0.01072	0.01053	0.01049
	C_N	0.00924	0.00906	0.00902

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00279	0.00274	0.00264
	A	0.00055	0.00048	0.00041
	B	0.00240	0.00237	0.00230
	B	0.00029	0.00024	0.00018
	C_N	0.00218	0.00214	0.00211
	C_N	0.00356	0.00350	0.00348
sky130_fd_sc_hs__nor3b_2	A	0.00541	0.00530	0.00509
	A	0.00075	0.00061	0.00043
	B	0.00431	0.00423	0.00409
	B	0.00015	0.00004	-0.00008
	C_N	0.00371	0.00368	0.00369
	C_N	0.00500	0.00498	0.00498
sky130_fd_sc_hs__nor3b_4	A	0.01080	0.01059	0.01018
	A	0.00138	0.00107	0.00077
	B	0.00865	0.00846	0.00822
	B	0.00024	-0.00001	-0.00022
	C_N	0.00801	0.00803	0.00809
	C_N	0.00950	0.00951	0.00956

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * C_N * !Y)	0.00078	0.00078	0.00077
	(B * C_N * !Y)	-0.00086	-0.00087	-0.00087
	(B * !C_N * !Y)	0.00074	0.00074	0.00074
	(B * !C_N * !Y)	-0.00090	-0.00091	-0.00090
	(!B * !C_N * !Y)	0.00074	0.00074	0.00074
	(!B * !C_N * !Y)	-0.00085	-0.00087	-0.00086
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00156	0.00157	0.00156
	(B * C_N * !Y)	-0.00178	-0.00181	-0.00180
	(B * !C_N * !Y)	0.00156	0.00157	0.00156
	(B * !C_N * !Y)	-0.00178	-0.00181	-0.00180
	(!B * !C_N * !Y)	0.00157	0.00157	0.00156
	(!B * !C_N * !Y)	-0.00171	-0.00174	-0.00173
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00339	0.00338	0.00335
	(B * C_N * !Y)	-0.00339	-0.00345	-0.00343
	(B * !C_N * !Y)	0.00313	0.00312	0.00310
	(B * !C_N * !Y)	-0.00365	-0.00371	-0.00369
	(!B * !C_N * !Y)	0.00312	0.00311	0.00309
	(!B * !C_N * !Y)	-0.00351	-0.00357	-0.00355

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * C_N * !Y)	-0.00078	-0.00077	-0.00077
	(B * C_N * !Y)	0.00088	0.00087	0.00087
	(B * !C_N * !Y)	-0.00074	-0.00074	-0.00074
	(B * !C_N * !Y)	0.00091	0.00091	0.00090
	(!B * !C_N * !Y)	-0.00074	-0.00074	-0.00074
	(!B * !C_N * !Y)	0.00087	0.00087	0.00086
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00156	-0.00156	-0.00156
	(B * C_N * !Y)	0.00181	0.00181	0.00180
	(B * !C_N * !Y)	-0.00156	-0.00156	-0.00155
	(B * !C_N * !Y)	0.00181	0.00181	0.00180
	(!B * !C_N * !Y)	-0.00156	-0.00157	-0.00156
	(!B * !C_N * !Y)	0.00174	0.00174	0.00173
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00334	-0.00337	-0.00335
	(B * C_N * !Y)	0.00341	0.00345	0.00343
	(B * !C_N * !Y)	-0.00311	-0.00311	-0.00310
	(B * !C_N * !Y)	0.00370	0.00371	0.00369
	(!B * !C_N * !Y)	-0.00310	-0.00310	-0.00309
	(!B * !C_N * !Y)	0.00357	0.00357	0.00355

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(A * C_N * !Y)	0.00091	0.00091	0.00091
	(A * C_N * !Y)	-0.00064	-0.00065	-0.00064
	(A * !C_N * !Y)	0.00077	0.00078	0.00077
	(A * !C_N * !Y)	-0.00080	-0.00080	-0.00080
	(!A * !C_N * !Y)	0.00077	0.00078	0.00077
	(!A * !C_N * !Y)	-0.00099	-0.00100	-0.00100
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00160	0.00161	0.00160
	(A * C_N * !Y)	-0.00134	-0.00135	-0.00135
	(A * !C_N * !Y)	0.00155	0.00156	0.00155
	(A * !C_N * !Y)	-0.00145	-0.00144	-0.00143
	(!A * !C_N * !Y)	0.00156	0.00157	0.00155
	(!A * !C_N * !Y)	-0.00185	-0.00187	-0.00186
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00326	0.00327	0.00325
	(A * C_N * !Y)	-0.00269	-0.00269	-0.00269
	(A * !C_N * !Y)	0.00312	0.00314	0.00312
	(A * !C_N * !Y)	-0.00288	-0.00288	-0.00287
	(!A * !C_N * !Y)	0.00311	0.00315	0.00311
	(!A * !C_N * !Y)	-0.00370	-0.00374	-0.00372

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(A * C_N * !Y)	-0.00090	-0.00091	-0.00091
	(A * C_N * !Y)	0.00065	0.00065	0.00065
	(A * !C_N * !Y)	-0.00077	-0.00077	-0.00077
	(A * !C_N * !Y)	0.00080	0.00080	0.00080
	(!A * !C_N * !Y)	-0.00076	-0.00077	-0.00077
	(!A * !C_N * !Y)	0.00099	0.00100	0.00100
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00159	-0.00160	-0.00160
	(A * C_N * !Y)	0.00136	0.00137	0.00137
	(A * !C_N * !Y)	-0.00155	-0.00155	-0.00154
	(A * !C_N * !Y)	0.00145	0.00144	0.00143
	(!A * !C_N * !Y)	-0.00156	-0.00156	-0.00155
	(!A * !C_N * !Y)	0.00186	0.00187	0.00186
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00324	-0.00324	-0.00324
	(A * C_N * !Y)	0.00272	0.00272	0.00272
	(A * !C_N * !Y)	-0.00312	-0.00312	-0.00311
	(A * !C_N * !Y)	0.00288	0.00288	0.00287
	(!A * !C_N * !Y)	-0.00311	-0.00311	-0.00310
	(!A * !C_N * !Y)	0.00374	0.00374	0.00372

Passive power(pJ) for C_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00230	0.00221	0.00216
	(B * !Y)	0.00059	0.00050	0.00045
	(A * !B * !Y)	0.00238	0.00229	0.00220
	(A * !B * !Y)	0.00064	0.00054	0.00047
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00309	0.00299	0.00291
	(B * !Y)	0.00110	0.00099	0.00092
	(A * !B * !Y)	0.00327	0.00317	0.00301
	(A * !B * !Y)	0.00121	0.00109	0.00097
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00507	0.00493	0.00480
	(B * !Y)	0.00208	0.00193	0.00181
	(A * !B * !Y)	0.00540	0.00525	0.00499
	(A * !B * !Y)	0.00227	0.00211	0.00189

Passive power(pJ) for C_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00084	0.00077	0.00075
	(B * !Y)	0.00254	0.00247	0.00245
	(A * !B * !Y)	0.00084	0.00077	0.00075
	(A * !B * !Y)	0.00255	0.00248	0.00246
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00159	0.00150	0.00147
	(B * !Y)	0.00358	0.00350	0.00346
	(A * !B * !Y)	0.00159	0.00150	0.00147
	(A * !B * !Y)	0.00358	0.00350	0.00346
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00375	0.00364	0.00359
	(B * !Y)	0.00675	0.00664	0.00658
	(A * !B * !Y)	0.00375	0.00364	0.00359
	(A * !B * !Y)	0.00676	0.00665	0.00659

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	Y
0	0	0	1
0	x	1	0
x	1	x	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3_1	6.39360
sky130_fd_sc_hs__nor3_2	11.18880
sky130_fd_sc_hs__nor3_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nor3_1	0.00252	0.00275	0.00264	0.04545
sky130_fd_sc_hs__nor3_2	0.00387	0.00404	0.00383	0.09171
sky130_fd_sc_hs__nor3_4	0.00845	0.00844	0.00823	0.17513

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3_1	0.00000	0.00005	0.00010
sky130_fd_sc_hs__nor3_2	0.00000	0.00009	0.00013
sky130_fd_sc_hs__nor3_4	0.00000	0.00018	0.00025

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (FR)	0.97406	3.29704	14.27320
	B->Y (FR)	0.93980	3.22367	14.33000
	C->Y (FR)	0.74828	2.93254	13.51890
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.69538	2.75653	14.30000
	B->Y (FR)	0.65172	2.67127	14.32300
	C->Y (FR)	0.41278	2.33894	13.47840
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.71155	2.53634	14.37470
	B->Y (FR)	0.64076	2.42197	14.37750
	C->Y (FR)	0.40356	2.09378	13.53110

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.06486	0.66053	3.79392
	B->Y (RF)	0.06746	0.66104	3.80135
	C->Y (RF)	0.06502	0.65045	3.78241
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.07039	0.74492	4.57074
	B->Y (RF)	0.07167	0.73492	4.54302
	C->Y (RF)	0.06701	0.71576	4.51302
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.06834	0.70899	4.54064
	B->Y (RF)	0.07147	0.70086	4.53679
	C->Y (RF)	0.07180	0.68325	4.50663

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00015	0.00010	0.00009
	A	0.00327	0.00322	0.00321
	B	0.00018	0.00012	0.00011
	B	0.00302	0.00296	0.00295
	C	0.00015	0.00008	0.00007
	C	0.00269	0.00263	0.00262
sky130_fd_sc_hs__nor3_2	A	0.00008	0.00004	0.00004
	A	0.00485	0.00480	0.00481
	B	0.00024	0.00020	0.00019
	B	0.00445	0.00440	0.00439
	C	0.00024	0.00018	0.00018
	C	0.00366	0.00360	0.00359
sky130_fd_sc_hs__nor3_4	A	-0.00003	-0.00013	-0.00012
	A	0.01036	0.01024	0.01026
	B	-0.00000	-0.00012	-0.00011
	B	0.00890	0.00877	0.00877
	C	-0.00031	-0.00040	-0.00041
	C	0.00747	0.00738	0.00736

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00361	0.00356	0.00346
	A	0.00057	0.00051	0.00043
	B	0.00314	0.00310	0.00302
	B	0.00034	0.00029	0.00023
	C	0.00250	0.00249	0.00246
	C	-0.00003	-0.00005	-0.00009
sky130_fd_sc_hs__nor3_2	A	0.00539	0.00528	0.00509
	A	0.00083	0.00070	0.00055
	B	0.00435	0.00425	0.00411
	B	0.00026	0.00014	0.00003
	C	0.00275	0.00274	0.00271
	C	-0.00065	-0.00068	-0.00070
sky130_fd_sc_hs__nor3_4	A	0.01174	0.01147	0.01104
	A	0.00178	0.00146	0.00114
	B	0.00928	0.00906	0.00883
	B	0.00054	0.00030	0.00012
	C	0.00640	0.00633	0.00633
	C	-0.00134	-0.00146	-0.00144

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00086	0.00086	0.00085
	(B * C * !Y)	-0.00088	-0.00089	-0.00088
	(B * !C * !Y)	0.00086	0.00086	0.00085
	(B * !C * !Y)	-0.00088	-0.00089	-0.00089
	(!B * C * !Y)	0.00086	0.00086	0.00085
	(!B * C * !Y)	-0.00083	-0.00085	-0.00084
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00101	0.00101	0.00100
	(B * C * !Y)	-0.00172	-0.00175	-0.00173
	(B * !C * !Y)	0.00101	0.00101	0.00100
	(B * !C * !Y)	-0.00172	-0.00175	-0.00173
	(!B * C * !Y)	0.00101	0.00101	0.00101
	(!B * C * !Y)	-0.00161	-0.00167	-0.00164
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00193	0.00194	0.00192
	(B * C * !Y)	-0.00367	-0.00373	-0.00370
	(B * !C * !Y)	0.00193	0.00194	0.00192
	(B * !C * !Y)	-0.00367	-0.00373	-0.00370
	(!B * C * !Y)	0.00191	0.00193	0.00192
	(!B * C * !Y)	-0.00344	-0.00353	-0.00351

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00086	-0.00086	-0.00085
	(B * C * !Y)	0.00089	0.00089	0.00088
	(B * !C * !Y)	-0.00086	-0.00086	-0.00085
	(B * !C * !Y)	0.00090	0.00089	0.00089
	(!B * C * !Y)	-0.00085	-0.00085	-0.00085
	(!B * C * !Y)	0.00084	0.00085	0.00084
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00100	-0.00101	-0.00100
	(B * C * !Y)	0.00173	0.00175	0.00173
	(B * !C * !Y)	-0.00100	-0.00101	-0.00100
	(B * !C * !Y)	0.00173	0.00175	0.00173
	(!B * C * !Y)	-0.00101	-0.00101	-0.00101
	(!B * C * !Y)	0.00165	0.00167	0.00164
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00193	-0.00193	-0.00192
	(B * C * !Y)	0.00373	0.00373	0.00370
	(B * !C * !Y)	-0.00191	-0.00193	-0.00192
	(B * !C * !Y)	0.00368	0.00373	0.00370
	(!B * C * !Y)	-0.00191	-0.00192	-0.00192
	(!B * C * !Y)	0.00353	0.00353	0.00351

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00088	0.00089	0.00088
	(A * C * !Y)	-0.00066	-0.00065	-0.00065
	(A * !C * !Y)	0.00088	0.00089	0.00088
	(A * !C * !Y)	-0.00063	-0.00063	-0.00063
	(!A * C * !Y)	0.00089	0.00088	0.00088
	(!A * C * !Y)	-0.00084	-0.00085	-0.00085
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00088	0.00089	0.00088
	(A * C * !Y)	-0.00144	-0.00144	-0.00143
	(A * !C * !Y)	0.00089	0.00090	0.00088
	(A * !C * !Y)	-0.00138	-0.00139	-0.00140
	(!A * C * !Y)	0.00089	0.00089	0.00088
	(!A * C * !Y)	-0.00180	-0.00183	-0.00182
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00208	0.00210	0.00207
	(A * C * !Y)	-0.00267	-0.00267	-0.00265
	(A * !C * !Y)	0.00209	0.00209	0.00207
	(A * !C * !Y)	-0.00259	-0.00258	-0.00257
	(!A * C * !Y)	0.00208	0.00210	0.00207
	(!A * C * !Y)	-0.00341	-0.00346	-0.00344

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00088	-0.00088	-0.00088
	(A * C * !Y)	0.00066	0.00065	0.00065
	(A * !C * !Y)	-0.00088	-0.00088	-0.00088
	(A * !C * !Y)	0.00064	0.00064	0.00064
	(!A * C * !Y)	-0.00087	-0.00088	-0.00088
	(!A * C * !Y)	0.00084	0.00085	0.00085
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00088	-0.00088	-0.00088
	(A * C * !Y)	0.00144	0.00144	0.00143
	(A * !C * !Y)	-0.00087	-0.00088	-0.00088
	(A * !C * !Y)	0.00142	0.00142	0.00142
	(!A * C * !Y)	-0.00088	-0.00088	-0.00088
	(!A * C * !Y)	0.00183	0.00183	0.00182
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00208	-0.00208	-0.00207
	(A * C * !Y)	0.00267	0.00267	0.00265
	(A * !C * !Y)	-0.00207	-0.00208	-0.00207
	(A * !C * !Y)	0.00261	0.00261	0.00261
	(!A * C * !Y)	-0.00207	-0.00208	-0.00207
	(!A * C * !Y)	0.00343	0.00346	0.00344

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00094	0.00094	0.00093
	(B * !Y)	-0.00059	-0.00059	-0.00059
	(A * !B * !Y)	0.00093	0.00094	0.00093
	(A * !B * !Y)	-0.00058	-0.00059	-0.00058
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00107	0.00105	0.00105
	(B * !Y)	-0.00120	-0.00118	-0.00117
	(A * !B * !Y)	0.00105	0.00105	0.00105
	(A * !B * !Y)	-0.00118	-0.00118	-0.00117
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00239	0.00238	0.00237
	(B * !Y)	-0.00242	-0.00241	-0.00240
	(A * !B * !Y)	0.00239	0.00238	0.00237
	(A * !B * !Y)	-0.00242	-0.00241	-0.00240

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00092	-0.00093	-0.00093
	(B * !Y)	0.00060	0.00060	0.00059
	(A * !B * !Y)	-0.00085	-0.00085	-0.00092
	(A * !B * !Y)	0.00065	0.00065	0.00059
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00100	-0.00101	-0.00105
	(B * !Y)	0.00122	0.00122	0.00118
	(A * !B * !Y)	-0.00083	-0.00085	-0.00102
	(A * !B * !Y)	0.00134	0.00133	0.00120
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00230	-0.00232	-0.00237
	(B * !Y)	0.00247	0.00247	0.00242
	(A * !B * !Y)	-0.00194	-0.00197	-0.00232
	(A * !B * !Y)	0.00270	0.00270	0.00245

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	Y
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4bb_1	15.98400
sky130_fd_sc_hs__nor4bb_2	23.97600
sky130_fd_sc_hs__nor4bb_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	Y
sky130_fd_sc_hs__nor4bb_1	0.00255	0.00263	0.00209	0.00205	0.03108
sky130_fd_sc_hs__nor4bb_2	0.00466	0.00496	0.00244	0.00231	0.06137
sky130_fd_sc_hs__nor4bb_4	0.00925	0.00983	0.00334	0.00325	0.12082

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	0.00012	0.00021
sky130_fd_sc_hs__nor4bb_2	0.00000	0.00018	0.00036
sky130_fd_sc_hs__nor4bb_4	0.00000	0.00031	0.00068

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (FR)	1.61390	4.06726	14.53010
	B->Y (FR)	1.58007	3.99628	14.49130
	C_N->Y (RR)	1.53827	3.62818	10.90310
	D_N->Y (RR)	1.13114	3.20335	10.37180
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	1.47126	3.66487	14.75720
	B->Y (FR)	1.41504	3.56069	14.66250
	C_N->Y (RR)	1.33722	3.16720	11.05620
	D_N->Y (RR)	0.92671	2.73578	10.53640
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	1.41491	3.32689	14.75150
	B->Y (FR)	1.36621	3.24035	14.68050
	C_N->Y (RR)	1.26101	2.86022	11.29230
	D_N->Y (RR)	0.88261	2.48045	10.87400

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.06603	0.64275	3.50311
	B->Y (RF)	0.06680	0.63957	3.48294
	C_N->Y (FF)	0.42503	1.34439	6.30331
	D_N->Y (FF)	0.37219	1.29338	6.14336
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.06031	0.60496	3.48156
	B->Y (RF)	0.06169	0.60461	3.47196
	C_N->Y (FF)	0.47023	1.40602	6.65222
	D_N->Y (FF)	0.43330	1.36897	6.56930
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.06136	0.59243	3.53045
	B->Y (RF)	0.06186	0.58774	3.49093
	C_N->Y (FF)	0.46159	1.37316	6.47459
	D_N->Y (FF)	0.45617	1.36831	6.47301

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00146	0.00140	0.00139
	A	0.00397	0.00391	0.00390
	B	0.00144	0.00138	0.00137
	B	0.00372	0.00366	0.00364
	C_N	0.00515	0.00501	0.00494
	C_N	0.00374	0.00360	0.00352
	D_N	0.00441	0.00428	0.00421
	D_N	0.00316	0.00303	0.00296
sky130_fd_sc_hs__nor4bb_2	A	0.00264	0.00255	0.00254
	A	0.00750	0.00740	0.00738
	B	0.00261	0.00251	0.00250
	B	0.00699	0.00687	0.00685
	C_N	0.00748	0.00733	0.00725
	C_N	0.00623	0.00608	0.00600
	D_N	0.00664	0.00649	0.00640
	D_N	0.00554	0.00539	0.00530
sky130_fd_sc_hs__nor4bb_4	A	0.00544	0.00525	0.00525
	A	0.01480	0.01460	0.01457
	B	0.00531	0.00513	0.00512
	B	0.01393	0.01374	0.01366
	C_N	0.01360	0.01335	0.01329
	C_N	0.01222	0.01199	0.01192
	D_N	0.01192	0.01170	0.01162
	D_N	0.01066	0.01043	0.01035

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00320	0.00315	0.00301
	A	0.00076	0.00069	0.00057
	B	0.00281	0.00277	0.00265
	B	0.00055	0.00049	0.00039
	C_N	0.00299	0.00286	0.00282
	C_N	0.00442	0.00432	0.00423
	D_N	0.00230	0.00224	0.00220
	D_N	0.00355	0.00348	0.00345
sky130_fd_sc_hs__nor4bb_2	A	0.00608	0.00596	0.00562
	A	0.00142	0.00127	0.00099
	B	0.00503	0.00495	0.00472
	B	0.00072	0.00060	0.00038
	C_N	0.00511	0.00498	0.00484
	C_N	0.00638	0.00626	0.00609
	D_N	0.00389	0.00383	0.00385
	D_N	0.00499	0.00495	0.00495
sky130_fd_sc_hs__nor4bb_4	A	0.01163	0.01140	0.01076
	A	0.00264	0.00233	0.00184
	B	0.01004	0.00985	0.00935
	B	0.00158	0.00131	0.00087
	C_N	0.00938	0.00918	0.00895
	C_N	0.01076	0.01059	0.01033
	D_N	0.00804	0.00799	0.00806
	D_N	0.00932	0.00927	0.00932

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4bb_1	**(B * C_N * D_N * !Y)**	0.00089	0.00089	0.00088
	(B * C_N * D_N * !Y)	-0.00086	-0.00088	-0.00087
	(B * !D_N * !Y)	0.00089	0.00089	0.00088
	(B * !D_N * !Y)	-0.00086	-0.00088	-0.00087
	(B * !C_N * D_N * !Y)	0.00082	0.00082	0.00081
	(B * !C_N * D_N * !Y)	-0.00093	-0.00095	-0.00094
	(!B * C_N * !D_N * !Y)	0.00092	0.00091	0.00090
	(!B * C_N * !D_N * !Y)	-0.00081	-0.00083	-0.00082
	(!B * !C_N * D_N * !Y)	0.00082	0.00081	0.00081
	(!B * !C_N * D_N * !Y)	-0.00089	-0.00091	-0.00090
	(!B * !C_N * !D_N * !Y)	0.00082	0.00081	0.00081
	(!B * !C_N * !D_N * !Y)	-0.00089	-0.00091	-0.00090
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00155	0.00156	0.00154
	(B * C_N * D_N * !Y)	-0.00177	-0.00181	-0.00179
	(B * !D_N * !Y)	0.00155	0.00156	0.00155
	(B * !D_N * !Y)	-0.00177	-0.00181	-0.00179
	(B * !C_N * D_N * !Y)	0.00155	0.00155	0.00154
	(B * !C_N * D_N * !Y)	-0.00177	-0.00181	-0.00180
	(!B * C_N * !D_N * !Y)	0.00164	0.00161	0.00159
	(!B * C_N * !D_N * !Y)	-0.00167	-0.00171	-0.00169
	(!B * !C_N * D_N * !Y)	0.00155	0.00155	0.00154
	(!B * !C_N * D_N * !Y)	-0.00170	-0.00173	-0.00172
	(!B * !C_N * !D_N * !Y)	0.00155	0.00155	0.00154
	(!B * !C_N * !D_N * !Y)	-0.00170	-0.00173	-0.00172

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00302	0.00302	0.00300
	(B * C_N * D_N * !Y)	-0.00344	-0.00349	-0.00347
	(B * !D_N * !Y)	0.00304	0.00303	0.00301
	(B * !D_N * !Y)	-0.00344	-0.00349	-0.00346
	(B * !C_N * D_N * !Y)	0.00301	0.00302	0.00299
	(B * !C_N * D_N * !Y)	-0.00345	-0.00350	-0.00348
	(!B * C_N * !D_N * !Y)	0.00316	0.00313	0.00308
	(!B * C_N * !D_N * !Y)	-0.00320	-0.00328	-0.00326
	(!B * !C_N * D_N * !Y)	0.00298	0.00300	0.00299
	(!B * !C_N * D_N * !Y)	-0.00325	-0.00333	-0.00331
	(!B * !C_N * !D_N * !Y)	0.00298	0.00300	0.00299
	(!B * !C_N * !D_N * !Y)	-0.00326	-0.00333	-0.00331

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4bb_1	**(B * C_N * D_N * !Y)**	-0.00089	-0.00088	-0.00088
	(B * C_N * D_N * !Y)	0.00089	0.00088	0.00087
	(B * !D_N * !Y)	-0.00089	-0.00088	-0.00088
	(B * !D_N * !Y)	0.00088	0.00088	0.00087
	(B * !C_N * D_N * !Y)	-0.00081	-0.00081	-0.00081
	(B * !C_N * D_N * !Y)	0.00095	0.00095	0.00094
	(!B * C_N * !D_N * !Y)	-0.00092	-0.00091	-0.00090
	(!B * C_N * !D_N * !Y)	0.00083	0.00083	0.00082
	(!B * !C_N * D_N * !Y)	-0.00081	-0.00081	-0.00081
	(!B * !C_N * D_N * !Y)	0.00091	0.00091	0.00090
	(!B * !C_N * !D_N * !Y)	-0.00081	-0.00081	-0.00081
	(!B * !C_N * !D_N * !Y)	0.00090	0.00091	0.00090

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00155	-0.00155	-0.00154
	(B * C_N * D_N * !Y)	0.00180	0.00181	0.00179
	(B * !D_N * !Y)	-0.00155	-0.00155	-0.00154
	(B * !D_N * !Y)	0.00180	0.00181	0.00179
	(B * !C_N * D_N * !Y)	-0.00154	-0.00155	-0.00154
	(B * !C_N * D_N * !Y)	0.00180	0.00181	0.00180
	(!B * C_N * !D_N * !Y)	-0.00163	-0.00161	-0.00159
	(!B * C_N * !D_N * !Y)	0.00170	0.00171	0.00169
	(!B * !C_N * D_N * !Y)	-0.00154	-0.00155	-0.00154
	(!B * !C_N * D_N * !Y)	0.00172	0.00173	0.00172
	(!B * !C_N * !D_N * !Y)	-0.00154	-0.00155	-0.00154
	(!B * !C_N * !D_N * !Y)	0.00172	0.00173	0.00172
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00299	-0.00300	-0.00299
	(B * C_N * D_N * !Y)	0.00346	0.00349	0.00347
	(B * !D_N * !Y)	-0.00301	-0.00302	-0.00301
	(B * !D_N * !Y)	0.00348	0.00349	0.00346
	(B * !C_N * D_N * !Y)	-0.00300	-0.00300	-0.00299
	(B * !C_N * D_N * !Y)	0.00350	0.00350	0.00348
	(!B * C_N * !D_N * !Y)	-0.00315	-0.00313	-0.00308
	(!B * C_N * !D_N * !Y)	0.00328	0.00328	0.00326
	(!B * !C_N * D_N * !Y)	-0.00298	-0.00300	-0.00299
	(!B * !C_N * D_N * !Y)	0.00333	0.00333	0.00331
	(!B * !C_N * !D_N * !Y)	-0.00298	-0.00300	-0.00298
	(!B * !C_N * !D_N * !Y)	0.00333	0.00333	0.00331

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4bb_1	**(A * C_N * D_N * !Y)**	0.00094	0.00095	0.00095
	(A * C_N * D_N * !Y)	-0.00064	-0.00064	-0.00064
	(A * C_N * !D_N * !Y)	0.00099	0.00100	0.00100
	(A * C_N * !D_N * !Y)	-0.00067	-0.00067	-0.00066
	(A * !C_N * D_N * !Y)	0.00085	0.00085	0.00085
	(A * !C_N * D_N * !Y)	-0.00078	-0.00078	-0.00078
	(A * !C_N * !D_N * !Y)	0.00086	0.00085	0.00085
	(A * !C_N * !D_N * !Y)	-0.00079	-0.00080	-0.00079
	(!A * C_N * !D_N * !Y)	0.00101	0.00099	0.00097
	(!A * C_N * !D_N * !Y)	-0.00080	-0.00081	-0.00081
	(!A * !C_N * D_N * !Y)	0.00085	0.00086	0.00085
	(!A * !C_N * D_N * !Y)	-0.00095	-0.00096	-0.00096
	(!A * !C_N * !D_N * !Y)	0.00085	0.00086	0.00085
	(!A * !C_N * !D_N * !Y)	-0.00095	-0.00096	-0.00096
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00167	0.00168	0.00167
	(A * C_N * D_N * !Y)	-0.00140	-0.00140	-0.00140
	(A * C_N * !D_N * !Y)	0.00176	0.00177	0.00177
	(A * C_N * !D_N * !Y)	-0.00145	-0.00146	-0.00145
	(A * !C_N * D_N * !Y)	0.00161	0.00163	0.00162
	(A * !C_N * D_N * !Y)	-0.00154	-0.00154	-0.00153
	(A * !C_N * !D_N * !Y)	0.00163	0.00163	0.00162
	(A * !C_N * !D_N * !Y)	-0.00156	-0.00156	-0.00155
	(!A * C_N * !D_N * !Y)	0.00180	0.00176	0.00171
	(!A * C_N * !D_N * !Y)	-0.00175	-0.00177	-0.00176
	(!A * !C_N * D_N * !Y)	0.00162	0.00164	0.00161
	(!A * !C_N * D_N * !Y)	-0.00190	-0.00192	-0.00191
	(!A * !C_N * !D_N * !Y)	0.00162	0.00164	0.00161
	(!A * !C_N * !D_N * !Y)	-0.00190	-0.00192	-0.00191

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00324	0.00326	0.00322
	(A * C_N * D_N * !Y)	-0.00279	-0.00280	-0.00277
	(A * C_N * !D_N * !Y)	0.00341	0.00346	0.00346
	(A * C_N * !D_N * !Y)	-0.00286	-0.00287	-0.00285
	(A * !C_N * D_N * !Y)	0.00311	0.00314	0.00310
	(A * !C_N * D_N * !Y)	-0.00304	-0.00305	-0.00303
	(A * !C_N * !D_N * !Y)	0.00313	0.00313	0.00309
	(A * !C_N * !D_N * !Y)	-0.00311	-0.00311	-0.00309
	(!A * C_N * !D_N * !Y)	0.00350	0.00345	0.00333
	(!A * C_N * !D_N * !Y)	-0.00339	-0.00346	-0.00343
	(!A * !C_N * D_N * !Y)	0.00310	0.00311	0.00310
	(!A * !C_N * D_N * !Y)	-0.00373	-0.00379	-0.00376
	(!A * !C_N * !D_N * !Y)	0.00309	0.00310	0.00309
	(!A * !C_N * !D_N * !Y)	-0.00374	-0.00379	-0.00377

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4bb_1	**(A * C_N * D_N * !Y)**	-0.00094	-0.00094	-0.00094
	(A * C_N * D_N * !Y)	0.00065	0.00065	0.00065
	(A * C_N * !D_N * !Y)	-0.00097	-0.00097	-0.00097
	(A * C_N * !D_N * !Y)	0.00067	0.00067	0.00066
	(A * !C_N * D_N * !Y)	-0.00085	-0.00085	-0.00085
	(A * !C_N * D_N * !Y)	0.00078	0.00078	0.00078
	(A * !C_N * !D_N * !Y)	-0.00085	-0.00085	-0.00085
	(A * !C_N * !D_N * !Y)	0.00079	0.00080	0.00079
	(!A * C_N * !D_N * !Y)	-0.00100	-0.00099	-0.00097
	(!A * C_N * !D_N * !Y)	0.00081	0.00081	0.00081
	(!A * !C_N * D_N * !Y)	-0.00085	-0.00085	-0.00085
	(!A * !C_N * D_N * !Y)	0.00096	0.00096	0.00096
	(!A * !C_N * !D_N * !Y)	-0.00085	-0.00085	-0.00085
	(!A * !C_N * !D_N * !Y)	0.00096	0.00096	0.00096
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00166	-0.00166	-0.00167
	(A * C_N * D_N * !Y)	0.00142	0.00142	0.00142
	(A * C_N * !D_N * !Y)	-0.00171	-0.00172	-0.00171
	(A * C_N * !D_N * !Y)	0.00145	0.00146	0.00145
	(A * !C_N * D_N * !Y)	-0.00161	-0.00162	-0.00161
	(A * !C_N * D_N * !Y)	0.00154	0.00154	0.00153
	(A * !C_N * !D_N * !Y)	-0.00161	-0.00162	-0.00161
	(A * !C_N * !D_N * !Y)	0.00156	0.00156	0.00155
	(!A * C_N * !D_N * !Y)	-0.00179	-0.00176	-0.00171
	(!A * C_N * !D_N * !Y)	0.00177	0.00177	0.00176
	(!A * !C_N * D_N * !Y)	-0.00162	-0.00162	-0.00161
	(!A * !C_N * D_N * !Y)	0.00192	0.00192	0.00191
	(!A * !C_N * !D_N * !Y)	-0.00161	-0.00162	-0.00161
	(!A * !C_N * !D_N * !Y)	0.00192	0.00192	0.00191

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00320	-0.00321	-0.00321
	(A * C_N * D_N * !Y)	0.00283	0.00283	0.00282
	(A * C_N * !D_N * !Y)	-0.00334	-0.00335	-0.00333
	(A * C_N * !D_N * !Y)	0.00286	0.00287	0.00285
	(A * !C_N * D_N * !Y)	-0.00310	-0.00311	-0.00309
	(A * !C_N * D_N * !Y)	0.00304	0.00305	0.00303
	(A * !C_N * !D_N * !Y)	-0.00310	-0.00310	-0.00308
	(A * !C_N * !D_N * !Y)	0.00311	0.00311	0.00309
	(!A * C_N * !D_N * !Y)	-0.00349	-0.00345	-0.00333
	(!A * C_N * !D_N * !Y)	0.00345	0.00346	0.00343
	(!A * !C_N * D_N * !Y)	-0.00308	-0.00311	-0.00309
	(!A * !C_N * D_N * !Y)	0.00374	0.00379	0.00376
	(!A * !C_N * !D_N * !Y)	-0.00309	-0.00310	-0.00308
	(!A * !C_N * !D_N * !Y)	0.00378	0.00380	0.00377

Passive power(pJ) for C_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00267	0.00259	0.00252
	(B * !Y)	0.00081	0.00072	0.00066
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00271	0.00263	0.00256
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00081	0.00072	0.00067
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00315	0.00306	0.00300
	(B * !Y)	0.00114	0.00104	0.00098
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00326	0.00317	0.00309
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00116	0.00106	0.00101
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00514	0.00501	0.00489
	(B * !Y)	0.00230	0.00216	0.00206
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00527	0.00513	0.00505
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00228	0.00213	0.00209

Passive power(pJ) for C_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00108	0.00100	0.00097
	(B * !Y)	0.00295	0.00287	0.00283
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00109	0.00101	0.00097
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00294	0.00287	0.00283
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00188	0.00179	0.00176
	(B * !Y)	0.00390	0.00381	0.00377
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00188	0.00179	0.00176
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00390	0.00382	0.00377
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00332	0.00320	0.00310
	(B * !Y)	0.00614	0.00602	0.00592
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00333	0.00320	0.00311
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00616	0.00604	0.00593

Passive power(pJ) for D_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * C_N * !Y)	0.00237	0.00228	0.00219
	(B * C_N * !Y)	0.00069	0.00059	0.00051
	(A * !B * C_N * !Y)	0.00244	0.00235	0.00224
	(A * !B * C_N * !Y)	0.00073	0.00062	0.00053
	(!C_N * !Y)	0.00251	0.00241	0.00235
	(!C_N * !Y)	0.00083	0.00073	0.00067
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00307	0.00297	0.00284
	(B * C_N * !Y)	0.00122	0.00113	0.00100
	(A * !B * C_N * !Y)	0.00325	0.00314	0.00295
	(A * !B * C_N * !Y)	0.00133	0.00123	0.00105
	(!C_N * !Y)	0.00316	0.00307	0.00300
	(!C_N * !Y)	0.00133	0.00124	0.00117
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00482	0.00467	0.00441
	(B * C_N * !Y)	0.00213	0.00198	0.00174
	(A * !B * C_N * !Y)	0.00513	0.00496	0.00459
	(A * !B * C_N * !Y)	0.00232	0.00216	0.00184
	(!C_N * !Y)	0.00498	0.00485	0.00471
	(!C_N * !Y)	0.00233	0.00219	0.00206

Passive power(pJ) for D_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * C_N * !Y)	0.00097	0.00090	0.00086
	(B * C_N * !Y)	0.00265	0.00258	0.00255
	(A * !B * C_N * !Y)	0.00097	0.00090	0.00086
	(A * !B * C_N * !Y)	0.00265	0.00258	0.00255
	(!C_N * !Y)	0.00078	0.00071	0.00068
	(!C_N * !Y)	0.00246	0.00239	0.00236
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00172	0.00165	0.00162
	(B * C_N * !Y)	0.00356	0.00348	0.00345
	(A * !B * C_N * !Y)	0.00172	0.00165	0.00162
	(A * !B * C_N * !Y)	0.00356	0.00348	0.00345
	(!C_N * !Y)	0.00149	0.00141	0.00138
	(!C_N * !Y)	0.00333	0.00325	0.00322
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00397	0.00386	0.00381
	(B * C_N * !Y)	0.00663	0.00653	0.00647
	(A * !B * C_N * !Y)	0.00397	0.00386	0.00381
	(A * !B * C_N * !Y)	0.00664	0.00653	0.00647
	(!C_N * !Y)	0.00354	0.00343	0.00338
	(!C_N * !Y)	0.00620	0.00609	0.00603

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	Y
0	0	x	0	0
0	0	0	1	1
0	x	1	1	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4b_1	11.18880
sky130_fd_sc_hs__nor4b_2	19.18080
sky130_fd_sc_hs__nor4b_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	Y
sky130_fd_sc_hs__nor4b_1	0.00245	0.00256	0.00255	0.00199	0.03141
sky130_fd_sc_hs__nor4b_2	0.00476	0.00488	0.00493	0.00235	0.06117
sky130_fd_sc_hs__nor4b_4	0.00933	0.00949	0.00968	0.00353	0.11942

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	0.00009	0.00017
sky130_fd_sc_hs__nor4b_2	0.00000	0.00014	0.00032
sky130_fd_sc_hs__nor4b_4	0.00000	0.00026	0.00061

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (FR)	1.54879	4.01582	14.53480
	B->Y (FR)	1.50542	3.93549	14.48960
	C->Y (FR)	1.34220	3.73772	14.37470
	D_N->Y (RR)	1.15907	3.22995	10.44490
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	1.49298	3.68129	14.74860
	B->Y (FR)	1.43092	3.57270	14.64880
	C->Y (FR)	1.26687	3.37147	14.53490
	D_N->Y (RR)	0.94215	2.75064	10.52870
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	1.42135	3.33109	14.70510
	B->Y (FR)	1.35934	3.22521	14.61720
	C->Y (FR)	1.19005	3.01158	14.50390
	D_N->Y (RR)	0.91191	2.49846	10.81050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.06593	0.64502	3.52270
	B->Y (RF)	0.06718	0.64365	3.50982
	C->Y (RF)	0.06767	0.63633	3.48909
	D_N->Y (FF)	0.36976	1.29392	6.15676
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.06092	0.60634	3.48010
	B->Y (RF)	0.06214	0.60566	3.47058
	C->Y (RF)	0.06435	0.60247	3.46466
	D_N->Y (FF)	0.44195	1.37472	6.57377
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.06095	0.58787	3.49668
	B->Y (RF)	0.06150	0.58401	3.47552
	C->Y (RF)	0.06167	0.57118	3.43172
	D_N->Y (FF)	0.44164	1.35263	6.42658

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00092	0.00087	0.00086
	A	0.00368	0.00363	0.00362
	B	0.00092	0.00086	0.00085
	B	0.00342	0.00336	0.00335
	C	0.00081	0.00075	0.00074
	C	0.00314	0.00308	0.00307
	D_N	0.00422	0.00408	0.00401
	D_N	0.00297	0.00283	0.00276
sky130_fd_sc_hs__nor4b_2	A	0.00173	0.00163	0.00162
	A	0.00769	0.00758	0.00757
	B	0.00174	0.00163	0.00162
	B	0.00711	0.00700	0.00697
	C	0.00168	0.00156	0.00155
	C	0.00650	0.00637	0.00636
	D_N	0.00646	0.00632	0.00622
	D_N	0.00568	0.00552	0.00544
sky130_fd_sc_hs__nor4b_4	A	0.00341	0.00319	0.00318
	A	0.01510	0.01491	0.01488
	B	0.00339	0.00317	0.00317
	B	0.01396	0.01373	0.01371
	C	0.00325	0.00303	0.00302
	C	0.01277	0.01252	0.01252
	D_N	0.01143	0.01120	0.01109
	D_N	0.01090	0.01067	0.01056

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00353	0.00348	0.00333
	A	0.00089	0.00082	0.00071
	B	0.00311	0.00307	0.00294
	B	0.00066	0.00060	0.00051
	C	0.00266	0.00265	0.00256
	C	0.00035	0.00032	0.00024
	D_N	0.00245	0.00238	0.00237
	D_N	0.00370	0.00364	0.00362
sky130_fd_sc_hs__nor4b_2	A	0.00707	0.00694	0.00658
	A	0.00139	0.00124	0.00096
	B	0.00598	0.00589	0.00562
	B	0.00075	0.00063	0.00042
	C	0.00496	0.00490	0.00473
	C	0.00019	0.00011	-0.00005
	D_N	0.00431	0.00425	0.00426
	D_N	0.00510	0.00505	0.00505
sky130_fd_sc_hs__nor4b_4	A	0.01379	0.01353	0.01283
	A	0.00261	0.00230	0.00178
	B	0.01169	0.01150	0.01101
	B	0.00139	0.00114	0.00073
	C	0.00964	0.00951	0.00920
	C	0.00023	0.00002	-0.00023
	D_N	0.00864	0.00854	0.00861
	D_N	0.00917	0.00910	0.00914

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4b_1	**(B * C * D_N * !Y)**	0.00078	0.00079	0.00078
	(B * C * D_N * !Y)	-0.00086	-0.00087	-0.00087
	(B * !D_N * !Y)	0.00075	0.00075	0.00075
	(B * !D_N * !Y)	-0.00090	-0.00091	-0.00090
	(B * !C * D_N * !Y)	0.00078	0.00079	0.00078
	(B * !C * D_N * !Y)	-0.00086	-0.00087	-0.00087
	(!B * C * D_N * !Y)	0.00078	0.00078	0.00078
	(!B * C * D_N * !Y)	-0.00081	-0.00083	-0.00082
	(!B * C * !D_N * !Y)	0.00075	0.00075	0.00075
	(!B * C * !D_N * !Y)	-0.00085	-0.00086	-0.00086
	(!B * !C * !D_N * !Y)	0.00075	0.00075	0.00075
	(!B * !C * !D_N * !Y)	-0.00084	-0.00086	-0.00085
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00158	0.00159	0.00157
	(B * C * D_N * !Y)	-0.00179	-0.00183	-0.00181
	(B * !D_N * !Y)	0.00158	0.00159	0.00157
	(B * !D_N * !Y)	-0.00179	-0.00183	-0.00182
	(B * !C * D_N * !Y)	0.00158	0.00159	0.00157
	(B * !C * D_N * !Y)	-0.00179	-0.00183	-0.00181
	(!B * C * D_N * !Y)	0.00158	0.00158	0.00157
	(!B * C * D_N * !Y)	-0.00170	-0.00173	-0.00172
	(!B * C * !D_N * !Y)	0.00158	0.00158	0.00157
	(!B * C * !D_N * !Y)	-0.00170	-0.00173	-0.00172
	(!B * !C * !D_N * !Y)	0.00158	0.00158	0.00158
	(!B * !C * !D_N * !Y)	-0.00169	-0.00172	-0.00171

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00308	0.00309	0.00307
	(B * C * D_N * !Y)	-0.00353	-0.00359	-0.00357
	(B * !D_N * !Y)	0.00308	0.00309	0.00307
	(B * !D_N * !Y)	-0.00353	-0.00359	-0.00357
	(B * !C * D_N * !Y)	0.00308	0.00309	0.00307
	(B * !C * D_N * !Y)	-0.00353	-0.00359	-0.00357
	(!B * C * D_N * !Y)	0.00309	0.00309	0.00307
	(!B * C * D_N * !Y)	-0.00335	-0.00341	-0.00339
	(!B * C * !D_N * !Y)	0.00309	0.00309	0.00307
	(!B * C * !D_N * !Y)	-0.00335	-0.00341	-0.00339
	(!B * !C * !D_N * !Y)	0.00309	0.00308	0.00307
	(!B * !C * !D_N * !Y)	-0.00333	-0.00339	-0.00337

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4b_1	**(B * C * D_N * !Y)**	-0.00078	-0.00078	-0.00078
	(B * C * D_N * !Y)	0.00088	0.00087	0.00087
	(B * !D_N * !Y)	-0.00075	-0.00075	-0.00074
	(B * !D_N * !Y)	0.00091	0.00091	0.00090
	(B * !C * D_N * !Y)	-0.00078	-0.00078	-0.00078
	(B * !C * D_N * !Y)	0.00088	0.00087	0.00087
	(!B * C * D_N * !Y)	-0.00078	-0.00078	-0.00078
	(!B * C * D_N * !Y)	0.00083	0.00083	0.00082
	(!B * C * !D_N * !Y)	-0.00074	-0.00075	-0.00074
	(!B * C * !D_N * !Y)	0.00086	0.00086	0.00086
	(!B * !C * !D_N * !Y)	-0.00075	-0.00075	-0.00074
	(!B * !C * !D_N * !Y)	0.00086	0.00086	0.00085

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00157	-0.00158	-0.00157
	(B * C * D_N * !Y)	0.00182	0.00183	0.00181
	(B * !D_N * !Y)	-0.00157	-0.00158	-0.00157
	(B * !D_N * !Y)	0.00182	0.00183	0.00182
	(B * !C * D_N * !Y)	-0.00158	-0.00158	-0.00157
	(B * !C * D_N * !Y)	0.00182	0.00183	0.00181
	(!B * C * D_N * !Y)	-0.00157	-0.00158	-0.00157
	(!B * C * D_N * !Y)	0.00173	0.00173	0.00172
	(!B * C * !D_N * !Y)	-0.00157	-0.00158	-0.00157
	(!B * C * !D_N * !Y)	0.00172	0.00173	0.00172
	(!B * !C * !D_N * !Y)	-0.00158	-0.00158	-0.00158
	(!B * !C * !D_N * !Y)	0.00172	0.00172	0.00171
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00307	-0.00307	-0.00306
	(B * C * D_N * !Y)	0.00358	0.00359	0.00357
	(B * !D_N * !Y)	-0.00307	-0.00307	-0.00306
	(B * !D_N * !Y)	0.00359	0.00359	0.00357
	(B * !C * D_N * !Y)	-0.00307	-0.00307	-0.00306
	(B * !C * D_N * !Y)	0.00359	0.00359	0.00357
	(!B * C * D_N * !Y)	-0.00307	-0.00307	-0.00306
	(!B * C * D_N * !Y)	0.00341	0.00341	0.00339
	(!B * C * !D_N * !Y)	-0.00307	-0.00307	-0.00306
	(!B * C * !D_N * !Y)	0.00341	0.00341	0.00339
	(!B * !C * !D_N * !Y)	-0.00308	-0.00308	-0.00307
	(!B * !C * !D_N * !Y)	0.00339	0.00339	0.00337

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4b_1	**(A * C * D_N * !Y)**	0.00081	0.00081	0.00080
	(A * C * D_N * !Y)	-0.00068	-0.00068	-0.00068
	(A * C * !D_N * !Y)	0.00078	0.00077	0.00077
	(A * C * !D_N * !Y)	-0.00073	-0.00073	-0.00072
	(A * !C * D_N * !Y)	0.00082	0.00081	0.00080
	(A * !C * D_N * !Y)	-0.00065	-0.00065	-0.00064
	(A * !C * !D_N * !Y)	0.00077	0.00077	0.00077
	(A * !C * !D_N * !Y)	-0.00070	-0.00070	-0.00070
	(!A * C * D_N * !Y)	0.00080	0.00080	0.00080
	(!A * C * D_N * !Y)	-0.00085	-0.00086	-0.00085
	(!A * C * !D_N * !Y)	0.00077	0.00077	0.00077
	(!A * C * !D_N * !Y)	-0.00088	-0.00089	-0.00089
	(!A * !C * !D_N * !Y)	0.00077	0.00077	0.00077
	(!A * !C * !D_N * !Y)	-0.00083	-0.00084	-0.00084
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00161	0.00162	0.00161
	(A * C * D_N * !Y)	-0.00146	-0.00146	-0.00145
	(A * C * !D_N * !Y)	0.00163	0.00162	0.00161
	(A * C * !D_N * !Y)	-0.00149	-0.00149	-0.00148
	(A * !C * D_N * !Y)	0.00161	0.00161	0.00161
	(A * !C * D_N * !Y)	-0.00138	-0.00138	-0.00138
	(A * !C * !D_N * !Y)	0.00162	0.00162	0.00161
	(A * !C * !D_N * !Y)	-0.00143	-0.00144	-0.00143
	(!A * C * D_N * !Y)	0.00161	0.00163	0.00161
	(!A * C * D_N * !Y)	-0.00180	-0.00183	-0.00182
	(!A * C * !D_N * !Y)	0.00161	0.00163	0.00160
	(!A * C * !D_N * !Y)	-0.00181	-0.00183	-0.00182
	(!A * !C * !D_N * !Y)	0.00161	0.00162	0.00161
	(!A * !C * !D_N * !Y)	-0.00171	-0.00174	-0.00173

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00317	0.00315	0.00313
	(A * C * D_N * !Y)	-0.00286	-0.00287	-0.00285
	(A * C * !D_N * !Y)	0.00317	0.00315	0.00313
	(A * C * !D_N * !Y)	-0.00292	-0.00292	-0.00290
	(A * !C * D_N * !Y)	0.00314	0.00315	0.00313
	(A * !C * D_N * !Y)	-0.00272	-0.00273	-0.00271
	(A * !C * !D_N * !Y)	0.00315	0.00316	0.00314
	(A * !C * !D_N * !Y)	-0.00282	-0.00282	-0.00281
	(!A * C * D_N * !Y)	0.00317	0.00317	0.00313
	(!A * C * D_N * !Y)	-0.00360	-0.00363	-0.00361
	(!A * C * !D_N * !Y)	0.00316	0.00317	0.00313
	(!A * C * !D_N * !Y)	-0.00360	-0.00363	-0.00361
	(!A * !C * !D_N * !Y)	0.00314	0.00315	0.00313
	(!A * !C * !D_N * !Y)	-0.00339	-0.00343	-0.00342

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4b_1	**(A * C * D_N * !Y)**	-0.00080	-0.00080	-0.00080
	(A * C * D_N * !Y)	0.00068	0.00068	0.00068
	(A * C * !D_N * !Y)	-0.00077	-0.00077	-0.00077
	(A * C * !D_N * !Y)	0.00073	0.00073	0.00072
	(A * !C * D_N * !Y)	-0.00080	-0.00080	-0.00080
	(A * !C * D_N * !Y)	0.00065	0.00065	0.00065
	(A * !C * !D_N * !Y)	-0.00077	-0.00077	-0.00077
	(A * !C * !D_N * !Y)	0.00070	0.00070	0.00070
	(!A * C * D_N * !Y)	-0.00080	-0.00080	-0.00080
	(!A * C * D_N * !Y)	0.00086	0.00086	0.00085
	(!A * C * !D_N * !Y)	-0.00077	-0.00077	-0.00077
	(!A * C * !D_N * !Y)	0.00089	0.00089	0.00089
	(!A * !C * !D_N * !Y)	-0.00077	-0.00077	-0.00077
	(!A * !C * !D_N * !Y)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00161	-0.00161	-0.00160
	(A * C * D_N * !Y)	0.00146	0.00146	0.00145
	(A * C * !D_N * !Y)	-0.00161	-0.00161	-0.00160
	(A * C * !D_N * !Y)	0.00149	0.00149	0.00148
	(A * !C * D_N * !Y)	-0.00160	-0.00161	-0.00160
	(A * !C * D_N * !Y)	0.00140	0.00140	0.00140
	(A * !C * !D_N * !Y)	-0.00160	-0.00161	-0.00161
	(A * !C * !D_N * !Y)	0.00143	0.00144	0.00143
	(!A * C * D_N * !Y)	-0.00161	-0.00161	-0.00160
	(!A * C * D_N * !Y)	0.00183	0.00183	0.00182
	(!A * C * !D_N * !Y)	-0.00160	-0.00161	-0.00160
	(!A * C * !D_N * !Y)	0.00183	0.00183	0.00182
	(!A * !C * !D_N * !Y)	-0.00161	-0.00161	-0.00161
	(!A * !C * !D_N * !Y)	0.00174	0.00174	0.00173

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00312	-0.00313	-0.00312
	(A * C * D_N * !Y)	0.00286	0.00287	0.00285
	(A * C * !D_N * !Y)	-0.00313	-0.00313	-0.00312
	(A * C * !D_N * !Y)	0.00292	0.00292	0.00290
	(A * !C * D_N * !Y)	-0.00312	-0.00313	-0.00312
	(A * !C * D_N * !Y)	0.00275	0.00276	0.00276
	(A * !C * !D_N * !Y)	-0.00313	-0.00314	-0.00313
	(A * !C * !D_N * !Y)	0.00282	0.00282	0.00281
	(!A * C * D_N * !Y)	-0.00313	-0.00313	-0.00312
	(!A * C * D_N * !Y)	0.00362	0.00363	0.00361
	(!A * C * !D_N * !Y)	-0.00313	-0.00313	-0.00312
	(!A * C * !D_N * !Y)	0.00362	0.00363	0.00361
	(!A * !C * !D_N * !Y)	-0.00314	-0.00314	-0.00313
	(!A * !C * !D_N * !Y)	0.00343	0.00343	0.00342

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(B * D_N * !Y)	0.00091	0.00092	0.00092
	(B * D_N * !Y)	-0.00064	-0.00064	-0.00064
	(B * !D_N * !Y)	0.00077	0.00078	0.00077
	(B * !D_N * !Y)	-0.00081	-0.00081	-0.00081
	(A * !B * D_N * !Y)	0.00092	0.00092	0.00092
	(A * !B * D_N * !Y)	-0.00064	-0.00064	-0.00064
	(A * !B * !D_N * !Y)	0.00077	0.00078	0.00077
	(A * !B * !D_N * !Y)	-0.00083	-0.00083	-0.00082
	(!A * !B * !D_N * !Y)	0.00078	0.00078	0.00077
	(!A * !B * !D_N * !Y)	-0.00101	-0.00101	-0.00100

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00177	0.00174	0.00173
	(B * D_N * !Y)	-0.00133	-0.00132	-0.00131
	(B * !D_N * !Y)	0.00164	0.00165	0.00164
	(B * !D_N * !Y)	-0.00146	-0.00145	-0.00144
	(A * !B * D_N * !Y)	0.00174	0.00175	0.00173
	(A * !B * D_N * !Y)	-0.00131	-0.00131	-0.00131
	(A * !B * !D_N * !Y)	0.00165	0.00165	0.00164
	(A * !B * !D_N * !Y)	-0.00149	-0.00149	-0.00148
	(!A * !B * !D_N * !Y)	0.00167	0.00166	0.00163
	(!A * !B * !D_N * !Y)	-0.00183	-0.00185	-0.00184
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00341	0.00342	0.00340
	(B * D_N * !Y)	-0.00261	-0.00262	-0.00261
	(B * !D_N * !Y)	0.00331	0.00336	0.00332
	(B * !D_N * !Y)	-0.00277	-0.00279	-0.00277
	(A * !B * D_N * !Y)	0.00343	0.00343	0.00340
	(A * !B * D_N * !Y)	-0.00261	-0.00261	-0.00260
	(A * !B * !D_N * !Y)	0.00332	0.00333	0.00332
	(A * !B * !D_N * !Y)	-0.00284	-0.00285	-0.00283
	(!A * !B * !D_N * !Y)	0.00332	0.00336	0.00331
	(!A * !B * !D_N * !Y)	-0.00352	-0.00357	-0.00355

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4b_1	**(B * D_N * !Y)**	-0.00091	-0.00091	-0.00091
	(B * D_N * !Y)	0.00065	0.00065	0.00065
	(B * !D_N * !Y)	-0.00077	-0.00077	-0.00077
	(B * !D_N * !Y)	0.00081	0.00081	0.00081
	(A * !B * D_N * !Y)	-0.00088	-0.00088	-0.00090
	(A * !B * D_N * !Y)	0.00066	0.00066	0.00065
	(A * !B * !D_N * !Y)	-0.00077	-0.00077	-0.00077
	(A * !B * !D_N * !Y)	0.00083	0.00083	0.00082
	(!A * !B * !D_N * !Y)	-0.00077	-0.00077	-0.00077
	(!A * !B * !D_N * !Y)	0.00101	0.00101	0.00100
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00172	-0.00173	-0.00173
	(B * D_N * !Y)	0.00133	0.00133	0.00133
	(B * !D_N * !Y)	-0.00164	-0.00164	-0.00163
	(B * !D_N * !Y)	0.00146	0.00145	0.00144
	(A * !B * D_N * !Y)	-0.00163	-0.00164	-0.00169
	(A * !B * D_N * !Y)	0.00136	0.00135	0.00134
	(A * !B * !D_N * !Y)	-0.00164	-0.00164	-0.00164
	(A * !B * !D_N * !Y)	0.00149	0.00149	0.00148
	(!A * !B * !D_N * !Y)	-0.00164	-0.00165	-0.00163
	(!A * !B * !D_N * !Y)	0.00183	0.00185	0.00184
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00338	-0.00339	-0.00339
	(B * D_N * !Y)	0.00265	0.00266	0.00265
	(B * !D_N * !Y)	-0.00330	-0.00332	-0.00330
	(B * !D_N * !Y)	0.00277	0.00279	0.00277
	(A * !B * D_N * !Y)	-0.00321	-0.00324	-0.00333
	(A * !B * D_N * !Y)	0.00269	0.00268	0.00266
	(A * !B * !D_N * !Y)	-0.00332	-0.00333	-0.00331
	(A * !B * !D_N * !Y)	0.00284	0.00285	0.00283
	(!A * !B * !D_N * !Y)	-0.00331	-0.00333	-0.00331
	(!A * !B * !D_N * !Y)	0.00355	0.00357	0.00355

Passive power(pJ) for D_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00238	0.00229	0.00224
	(C * !Y)	0.00061	0.00051	0.00046
	(B * !C * !Y)	0.00246	0.00237	0.00228
	(B * !C * !Y)	0.00065	0.00056	0.00048
	(A * !B * !C * !Y)	0.00253	0.00244	0.00232
	(A * !B * !C * !Y)	0.00069	0.00059	0.00050
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00312	0.00303	0.00294
	(C * !Y)	0.00109	0.00099	0.00091
	(B * !C * !Y)	0.00330	0.00320	0.00305
	(B * !C * !Y)	0.00120	0.00109	0.00097
	(A * !B * !C * !Y)	0.00348	0.00337	0.00315
	(A * !B * !C * !Y)	0.00131	0.00119	0.00103
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00486	0.00471	0.00458
	(C * !Y)	0.00188	0.00172	0.00160
	(B * !C * !Y)	0.00522	0.00505	0.00478
	(B * !C * !Y)	0.00211	0.00193	0.00170
	(A * !B * !C * !Y)	0.00556	0.00538	0.00498
	(A * !B * !C * !Y)	0.00231	0.00213	0.00181

Passive power(pJ) for D_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00082	0.00075	0.00072
	(C * !Y)	0.00259	0.00251	0.00250
	(B * !C * !Y)	0.00082	0.00075	0.00072
	(B * !C * !Y)	0.00259	0.00252	0.00250
	(A * !B * !C * !Y)	0.00082	0.00075	0.00072
	(A * !B * !C * !Y)	0.00259	0.00252	0.00250
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00158	0.00150	0.00147
	(C * !Y)	0.00362	0.00354	0.00350
	(B * !C * !Y)	0.00158	0.00150	0.00147
	(B * !C * !Y)	0.00362	0.00354	0.00350
	(A * !B * !C * !Y)	0.00158	0.00150	0.00147
	(A * !B * !C * !Y)	0.00362	0.00354	0.00350
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00326	0.00312	0.00308
	(C * !Y)	0.00624	0.00611	0.00606
	(B * !C * !Y)	0.00326	0.00312	0.00308
	(B * !C * !Y)	0.00624	0.00612	0.00606
	(A * !B * !C * !Y)	0.00326	0.00312	0.00308
	(A * !B * !C * !Y)	0.00624	0.00612	0.00606

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D	Y
0	0	0	0	1
0	0	x	1	0
0	x	1	x	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4_1	9.59040
sky130_fd_sc_hs__nor4_2	14.38560
sky130_fd_sc_hs__nor4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nor4_1	0.00240	0.00255	0.00255	0.00263	0.03161
sky130_fd_sc_hs__nor4_2	0.00365	0.00421	0.00424	0.00403	0.06362
sky130_fd_sc_hs__nor4_4	0.00716	0.00756	0.00734	0.00773	0.12100

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4_1	0.00000	0.00005	0.00014
sky130_fd_sc_hs__nor4_2	0.00000	0.00009	0.00016
sky130_fd_sc_hs__nor4_4	0.00000	0.00019	0.00032

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (FR)	1.52172	3.99361	14.53760
	B->Y (FR)	1.48768	3.92127	14.50140
	C->Y (FR)	1.32391	3.72131	14.34180
	D->Y (FR)	1.03337	3.30807	13.42520
sky130_fd_sc_hs__nor4_2	A->Y (FR)	1.15532	3.36209	14.56930
	B->Y (FR)	1.10863	3.27390	14.51330
	C->Y (FR)	0.92364	3.04902	14.35930
	D->Y (FR)	0.57200	2.61365	13.34920
sky130_fd_sc_hs__nor4_4	A->Y (FR)	1.25555	3.17844	14.58630
	B->Y (FR)	1.20358	3.08154	14.51280
	C->Y (FR)	1.02820	2.86996	14.38870
	D->Y (FR)	0.67656	2.39818	13.38160

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.06436	0.63860	3.50409
	B->Y (RF)	0.06679	0.64299	3.51308
	C->Y (RF)	0.06763	0.63666	3.49487
	D->Y (RF)	0.06574	0.62351	3.46452
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.07025	0.72168	4.19196
	B->Y (RF)	0.07393	0.72674	4.20746
	C->Y (RF)	0.07614	0.71543	4.17848
	D->Y (RF)	0.07053	0.68757	4.10618
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.07263	0.69533	4.15506
	B->Y (RF)	0.07466	0.69384	4.14553
	C->Y (RF)	0.07711	0.68670	4.14211
	D->Y (RF)	0.07216	0.66358	4.10200

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00029	0.00024	0.00023
	A	0.00368	0.00363	0.00362
	B	0.00035	0.00030	0.00029
	B	0.00345	0.00339	0.00338
	C	0.00035	0.00030	0.00028
	C	0.00315	0.00308	0.00300
	D	0.00032	0.00024	0.00023
	D	0.00288	0.00282	0.00280
sky130_fd_sc_hs__nor4_2	A	0.00033	0.00028	0.00028
	A	0.00576	0.00571	0.00566
	B	0.00014	0.00009	0.00008
	B	0.00536	0.00530	0.00529
	C	0.00029	0.00022	0.00021
	C	0.00477	0.00469	0.00468
	D	0.00015	0.00009	0.00008
	D	0.00399	0.00392	0.00391
sky130_fd_sc_hs__nor4_4	A	0.00236	0.00225	0.00224
	A	0.01349	0.01338	0.01335
	B	0.00240	0.00227	0.00227
	B	0.01248	0.01234	0.01233
	C	0.00244	0.00231	0.00230
	C	0.01118	0.01105	0.01105
	D	0.00232	0.00214	0.00213
	D	0.00990	0.00971	0.00969

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00405	0.00400	0.00384
	A	0.00081	0.00074	0.00063
	B	0.00359	0.00355	0.00341
	B	0.00058	0.00053	0.00043
	C	0.00304	0.00302	0.00293
	C	0.00029	0.00025	0.00018
	D	0.00246	0.00245	0.00240
	D	-0.00010	-0.00013	-0.00017
sky130_fd_sc_hs__nor4_2	A	0.00644	0.00632	0.00601
	A	0.00134	0.00120	0.00098
	B	0.00580	0.00570	0.00545
	B	0.00079	0.00068	0.00048
	C	0.00448	0.00442	0.00428
	C	0.00009	0.00001	-0.00011
	D	0.00316	0.00314	0.00310
	D	-0.00067	-0.00071	-0.00074
sky130_fd_sc_hs__nor4_4	A	0.01310	0.01283	0.01219
	A	0.00263	0.00235	0.00189
	B	0.01104	0.01086	0.01038
	B	0.00135	0.00112	0.00076
	C	0.00880	0.00867	0.00836
	C	0.00023	0.00006	-0.00017
	D	0.00619	0.00610	0.00605
	D	-0.00135	-0.00148	-0.00152

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00081	0.00081	0.00080
	(B * D * !Y)	-0.00089	-0.00090	-0.00089
	(B * C * !D * !Y)	0.00081	0.00081	0.00080
	(B * C * !D * !Y)	-0.00089	-0.00090	-0.00089
	(B * !C * !D * !Y)	0.00081	0.00081	0.00081
	(B * !C * !D * !Y)	-0.00089	-0.00090	-0.00089
	(!B * C * D * !Y)	0.00081	0.00081	0.00080
	(!B * C * D * !Y)	-0.00084	-0.00085	-0.00085
	(!B * C * !D * !Y)	0.00081	0.00081	0.00080
	(!B * C * !D * !Y)	-0.00084	-0.00085	-0.00085
	(!B * !C * D * !Y)	0.00081	0.00080	0.00080
	(!B * !C * D * !Y)	-0.00083	-0.00085	-0.00084
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00081	0.00081	0.00080
	(B * D * !Y)	-0.00172	-0.00174	-0.00173
	(B * C * !D * !Y)	0.00081	0.00081	0.00080
	(B * C * !D * !Y)	-0.00172	-0.00174	-0.00173
	(B * !C * !D * !Y)	0.00081	0.00081	0.00080
	(B * !C * !D * !Y)	-0.00172	-0.00174	-0.00173
	(!B * C * D * !Y)	0.00081	0.00081	0.00080
	(!B * C * D * !Y)	-0.00162	-0.00164	-0.00163
	(!B * C * !D * !Y)	0.00081	0.00081	0.00080
	(!B * C * !D * !Y)	-0.00162	-0.00164	-0.00163
	(!B * !C * D * !Y)	0.00081	0.00081	0.00080
	(!B * !C * D * !Y)	-0.00160	-0.00163	-0.00162

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00169	0.00169	0.00168
	(B * D * !Y)	-0.00350	-0.00356	-0.00353
	(B * C * !D * !Y)	0.00169	0.00169	0.00168
	(B * C * !D * !Y)	-0.00350	-0.00356	-0.00353
	(B * !C * !D * !Y)	0.00169	0.00169	0.00168
	(B * !C * !D * !Y)	-0.00350	-0.00356	-0.00353
	(!B * C * D * !Y)	0.00169	0.00168	0.00168
	(!B * C * D * !Y)	-0.00331	-0.00337	-0.00335
	(!B * C * !D * !Y)	0.00169	0.00168	0.00168
	(!B * C * !D * !Y)	-0.00331	-0.00337	-0.00335
	(!B * !C * D * !Y)	0.00169	0.00169	0.00168
	(!B * !C * D * !Y)	-0.00328	-0.00334	-0.00332

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00081	-0.00081	-0.00080
	(B * D * !Y)	0.00090	0.00090	0.00089
	(B * C * !D * !Y)	-0.00081	-0.00081	-0.00080
	(B * C * !D * !Y)	0.00090	0.00090	0.00089
	(B * !C * !D * !Y)	-0.00081	-0.00081	-0.00080
	(B * !C * !D * !Y)	0.00091	0.00090	0.00089
	(!B * C * D * !Y)	-0.00080	-0.00081	-0.00080
	(!B * C * D * !Y)	0.00085	0.00085	0.00085
	(!B * C * !D * !Y)	-0.00080	-0.00081	-0.00080
	(!B * C * !D * !Y)	0.00085	0.00085	0.00085
	(!B * !C * D * !Y)	-0.00080	-0.00080	-0.00080
	(!B * !C * D * !Y)	0.00084	0.00085	0.00084

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00080	-0.00080	-0.00080
	(B * D * !Y)	0.00173	0.00174	0.00173
	(B * C * !D * !Y)	-0.00080	-0.00080	-0.00080
	(B * C * !D * !Y)	0.00174	0.00174	0.00173
	(B * !C * !D * !Y)	-0.00080	-0.00080	-0.00080
	(B * !C * !D * !Y)	0.00174	0.00174	0.00173
	(!B * C * D * !Y)	-0.00080	-0.00081	-0.00080
	(!B * C * D * !Y)	0.00164	0.00164	0.00163
	(!B * C * !D * !Y)	-0.00081	-0.00081	-0.00080
	(!B * C * !D * !Y)	0.00164	0.00164	0.00163
	(!B * !C * D * !Y)	-0.00080	-0.00081	-0.00080
	(!B * !C * D * !Y)	0.00162	0.00163	0.00162
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00168	-0.00168	-0.00167
	(B * D * !Y)	0.00354	0.00356	0.00353
	(B * C * !D * !Y)	-0.00168	-0.00168	-0.00167
	(B * C * !D * !Y)	0.00355	0.00356	0.00353
	(B * !C * !D * !Y)	-0.00168	-0.00168	-0.00167
	(B * !C * !D * !Y)	0.00355	0.00356	0.00353
	(!B * C * D * !Y)	-0.00168	-0.00168	-0.00167
	(!B * C * D * !Y)	0.00336	0.00337	0.00335
	(!B * C * !D * !Y)	-0.00168	-0.00168	-0.00167
	(!B * C * !D * !Y)	0.00337	0.00337	0.00335
	(!B * !C * D * !Y)	-0.00168	-0.00169	-0.00168
	(!B * !C * D * !Y)	0.00333	0.00334	0.00332

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4_1	**(A * C * D * !Y)**	0.00078	0.00078	0.00077
	(A * C * D * !Y)	-0.00073	-0.00073	-0.00073
	(A * C * !D * !Y)	0.00078	0.00078	0.00077
	(A * C * !D * !Y)	-0.00072	-0.00072	-0.00071
	(A * !C * D * !Y)	0.00077	0.00077	0.00077
	(A * !C * D * !Y)	-0.00070	-0.00070	-0.00070
	(A * !C * !D * !Y)	0.00079	0.00078	0.00077
	(A * !C * !D * !Y)	-0.00069	-0.00068	-0.00068
	(!A * C * D * !Y)	0.00077	0.00077	0.00077
	(!A * C * D * !Y)	-0.00089	-0.00090	-0.00089
	(!A * C * !D * !Y)	0.00077	0.00077	0.00077
	(!A * C * !D * !Y)	-0.00089	-0.00090	-0.00089
	(!A * !C * D * !Y)	0.00077	0.00078	0.00077
	(!A * !C * D * !Y)	-0.00083	-0.00084	-0.00084
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00104	0.00104	0.00103
	(A * C * D * !Y)	-0.00149	-0.00148	-0.00148
	(A * C * !D * !Y)	0.00103	0.00104	0.00103
	(A * C * !D * !Y)	-0.00146	-0.00146	-0.00145
	(A * !C * D * !Y)	0.00102	0.00103	0.00102
	(A * !C * D * !Y)	-0.00143	-0.00143	-0.00142
	(A * !C * !D * !Y)	0.00102	0.00103	0.00102
	(A * !C * !D * !Y)	-0.00138	-0.00139	-0.00138
	(!A * C * D * !Y)	0.00103	0.00104	0.00102
	(!A * C * D * !Y)	-0.00178	-0.00181	-0.00180
	(!A * C * !D * !Y)	0.00103	0.00104	0.00102
	(!A * C * !D * !Y)	-0.00178	-0.00181	-0.00180
	(!A * !C * D * !Y)	0.00102	0.00103	0.00102
	(!A * !C * D * !Y)	-0.00168	-0.00171	-0.00170

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00176	0.00175	0.00174
	(A * C * D * !Y)	-0.00296	-0.00296	-0.00294
	(A * C * !D * !Y)	0.00176	0.00175	0.00174
	(A * C * !D * !Y)	-0.00291	-0.00291	-0.00289
	(A * !C * D * !Y)	0.00175	0.00176	0.00175
	(A * !C * D * !Y)	-0.00283	-0.00284	-0.00283
	(A * !C * !D * !Y)	0.00177	0.00175	0.00174
	(A * !C * !D * !Y)	-0.00279	-0.00277	-0.00276
	(!A * C * D * !Y)	0.00174	0.00176	0.00174
	(!A * C * D * !Y)	-0.00362	-0.00368	-0.00366
	(!A * C * !D * !Y)	0.00174	0.00176	0.00174
	(!A * C * !D * !Y)	-0.00362	-0.00368	-0.00365
	(!A * !C * D * !Y)	0.00177	0.00175	0.00174
	(!A * !C * D * !Y)	-0.00344	-0.00345	-0.00344

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4_1	**(A * C * D * !Y)**	-0.00077	-0.00077	-0.00077
	(A * C * D * !Y)	0.00073	0.00073	0.00073
	(A * C * !D * !Y)	-0.00077	-0.00077	-0.00077
	(A * C * !D * !Y)	0.00072	0.00072	0.00071
	(A * !C * D * !Y)	-0.00077	-0.00077	-0.00077
	(A * !C * D * !Y)	0.00070	0.00070	0.00070
	(A * !C * !D * !Y)	-0.00077	-0.00077	-0.00077
	(A * !C * !D * !Y)	0.00069	0.00069	0.00069
	(!A * C * D * !Y)	-0.00077	-0.00077	-0.00077
	(!A * C * D * !Y)	0.00090	0.00090	0.00089
	(!A * C * !D * !Y)	-0.00077	-0.00077	-0.00077
	(!A * C * !D * !Y)	0.00090	0.00090	0.00089
	(!A * !C * D * !Y)	-0.00077	-0.00077	-0.00077
	(!A * !C * D * !Y)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00103	-0.00103	-0.00102
	(A * C * D * !Y)	0.00149	0.00148	0.00148
	(A * C * !D * !Y)	-0.00103	-0.00103	-0.00102
	(A * C * !D * !Y)	0.00146	0.00146	0.00145
	(A * !C * D * !Y)	-0.00102	-0.00102	-0.00102
	(A * !C * D * !Y)	0.00143	0.00143	0.00142
	(A * !C * !D * !Y)	-0.00102	-0.00102	-0.00102
	(A * !C * !D * !Y)	0.00140	0.00141	0.00140
	(!A * C * D * !Y)	-0.00103	-0.00103	-0.00102
	(!A * C * D * !Y)	0.00181	0.00181	0.00180
	(!A * C * !D * !Y)	-0.00103	-0.00103	-0.00102
	(!A * C * !D * !Y)	0.00181	0.00181	0.00180
	(!A * !C * D * !Y)	-0.00102	-0.00102	-0.00102
	(!A * !C * D * !Y)	0.00171	0.00171	0.00170

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00174	-0.00174	-0.00173
	(A * C * D * !Y)	0.00296	0.00296	0.00294
	(A * C * !D * !Y)	-0.00174	-0.00174	-0.00173
	(A * C * !D * !Y)	0.00291	0.00291	0.00289
	(A * !C * D * !Y)	-0.00174	-0.00175	-0.00174
	(A * !C * D * !Y)	0.00283	0.00284	0.00283
	(A * !C * !D * !Y)	-0.00174	-0.00174	-0.00173
	(A * !C * !D * !Y)	0.00279	0.00280	0.00280
	(!A * C * D * !Y)	-0.00174	-0.00174	-0.00174
	(!A * C * D * !Y)	0.00366	0.00368	0.00366
	(!A * C * !D * !Y)	-0.00174	-0.00174	-0.00174
	(!A * C * !D * !Y)	0.00367	0.00368	0.00365
	(!A * !C * D * !Y)	-0.00175	-0.00175	-0.00174
	(!A * !C * D * !Y)	0.00345	0.00345	0.00344

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00078	0.00079	0.00078
	(B * D * !Y)	-0.00067	-0.00067	-0.00067
	(B * !D * !Y)	0.00079	0.00079	0.00078
	(B * !D * !Y)	-0.00065	-0.00065	-0.00065
	(A * !B * D * !Y)	0.00079	0.00079	0.00078
	(A * !B * D * !Y)	-0.00069	-0.00069	-0.00068
	(A * !B * !D * !Y)	0.00080	0.00079	0.00078
	(A * !B * !D * !Y)	-0.00066	-0.00065	-0.00065
	(!A * !B * D * !Y)	0.00079	0.00079	0.00078
	(!A * !B * D * !Y)	-0.00086	-0.00086	-0.00086

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00102	0.00102	0.00101
	(B * D * !Y)	-0.00137	-0.00137	-0.00136
	(B * !D * !Y)	0.00104	0.00102	0.00101
	(B * !D * !Y)	-0.00133	-0.00132	-0.00132
	(A * !B * D * !Y)	0.00101	0.00102	0.00101
	(A * !B * D * !Y)	-0.00138	-0.00140	-0.00139
	(A * !B * !D * !Y)	0.00102	0.00102	0.00101
	(A * !B * !D * !Y)	-0.00131	-0.00131	-0.00131
	(!A * !B * D * !Y)	0.00102	0.00102	0.00101
	(!A * !B * D * !Y)	-0.00176	-0.00177	-0.00176
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00167	0.00168	0.00167
	(B * D * !Y)	-0.00278	-0.00277	-0.00275
	(B * !D * !Y)	0.00170	0.00169	0.00167
	(B * !D * !Y)	-0.00270	-0.00269	-0.00268
	(A * !B * D * !Y)	0.00168	0.00169	0.00167
	(A * !B * D * !Y)	-0.00282	-0.00282	-0.00280
	(A * !B * !D * !Y)	0.00168	0.00169	0.00167
	(A * !B * !D * !Y)	-0.00265	-0.00267	-0.00267
	(!A * !B * D * !Y)	0.00170	0.00169	0.00167
	(!A * !B * D * !Y)	-0.00353	-0.00355	-0.00353

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00078	-0.00078	-0.00078
	(B * D * !Y)	0.00067	0.00067	0.00067
	(B * !D * !Y)	-0.00078	-0.00078	-0.00078
	(B * !D * !Y)	0.00066	0.00066	0.00066
	(A * !B * D * !Y)	-0.00078	-0.00079	-0.00078
	(A * !B * D * !Y)	0.00069	0.00069	0.00068
	(A * !B * !D * !Y)	-0.00076	-0.00076	-0.00077
	(A * !B * !D * !Y)	0.00066	0.00066	0.00066
	(!A * !B * D * !Y)	-0.00078	-0.00079	-0.00078
	(!A * !B * D * !Y)	0.00086	0.00086	0.00086
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00101	-0.00102	-0.00101
	(B * D * !Y)	0.00137	0.00137	0.00136
	(B * !D * !Y)	-0.00101	-0.00101	-0.00101
	(B * !D * !Y)	0.00133	0.00134	0.00134
	(A * !B * D * !Y)	-0.00100	-0.00101	-0.00101
	(A * !B * D * !Y)	0.00138	0.00140	0.00139
	(A * !B * !D * !Y)	-0.00093	-0.00095	-0.00097
	(A * !B * !D * !Y)	0.00136	0.00136	0.00134
	(!A * !B * D * !Y)	-0.00101	-0.00101	-0.00100
	(!A * !B * D * !Y)	0.00177	0.00177	0.00176
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00167	-0.00167	-0.00166
	(B * D * !Y)	0.00278	0.00277	0.00275
	(B * !D * !Y)	-0.00165	-0.00166	-0.00166
	(B * !D * !Y)	0.00271	0.00273	0.00273
	(A * !B * D * !Y)	-0.00168	-0.00168	-0.00167
	(A * !B * D * !Y)	0.00282	0.00282	0.00280
	(A * !B * !D * !Y)	-0.00156	-0.00158	-0.00159
	(A * !B * !D * !Y)	0.00271	0.00272	0.00273
	(!A * !B * D * !Y)	-0.00168	-0.00168	-0.00167
	(!A * !B * D * !Y)	0.00355	0.00355	0.00353

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00093	0.00093	0.00092
	(C * !Y)	-0.00060	-0.00060	-0.00059
	(B * !C * !Y)	0.00093	0.00093	0.00092
	(B * !C * !Y)	-0.00060	-0.00059	-0.00059
	(A * !B * !C * !Y)	0.00092	0.00093	0.00092
	(A * !B * !C * !Y)	-0.00059	-0.00059	-0.00059
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00114	0.00115	0.00114
	(C * !Y)	-0.00118	-0.00119	-0.00118
	(B * !C * !Y)	0.00114	0.00115	0.00114
	(B * !C * !Y)	-0.00118	-0.00119	-0.00117
	(A * !B * !C * !Y)	0.00115	0.00115	0.00114
	(A * !B * !C * !Y)	-0.00119	-0.00119	-0.00117
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00216	0.00215	0.00214
	(C * !Y)	-0.00238	-0.00236	-0.00235
	(B * !C * !Y)	0.00214	0.00215	0.00214
	(B * !C * !Y)	-0.00234	-0.00235	-0.00234
	(A * !B * !C * !Y)	0.00215	0.00215	0.00214
	(A * !B * !C * !Y)	-0.00236	-0.00235	-0.00234

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00091	-0.00091	-0.00092
	(C * !Y)	0.00061	0.00061	0.00060
	(B * !C * !Y)	-0.00083	-0.00083	-0.00091
	(B * !C * !Y)	0.00066	0.00066	0.00060
	(A * !B * !C * !Y)	-0.00075	-0.00076	-0.00089
	(A * !B * !C * !Y)	0.00071	0.00070	0.00062
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00112	-0.00113	-0.00114
	(C * !Y)	0.00121	0.00120	0.00118
	(B * !C * !Y)	-0.00094	-0.00095	-0.00111
	(B * !C * !Y)	0.00133	0.00132	0.00120
	(A * !B * !C * !Y)	-0.00076	-0.00079	-0.00106
	(A * !B * !C * !Y)	0.00142	0.00142	0.00123
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00207	-0.00210	-0.00214
	(C * !Y)	0.00240	0.00241	0.00236
	(B * !C * !Y)	-0.00174	-0.00176	-0.00209
	(B * !C * !Y)	0.00264	0.00264	0.00240
	(A * !B * !C * !Y)	-0.00139	-0.00142	-0.00198
	(A * !B * !C * !Y)	0.00286	0.00284	0.00246

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	C1	D1	Y
0	0	x	x	x	1
x	1	0	x	x	1
x	1	1	0	x	1
x	1	1	1	0	1
x	1	1	1	1	0
1	x	0	x	x	1
1	x	1	0	x	1
1	x	1	1	0	1
1	x	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111ai_1	11.18880
sky130_fd_sc_hs__o2111ai_2	19.18080
sky130_fd_sc_hs__o2111ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__o2111ai_1	0.00240	0.00254	0.00247	0.00264	0.00260	0.07390
sky130_fd_sc_hs__o2111ai_2	0.00460	0.00474	0.00493	0.00479	0.00484	0.14338
sky130_fd_sc_hs__o2111ai_4	0.00920	0.00946	0.00720	0.00725	0.00733	0.27335

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	0.00006	0.00017
sky130_fd_sc_hs__o2111ai_2	0.00000	0.00011	0.00034
sky130_fd_sc_hs__o2111ai_4	0.00000	0.00021	0.00050

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (FR)	0.96232	3.06562	14.43510
	A2->Y (FR)	0.90169	2.90606	13.86410
	B1->Y (FR)	0.31395	1.65816	9.53231
	C1->Y (FR)	0.27788	1.62017	9.49565
	D1->Y (FR)	0.23596	1.56633	9.44835
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.91343	2.77780	14.47090
	A2->Y (FR)	0.82260	2.58638	13.86740
	B1->Y (FR)	0.28552	1.52952	9.48754
	C1->Y (FR)	0.24570	1.48044	9.43961
	D1->Y (FR)	0.19131	1.42829	9.37304
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.88177	2.54412	14.46180
	A2->Y (FR)	0.78128	2.34478	13.85550
	B1->Y (FR)	0.47893	1.89961	12.21720
	C1->Y (FR)	0.38474	1.78484	11.91620
	D1->Y (FR)	0.28992	1.71396	12.00520

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.17479	0.92621	5.04317
	A2->Y (RF)	0.16079	0.90489	5.00211
	B1->Y (RF)	0.16438	0.94697	5.33917
	C1->Y (RF)	0.15184	0.97303	5.60016
	D1->Y (RF)	0.13070	0.95778	5.55765
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.17938	0.89224	5.12398
	A2->Y (RF)	0.16204	0.86670	5.07719
	B1->Y (RF)	0.16837	0.90920	5.42405
	C1->Y (RF)	0.15312	0.94817	5.81714
	D1->Y (RF)	0.12160	0.91819	5.77388
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.16735	0.82876	5.06055
	A2->Y (RF)	0.15935	0.81468	5.06826
	B1->Y (RF)	0.14295	0.83295	5.44883
	C1->Y (RF)	0.12836	0.86261	5.82121
	D1->Y (RF)	0.09695	0.83340	5.82436

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00112	0.00106	0.00103
	A1	0.00499	0.00492	0.00488
	A2	0.00114	0.00105	0.00102
	A2	0.00469	0.00460	0.00457
	B1	0.00066	0.00056	0.00053
	B1	0.00401	0.00389	0.00386
	C1	0.00035	0.00024	0.00021
	C1	0.00340	0.00328	0.00327
	D1	0.00010	0.00000	-0.00001
	D1	0.00278	0.00267	0.00266
sky130_fd_sc_hs__o2111ai_2	A1	0.00162	0.00148	0.00143
	A1	0.00936	0.00920	0.00912
	A2	0.00164	0.00146	0.00140
	A2	0.00868	0.00848	0.00842
	B1	0.00068	0.00045	0.00040
	B1	0.00754	0.00726	0.00724
	C1	0.00016	-0.00009	-0.00011
	C1	0.00619	0.00593	0.00590
	D1	-0.00074	-0.00091	-0.00091
	D1	0.00450	0.00433	0.00436

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00288	0.00258	0.00250
	A1	0.01792	0.01760	0.01745
	A2	0.00283	0.00245	0.00237
	A2	0.01669	0.01631	0.01619
	B1	0.00123	0.00077	0.00072
	B1	0.01268	0.01226	0.01219
	C1	0.00022	-0.00028	-0.00029
	C1	0.01022	0.00971	0.00969
	D1	-0.00129	-0.00162	-0.00159
	D1	0.00706	0.00674	0.00677

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.00503	0.00501	0.00498
	A1	0.00103	0.00099	0.00096
	A2	0.00446	0.00444	0.00443
	A2	0.00074	0.00072	0.00070
	B1	0.00448	0.00447	0.00441
	B1	0.00108	0.00104	0.00101
	C1	0.00414	0.00411	0.00408
	C1	0.00108	0.00104	0.00101
	D1	0.00369	0.00366	0.00362
	D1	0.00107	0.00102	0.00098

sky130_fd_sc_hs__o2111ai_2	**A1**	0.01017	0.01009	0.01004
	A1	0.00218	0.00208	0.00200
	A2	0.00876	0.00872	0.00873
	A2	0.00137	0.00132	0.00131
	B1	0.00915	0.00907	0.00902
	B1	0.00218	0.00210	0.00203
	C1	0.00824	0.00817	0.00816
	C1	0.00221	0.00213	0.00207
	D1	0.00734	0.00726	0.00727
	D1	0.00218	0.00209	0.00202
sky130_fd_sc_hs__o2111ai_4	**A1**	0.01910	0.01891	0.01877
	A1	0.00352	0.00329	0.00316
	A2	0.01643	0.01636	0.01645
	A2	0.00187	0.00174	0.00174
	B1	0.01651	0.01645	0.01634
	B1	0.00479	0.00472	0.00462
	C1	0.01487	0.01482	0.01488
	C1	0.00484	0.00478	0.00469
	D1	0.01303	0.01293	0.01294
	D1	0.00482	0.00473	0.00464

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * B1 * C1 * D1 * !Y)**	0.00081	0.00081	0.00081
	(A2 * B1 * C1 * D1 * !Y)	-0.00089	-0.00090	-0.00089
	(A2 * B1 * C1 * !D1 * Y)	0.00081	0.00081	0.00080
	(A2 * B1 * C1 * !D1 * Y)	-0.00089	-0.00090	-0.00090
	(A2 * B1 * !C1 * Y)	0.00081	0.00081	0.00080
	(A2 * B1 * !C1 * Y)	-0.00089	-0.00090	-0.00090
	(A2 * !B1 * Y)	0.00081	0.00081	0.00080
	(A2 * !B1 * Y)	-0.00089	-0.00090	-0.00090
	(!A2 * B1 * C1 * !D1 * Y)	0.00072	0.00072	0.00072
	(!A2 * B1 * C1 * !D1 * Y)	-0.00092	-0.00092	-0.00092
	(!A2 * B1 * !C1 * D1 * Y)	0.00073	0.00073	0.00073
	(!A2 * B1 * !C1 * D1 * Y)	-0.00092	-0.00092	-0.00092
	(!A2 * B1 * !C1 * !D1 * Y)	0.00073	0.00073	0.00073
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00092	-0.00092	-0.00092
	(!A2 * !B1 * C1 * D1 * Y)	0.00075	0.00075	0.00075
	(!A2 * !B1 * C1 * D1 * Y)	-0.00092	-0.00092	-0.00092
	(!A2 * !B1 * !D1 * Y)	0.00075	0.00075	0.00075
	(!A2 * !B1 * !D1 * Y)	-0.00092	-0.00092	-0.00092
	(!A2 * !B1 * !C1 * D1 * Y)	0.00075	0.00075	0.00075
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00092	-0.00092	-0.00092

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00157	0.00158	0.00156
	(A2 * B1 * C1 * D1 * !Y)	-0.00177	-0.00181	-0.00179
	(A2 * B1 * C1 * !D1 * Y)	0.00156	0.00156	0.00155
	(A2 * B1 * C1 * !D1 * Y)	-0.00179	-0.00182	-0.00181
	(A2 * B1 * !C1 * Y)	0.00156	0.00156	0.00155
	(A2 * B1 * !C1 * Y)	-0.00179	-0.00182	-0.00181
	(A2 * !B1 * Y)	0.00156	0.00157	0.00155
	(A2 * !B1 * Y)	-0.00179	-0.00182	-0.00181
	(!A2 * B1 * C1 * !D1 * Y)	0.00139	0.00139	0.00138
	(!A2 * B1 * C1 * !D1 * Y)	-0.00186	-0.00187	-0.00186
	(!A2 * B1 * !C1 * D1 * Y)	0.00140	0.00141	0.00140
	(!A2 * B1 * !C1 * D1 * Y)	-0.00186	-0.00186	-0.00186
	(!A2 * B1 * !C1 * !D1 * Y)	0.00140	0.00140	0.00140
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00186	-0.00186	-0.00186
	(!A2 * !B1 * C1 * D1 * Y)	0.00144	0.00144	0.00143
	(!A2 * !B1 * C1 * D1 * Y)	-0.00186	-0.00187	-0.00186
	(!A2 * !B1 * !D1 * Y)	0.00143	0.00143	0.00143
	(!A2 * !B1 * !D1 * Y)	-0.00186	-0.00186	-0.00186
	(!A2 * !B1 * !C1 * D1 * Y)	0.00143	0.00143	0.00143
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00186	-0.00186	-0.00186

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00321	0.00321	0.00318
	(A2 * B1 * C1 * D1 * !Y)	-0.00342	-0.00349	-0.00347
	(A2 * B1 * C1 * !D1 * Y)	0.00304	0.00306	0.00304
	(A2 * B1 * C1 * !D1 * Y)	-0.00360	-0.00365	-0.00363
	(A2 * B1 * !C1 * Y)	0.00304	0.00306	0.00304
	(A2 * B1 * !C1 * Y)	-0.00360	-0.00365	-0.00363
	(A2 * !B1 * Y)	0.00304	0.00306	0.00304
	(A2 * !B1 * Y)	-0.00360	-0.00365	-0.00363
	(!A2 * B1 * C1 * !D1 * Y)	0.00269	0.00269	0.00268
	(!A2 * B1 * C1 * !D1 * Y)	-0.00371	-0.00372	-0.00371
	(!A2 * B1 * !C1 * D1 * Y)	0.00273	0.00273	0.00272
	(!A2 * B1 * !C1 * D1 * Y)	-0.00371	-0.00372	-0.00370
	(!A2 * B1 * !C1 * !D1 * Y)	0.00273	0.00274	0.00272
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00371	-0.00372	-0.00370
	(!A2 * !B1 * C1 * D1 * Y)	0.00277	0.00278	0.00279
	(!A2 * !B1 * C1 * D1 * Y)	-0.00368	-0.00370	-0.00370
	(!A2 * !B1 * !D1 * Y)	0.00277	0.00278	0.00279
	(!A2 * !B1 * !D1 * Y)	-0.00368	-0.00370	-0.00370
	(!A2 * !B1 * !C1 * D1 * Y)	0.00277	0.00278	0.00279
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00368	-0.00370	-0.00370

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * B1 * C1 * D1 * !Y)**	-0.00081	-0.00081	-0.00081
	(A2 * B1 * C1 * D1 * !Y)	0.00090	0.00090	0.00089
	(A2 * B1 * C1 * !D1 * Y)	-0.00081	-0.00081	-0.00080
	(A2 * B1 * C1 * !D1 * Y)	0.00091	0.00090	0.00090
	(A2 * B1 * !C1 * Y)	-0.00081	-0.00081	-0.00080
	(A2 * B1 * !C1 * Y)	0.00091	0.00090	0.00090
	(A2 * !B1 * Y)	-0.00081	-0.00081	-0.00080
	(A2 * !B1 * Y)	0.00091	0.00090	0.00090
	(!A2 * B1 * C1 * !D1 * Y)	-0.00070	-0.00072	-0.00072
	(!A2 * B1 * C1 * !D1 * Y)	0.00093	0.00093	0.00092
	(!A2 * B1 * !C1 * D1 * Y)	-0.00071	-0.00073	-0.00073
	(!A2 * B1 * !C1 * D1 * Y)	0.00092	0.00093	0.00092
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00071	-0.00073	-0.00073
	(!A2 * B1 * !C1 * !D1 * Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * C1 * D1 * Y)	-0.00073	-0.00075	-0.00075
	(!A2 * !B1 * C1 * D1 * Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * !D1 * Y)	-0.00073	-0.00075	-0.00075
	(!A2 * !B1 * !D1 * Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00073	-0.00075	-0.00075
	(!A2 * !B1 * !C1 * D1 * Y)	0.00092	0.00093	0.00092

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00157	-0.00157	-0.00156
	(A2 * B1 * C1 * D1 * !Y)	0.00180	0.00181	0.00179
	(A2 * B1 * C1 * !D1 * Y)	-0.00155	-0.00156	-0.00155
	(A2 * B1 * C1 * !D1 * Y)	0.00181	0.00182	0.00181
	(A2 * B1 * !C1 * Y)	-0.00154	-0.00156	-0.00155
	(A2 * B1 * !C1 * Y)	0.00179	0.00182	0.00181
	(A2 * !B1 * Y)	-0.00156	-0.00156	-0.00155
	(A2 * !B1 * Y)	0.00182	0.00182	0.00181
	(!A2 * B1 * C1 * !D1 * Y)	-0.00133	-0.00139	-0.00138
	(!A2 * B1 * C1 * !D1 * Y)	0.00186	0.00189	0.00186
	(!A2 * B1 * !C1 * D1 * Y)	-0.00136	-0.00141	-0.00140
	(!A2 * B1 * !C1 * D1 * Y)	0.00187	0.00188	0.00186
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00136	-0.00140	-0.00140
	(!A2 * B1 * !C1 * !D1 * Y)	0.00187	0.00188	0.00186
	(!A2 * !B1 * C1 * D1 * Y)	-0.00141	-0.00144	-0.00143
	(!A2 * !B1 * C1 * D1 * Y)	0.00187	0.00188	0.00186
	(!A2 * !B1 * !D1 * Y)	-0.00141	-0.00143	-0.00143
	(!A2 * !B1 * !D1 * Y)	0.00187	0.00188	0.00186
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00141	-0.00143	-0.00143
	(!A2 * !B1 * !C1 * D1 * Y)	0.00187	0.00188	0.00186

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00320	-0.00320	-0.00318
	(A2 * B1 * C1 * D1 * !Y)	0.00348	0.00349	0.00347
	(A2 * B1 * C1 * !D1 * Y)	-0.00304	-0.00304	-0.00303
	(A2 * B1 * C1 * !D1 * Y)	0.00364	0.00365	0.00363
	(A2 * B1 * !C1 * Y)	-0.00304	-0.00304	-0.00303
	(A2 * B1 * !C1 * Y)	0.00365	0.00365	0.00363
	(A2 * !B1 * Y)	-0.00304	-0.00304	-0.00303
	(A2 * !B1 * Y)	0.00365	0.00365	0.00363
	(!A2 * B1 * C1 * !D1 * Y)	-0.00258	-0.00269	-0.00268
	(!A2 * B1 * C1 * !D1 * Y)	0.00371	0.00374	0.00372
	(!A2 * B1 * !C1 * D1 * Y)	-0.00263	-0.00273	-0.00272
	(!A2 * B1 * !C1 * D1 * Y)	0.00373	0.00376	0.00371
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00263	-0.00274	-0.00272
	(!A2 * B1 * !C1 * !D1 * Y)	0.00373	0.00374	0.00371
	(!A2 * !B1 * C1 * D1 * Y)	-0.00273	-0.00278	-0.00279
	(!A2 * !B1 * C1 * D1 * Y)	0.00371	0.00374	0.00371
	(!A2 * !B1 * !D1 * Y)	-0.00273	-0.00278	-0.00279
	(!A2 * !B1 * !D1 * Y)	0.00371	0.00374	0.00371
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00273	-0.00278	-0.00279
	(!A2 * !B1 * !C1 * D1 * Y)	0.00371	0.00374	0.00371

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A1 * B1 * C1 * D1 * !Y)**	0.00089	0.00089	0.00088
	(A1 * B1 * C1 * D1 * !Y)	-0.00059	-0.00058	-0.00058
	(A1 * B1 * C1 * !D1 * Y)	0.00079	0.00079	0.00078
	(A1 * B1 * C1 * !D1 * Y)	-0.00088	-0.00089	-0.00088
	(A1 * B1 * !C1 * D1 * Y)	0.00079	0.00079	0.00078
	(A1 * B1 * !C1 * D1 * Y)	-0.00088	-0.00089	-0.00088
	(A1 * B1 * !C1 * !D1 * Y)	0.00079	0.00080	0.00078
	(A1 * B1 * !C1 * !D1 * Y)	-0.00088	-0.00089	-0.00088
	(A1 * !B1 * C1 * D1 * Y)	0.00079	0.00079	0.00078
	(A1 * !B1 * C1 * D1 * Y)	-0.00088	-0.00089	-0.00088
	(A1 * !B1 * !D1 * Y)	0.00079	0.00080	0.00078
	(A1 * !B1 * !D1 * Y)	-0.00088	-0.00089	-0.00088
	(A1 * !B1 * !C1 * D1 * Y)	0.00079	0.00080	0.00078
	(A1 * !B1 * !C1 * D1 * Y)	-0.00088	-0.00089	-0.00088
	(!A1 * B1 * C1 * !D1 * Y)	0.00069	0.00070	0.00070
	(!A1 * B1 * C1 * !D1 * Y)	-0.00090	-0.00091	-0.00091
	(!A1 * B1 * !C1 * D1 * Y)	0.00070	0.00071	0.00071
	(!A1 * B1 * !C1 * D1 * Y)	-0.00090	-0.00091	-0.00091
	(!A1 * B1 * !C1 * !D1 * Y)	0.00071	0.00071	0.00071
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00090	-0.00091	-0.00091
	(!A1 * !B1 * C1 * D1 * Y)	0.00073	0.00073	0.00073
	(!A1 * !B1 * C1 * D1 * Y)	-0.00091	-0.00091	-0.00091
	(!A1 * !B1 * !D1 * Y)	0.00073	0.00073	0.00073
	(!A1 * !B1 * !D1 * Y)	-0.00091	-0.00091	-0.00091
	(!A1 * !B1 * !C1 * D1 * Y)	0.00073	0.00073	0.00073
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00091	-0.00091	-0.00091

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00175	0.00173	0.00172
	(A1 * B1 * C1 * D1 * !Y)	-0.00121	-0.00119	-0.00118
	(A1 * B1 * C1 * !D1 * Y)	0.00152	0.00154	0.00152
	(A1 * B1 * C1 * !D1 * Y)	-0.00176	-0.00179	-0.00178
	(A1 * B1 * !C1 * D1 * Y)	0.00152	0.00154	0.00152
	(A1 * B1 * !C1 * D1 * Y)	-0.00176	-0.00179	-0.00178
	(A1 * B1 * !C1 * !D1 * Y)	0.00152	0.00153	0.00152
	(A1 * B1 * !C1 * !D1 * Y)	-0.00176	-0.00179	-0.00178
	(A1 * !B1 * C1 * D1 * Y)	0.00152	0.00154	0.00152
	(A1 * !B1 * C1 * D1 * Y)	-0.00176	-0.00179	-0.00178
	(A1 * !B1 * !D1 * Y)	0.00152	0.00153	0.00152
	(A1 * !B1 * !D1 * Y)	-0.00176	-0.00179	-0.00178
	(A1 * !B1 * !C1 * D1 * Y)	0.00152	0.00153	0.00152
	(A1 * !B1 * !C1 * D1 * Y)	-0.00176	-0.00179	-0.00178
	(!A1 * B1 * C1 * !D1 * Y)	0.00135	0.00135	0.00135
	(!A1 * B1 * C1 * !D1 * Y)	-0.00183	-0.00184	-0.00183
	(!A1 * B1 * !C1 * D1 * Y)	0.00137	0.00137	0.00137
	(!A1 * B1 * !C1 * D1 * Y)	-0.00183	-0.00184	-0.00183
	(!A1 * B1 * !C1 * !D1 * Y)	0.00137	0.00138	0.00137
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00184	-0.00184	-0.00183
	(!A1 * !B1 * C1 * D1 * Y)	0.00141	0.00140	0.00140
	(!A1 * !B1 * C1 * D1 * Y)	-0.00184	-0.00184	-0.00183
	(!A1 * !B1 * !D1 * Y)	0.00138	0.00141	0.00140
	(!A1 * !B1 * !D1 * Y)	-0.00182	-0.00184	-0.00183
	(!A1 * !B1 * !C1 * D1 * Y)	0.00138	0.00141	0.00140
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00182	-0.00184	-0.00183

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00357	0.00356	0.00355
	(A1 * B1 * C1 * D1 * !Y)	-0.00239	-0.00238	-0.00236
	(A1 * B1 * C1 * !D1 * Y)	0.00310	0.00310	0.00309
	(A1 * B1 * C1 * !D1 * Y)	-0.00359	-0.00363	-0.00361
	(A1 * B1 * !C1 * D1 * Y)	0.00310	0.00310	0.00309
	(A1 * B1 * !C1 * D1 * Y)	-0.00359	-0.00363	-0.00361
	(A1 * B1 * !C1 * !D1 * Y)	0.00310	0.00313	0.00309
	(A1 * B1 * !C1 * !D1 * Y)	-0.00360	-0.00363	-0.00361
	(A1 * !B1 * C1 * D1 * Y)	0.00310	0.00310	0.00309
	(A1 * !B1 * C1 * D1 * Y)	-0.00359	-0.00363	-0.00361
	(A1 * !B1 * !D1 * Y)	0.00310	0.00313	0.00309
	(A1 * !B1 * !D1 * Y)	-0.00360	-0.00363	-0.00361
	(A1 * !B1 * !C1 * D1 * Y)	0.00310	0.00313	0.00309
	(A1 * !B1 * !C1 * D1 * Y)	-0.00360	-0.00363	-0.00361
	(!A1 * B1 * C1 * !D1 * Y)	0.00272	0.00273	0.00272
	(!A1 * B1 * C1 * !D1 * Y)	-0.00371	-0.00372	-0.00371
	(!A1 * B1 * !C1 * D1 * Y)	0.00277	0.00280	0.00276
	(!A1 * B1 * !C1 * D1 * Y)	-0.00371	-0.00373	-0.00370
	(!A1 * B1 * !C1 * !D1 * Y)	0.00277	0.00279	0.00276
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00371	-0.00372	-0.00370
	(!A1 * !B1 * C1 * D1 * Y)	0.00286	0.00284	0.00283
	(!A1 * !B1 * C1 * D1 * Y)	-0.00370	-0.00371	-0.00370
	(!A1 * !B1 * !D1 * Y)	0.00285	0.00287	0.00284
	(!A1 * !B1 * !D1 * Y)	-0.00370	-0.00373	-0.00371
	(!A1 * !B1 * !C1 * D1 * Y)	0.00285	0.00287	0.00284
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00370	-0.00373	-0.00371

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A1 * B1 * C1 * D1 * !Y)**	-0.00087	-0.00087	-0.00088
	(A1 * B1 * C1 * D1 * !Y)	0.00059	0.00060	0.00059
	(A1 * B1 * C1 * !D1 * Y)	-0.00079	-0.00079	-0.00078
	(A1 * B1 * C1 * !D1 * Y)	0.00088	0.00089	0.00088
	(A1 * B1 * !C1 * D1 * Y)	-0.00079	-0.00079	-0.00078
	(A1 * B1 * !C1 * D1 * Y)	0.00088	0.00089	0.00088
	(A1 * B1 * !C1 * !D1 * Y)	-0.00079	-0.00079	-0.00078
	(A1 * B1 * !C1 * !D1 * Y)	0.00089	0.00089	0.00088
	(A1 * !B1 * C1 * D1 * Y)	-0.00079	-0.00079	-0.00078
	(A1 * !B1 * C1 * D1 * Y)	0.00088	0.00089	0.00088
	(A1 * !B1 * !D1 * Y)	-0.00079	-0.00079	-0.00078
	(A1 * !B1 * !D1 * Y)	0.00088	0.00089	0.00088
	(A1 * !B1 * !C1 * D1 * Y)	-0.00079	-0.00079	-0.00078
	(A1 * !B1 * !C1 * D1 * Y)	0.00088	0.00089	0.00088
	(!A1 * B1 * C1 * !D1 * Y)	-0.00068	-0.00070	-0.00070
	(!A1 * B1 * C1 * !D1 * Y)	0.00091	0.00091	0.00091
	(!A1 * B1 * !C1 * D1 * Y)	-0.00069	-0.00071	-0.00071
	(!A1 * B1 * !C1 * D1 * Y)	0.00091	0.00091	0.00091
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00069	-0.00071	-0.00071
	(!A1 * B1 * !C1 * !D1 * Y)	0.00091	0.00091	0.00091
	(!A1 * !B1 * C1 * D1 * Y)	-0.00071	-0.00073	-0.00073
	(!A1 * !B1 * C1 * D1 * Y)	0.00091	0.00091	0.00091
	(!A1 * !B1 * !D1 * Y)	-0.00071	-0.00073	-0.00073
	(!A1 * !B1 * !D1 * Y)	0.00091	0.00091	0.00091
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00071	-0.00073	-0.00073
	(!A1 * !B1 * !C1 * D1 * Y)	0.00091	0.00091	0.00091

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00166	-0.00167	-0.00172
	(A1 * B1 * C1 * D1 * !Y)	0.00123	0.00124	0.00120
	(A1 * B1 * C1 * !D1 * Y)	-0.00152	-0.00152	-0.00151
	(A1 * B1 * C1 * !D1 * Y)	0.00178	0.00179	0.00178
	(A1 * B1 * !C1 * D1 * Y)	-0.00151	-0.00152	-0.00151
	(A1 * B1 * !C1 * D1 * Y)	0.00177	0.00179	0.00178
	(A1 * B1 * !C1 * !D1 * Y)	-0.00151	-0.00152	-0.00151
	(A1 * B1 * !C1 * !D1 * Y)	0.00177	0.00179	0.00178
	(A1 * !B1 * C1 * D1 * Y)	-0.00151	-0.00152	-0.00151
	(A1 * !B1 * C1 * D1 * Y)	0.00176	0.00179	0.00178
	(A1 * !B1 * !D1 * Y)	-0.00150	-0.00152	-0.00151
	(A1 * !B1 * !D1 * Y)	0.00176	0.00179	0.00178
	(A1 * !B1 * !C1 * D1 * Y)	-0.00150	-0.00152	-0.00151
	(A1 * !B1 * !C1 * D1 * Y)	0.00176	0.00179	0.00178
	(!A1 * B1 * C1 * !D1 * Y)	-0.00130	-0.00135	-0.00135
	(!A1 * B1 * C1 * !D1 * Y)	0.00183	0.00185	0.00184
	(!A1 * B1 * !C1 * D1 * Y)	-0.00132	-0.00137	-0.00137
	(!A1 * B1 * !C1 * D1 * Y)	0.00184	0.00185	0.00184
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00132	-0.00138	-0.00137
	(!A1 * B1 * !C1 * !D1 * Y)	0.00184	0.00185	0.00184
	(!A1 * !B1 * C1 * D1 * Y)	-0.00137	-0.00140	-0.00140
	(!A1 * !B1 * C1 * D1 * Y)	0.00184	0.00185	0.00184
	(!A1 * !B1 * !D1 * Y)	-0.00137	-0.00141	-0.00140
	(!A1 * !B1 * !D1 * Y)	0.00184	0.00185	0.00184
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00137	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * D1 * Y)	0.00184	0.00185	0.00184

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00342	-0.00345	-0.00355
	(A1 * B1 * C1 * D1 * !Y)	0.00250	0.00249	0.00239
	(A1 * B1 * C1 * !D1 * Y)	-0.00309	-0.00310	-0.00308
	(A1 * B1 * C1 * !D1 * Y)	0.00362	0.00363	0.00361
	(A1 * B1 * !C1 * D1 * Y)	-0.00310	-0.00310	-0.00308
	(A1 * B1 * !C1 * D1 * Y)	0.00363	0.00363	0.00361
	(A1 * B1 * !C1 * !D1 * Y)	-0.00309	-0.00310	-0.00308
	(A1 * B1 * !C1 * !D1 * Y)	0.00363	0.00363	0.00361
	(A1 * !B1 * C1 * D1 * Y)	-0.00310	-0.00310	-0.00308
	(A1 * !B1 * C1 * D1 * Y)	0.00362	0.00363	0.00361
	(A1 * !B1 * !D1 * Y)	-0.00309	-0.00310	-0.00308
	(A1 * !B1 * !D1 * Y)	0.00363	0.00363	0.00361
	(A1 * !B1 * !C1 * D1 * Y)	-0.00309	-0.00310	-0.00308
	(A1 * !B1 * !C1 * D1 * Y)	0.00363	0.00363	0.00361
	(!A1 * B1 * C1 * !D1 * Y)	-0.00263	-0.00273	-0.00272
	(!A1 * B1 * C1 * !D1 * Y)	0.00371	0.00373	0.00371
	(!A1 * B1 * !C1 * D1 * Y)	-0.00268	-0.00280	-0.00276
	(!A1 * B1 * !C1 * D1 * Y)	0.00372	0.00373	0.00371
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00268	-0.00279	-0.00276
	(!A1 * B1 * !C1 * !D1 * Y)	0.00372	0.00373	0.00371
	(!A1 * !B1 * C1 * D1 * Y)	-0.00277	-0.00284	-0.00283
	(!A1 * !B1 * C1 * D1 * Y)	0.00370	0.00373	0.00371
	(!A1 * !B1 * !D1 * Y)	-0.00277	-0.00287	-0.00284
	(!A1 * !B1 * !D1 * Y)	0.00370	0.00374	0.00371
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00277	-0.00287	-0.00284
	(!A1 * !B1 * !C1 * D1 * Y)	0.00370	0.00374	0.00371

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * C1 * !D1 * Y)**	0.00068	0.00069	0.00068
	(A2 * C1 * !D1 * Y)	-0.00092	-0.00092	-0.00092
	(A2 * !C1 * D1 * Y)	0.00070	0.00071	0.00071
	(A2 * !C1 * D1 * Y)	-0.00091	-0.00092	-0.00092
	(A2 * !C1 * !D1 * Y)	0.00071	0.00071	0.00071
	(A2 * !C1 * !D1 * Y)	-0.00091	-0.00092	-0.00092
	(A1 * !A2 * C1 * !D1 * Y)	0.00068	0.00068	0.00068
	(A1 * !A2 * C1 * !D1 * Y)	-0.00092	-0.00092	-0.00092
	(A1 * !A2 * !C1 * D1 * Y)	0.00071	0.00071	0.00071
	(A1 * !A2 * !C1 * D1 * Y)	-0.00092	-0.00092	-0.00092
	(A1 * !A2 * !C1 * !D1 * Y)	0.00070	0.00071	0.00071
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00091	-0.00092	-0.00092
	(!A1 * !A2 * C1 * D1 * Y)	0.00041	0.00041	0.00042
	(!A1 * !A2 * C1 * D1 * Y)	-0.00089	-0.00089	-0.00089
	(!A1 * !A2 * C1 * !D1 * Y)	0.00044	0.00044	0.00043
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00092	-0.00092	-0.00092
	(!A1 * !A2 * !C1 * D1 * Y)	0.00046	0.00046	0.00046
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00092	-0.00092	-0.00092
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00047	0.00047	0.00047
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00092	-0.00092	-0.00092

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00146	0.00147	0.00146
	(A2 * C1 * !D1 * Y)	-0.00191	-0.00191	-0.00191
	(A2 * !C1 * D1 * Y)	0.00150	0.00151	0.00150
	(A2 * !C1 * D1 * Y)	-0.00190	-0.00192	-0.00191
	(A2 * !C1 * !D1 * Y)	0.00150	0.00151	0.00150
	(A2 * !C1 * !D1 * Y)	-0.00191	-0.00191	-0.00191
	(A1 * !A2 * C1 * !D1 * Y)	0.00145	0.00146	0.00145
	(A1 * !A2 * C1 * !D1 * Y)	-0.00191	-0.00191	-0.00191
	(A1 * !A2 * !C1 * D1 * Y)	0.00150	0.00151	0.00150
	(A1 * !A2 * !C1 * D1 * Y)	-0.00191	-0.00192	-0.00191
	(A1 * !A2 * !C1 * !D1 * Y)	0.00150	0.00151	0.00150
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00191	-0.00192	-0.00191
	(!A1 * !A2 * C1 * D1 * Y)	0.00087	0.00086	0.00087
	(!A1 * !A2 * C1 * D1 * Y)	-0.00188	-0.00188	-0.00187
	(!A1 * !A2 * C1 * !D1 * Y)	0.00092	0.00092	0.00092
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00191	-0.00191	-0.00191
	(!A1 * !A2 * !C1 * D1 * Y)	0.00095	0.00095	0.00095
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00191	-0.00191	-0.00191
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00097	0.00098	0.00098
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00190	-0.00192	-0.00191

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00276	0.00279	0.00277
	(A2 * C1 * !D1 * Y)	-0.00200	-0.00201	-0.00201
	(A2 * !C1 * D1 * Y)	0.00287	0.00290	0.00287
	(A2 * !C1 * D1 * Y)	-0.00200	-0.00201	-0.00200
	(A2 * !C1 * !D1 * Y)	0.00287	0.00289	0.00287
	(A2 * !C1 * !D1 * Y)	-0.00200	-0.00201	-0.00200
	(A1 * !A2 * C1 * !D1 * Y)	0.00276	0.00278	0.00277
	(A1 * !A2 * C1 * !D1 * Y)	-0.00200	-0.00201	-0.00201
	(A1 * !A2 * !C1 * D1 * Y)	0.00288	0.00289	0.00287
	(A1 * !A2 * !C1 * D1 * Y)	-0.00200	-0.00201	-0.00200
	(A1 * !A2 * !C1 * !D1 * Y)	0.00288	0.00289	0.00287
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00200	-0.00201	-0.00200
	(!A1 * !A2 * C1 * D1 * Y)	0.00162	0.00161	0.00162
	(!A1 * !A2 * C1 * D1 * Y)	-0.00193	-0.00192	-0.00191
	(!A1 * !A2 * C1 * !D1 * Y)	0.00171	0.00172	0.00171
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00201	-0.00202	-0.00201
	(!A1 * !A2 * !C1 * D1 * Y)	0.00176	0.00178	0.00177
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00200	-0.00201	-0.00200
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00181	0.00183	0.00181
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00200	-0.00201	-0.00200

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * C1 * !D1 * Y)**	-0.00066	-0.00069	-0.00068
	(A2 * C1 * !D1 * Y)	0.00092	0.00093	0.00092
	(A2 * !C1 * D1 * Y)	-0.00070	-0.00071	-0.00071
	(A2 * !C1 * D1 * Y)	0.00092	0.00093	0.00092
	(A2 * !C1 * !D1 * Y)	-0.00070	-0.00071	-0.00071
	(A2 * !C1 * !D1 * Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * C1 * !D1 * Y)	-0.00066	-0.00068	-0.00068
	(A1 * !A2 * C1 * !D1 * Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * !C1 * D1 * Y)	-0.00070	-0.00071	-0.00071
	(A1 * !A2 * !C1 * D1 * Y)	0.00092	0.00093	0.00092
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00070	-0.00071	-0.00071
	(A1 * !A2 * !C1 * !D1 * Y)	0.00092	0.00093	0.00092
	(!A1 * !A2 * C1 * D1 * Y)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * C1 * D1 * Y)	0.00093	0.00093	0.00092
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00044	-0.00044	-0.00043
	(!A1 * !A2 * C1 * !D1 * Y)	0.00092	0.00092	0.00092
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !C1 * D1 * Y)	0.00092	0.00092	0.00092
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00092	0.00092	0.00092

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00142	-0.00147	-0.00146
	(A2 * C1 * !D1 * Y)	0.00193	0.00193	0.00191
	(A2 * !C1 * D1 * Y)	-0.00148	-0.00151	-0.00150
	(A2 * !C1 * D1 * Y)	0.00191	0.00193	0.00191
	(A2 * !C1 * !D1 * Y)	-0.00148	-0.00151	-0.00150
	(A2 * !C1 * !D1 * Y)	0.00191	0.00193	0.00191
	(A1 * !A2 * C1 * !D1 * Y)	-0.00140	-0.00146	-0.00145
	(A1 * !A2 * C1 * !D1 * Y)	0.00192	0.00193	0.00191
	(A1 * !A2 * !C1 * D1 * Y)	-0.00147	-0.00151	-0.00150
	(A1 * !A2 * !C1 * D1 * Y)	0.00191	0.00193	0.00191
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00147	-0.00151	-0.00150
	(A1 * !A2 * !C1 * !D1 * Y)	0.00191	0.00193	0.00191
	(!A1 * !A2 * C1 * D1 * Y)	-0.00083	-0.00083	-0.00083
	(!A1 * !A2 * C1 * D1 * Y)	0.00192	0.00192	0.00191
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00092	-0.00092	-0.00092
	(!A1 * !A2 * C1 * !D1 * Y)	0.00191	0.00193	0.00192
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00095	-0.00095	-0.00095
	(!A1 * !A2 * !C1 * D1 * Y)	0.00191	0.00192	0.00191
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00097	-0.00098	-0.00098
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00191	0.00192	0.00191

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00269	-0.00279	-0.00277
	(A2 * C1 * !D1 * Y)	0.00202	0.00203	0.00201
	(A2 * !C1 * D1 * Y)	-0.00282	-0.00290	-0.00287
	(A2 * !C1 * D1 * Y)	0.00200	0.00202	0.00201
	(A2 * !C1 * !D1 * Y)	-0.00282	-0.00289	-0.00287
	(A2 * !C1 * !D1 * Y)	0.00200	0.00202	0.00201
	(A1 * !A2 * C1 * !D1 * Y)	-0.00267	-0.00278	-0.00277
	(A1 * !A2 * C1 * !D1 * Y)	0.00202	0.00203	0.00201
	(A1 * !A2 * !C1 * D1 * Y)	-0.00282	-0.00289	-0.00287
	(A1 * !A2 * !C1 * D1 * Y)	0.00200	0.00202	0.00201
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00282	-0.00289	-0.00287
	(A1 * !A2 * !C1 * !D1 * Y)	0.00200	0.00203	0.00201
	(!A1 * !A2 * C1 * D1 * Y)	-0.00153	-0.00155	-0.00153
	(!A1 * !A2 * C1 * D1 * Y)	0.00201	0.00204	0.00201
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00171	-0.00172	-0.00171
	(!A1 * !A2 * C1 * !D1 * Y)	0.00202	0.00204	0.00202
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00176	-0.00178	-0.00177
	(!A1 * !A2 * !C1 * D1 * Y)	0.00201	0.00203	0.00201
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00181	-0.00183	-0.00181
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00201	0.00203	0.00201

Passive power(pJ) for C1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * B1 * !D1 * Y)**	0.00072	0.00072	0.00072
	(A2 * B1 * !D1 * Y)	-0.00095	-0.00095	-0.00095
	(A2 * !B1 * D1 * Y)	0.00041	0.00041	0.00041
	(A2 * !B1 * D1 * Y)	-0.00095	-0.00095	-0.00095
	(A2 * !B1 * !D1 * Y)	0.00044	0.00044	0.00044
	(A2 * !B1 * !D1 * Y)	-0.00095	-0.00096	-0.00095
	(A1 * !A2 * B1 * !D1 * Y)	0.00072	0.00073	0.00072
	(A1 * !A2 * B1 * !D1 * Y)	-0.00095	-0.00096	-0.00095
	(!A2 * !B1 * D1 * Y)	0.00041	0.00042	0.00041
	(!A2 * !B1 * D1 * Y)	-0.00095	-0.00095	-0.00095
	(!A2 * !B1 * !D1 * Y)	0.00044	0.00044	0.00044
	(!A2 * !B1 * !D1 * Y)	-0.00095	-0.00096	-0.00095
	(!A1 * !A2 * B1 * D1 * Y)	0.00040	0.00041	0.00040
	(!A1 * !A2 * B1 * D1 * Y)	-0.00095	-0.00096	-0.00094
	(!A1 * !A2 * B1 * !D1 * Y)	0.00046	0.00046	0.00045
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00095	-0.00096	-0.00095

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00142	0.00143	0.00142
	(A2 * B1 * !D1 * Y)	-0.00186	-0.00186	-0.00186
	(A2 * !B1 * D1 * Y)	0.00082	0.00082	0.00083
	(A2 * !B1 * D1 * Y)	-0.00185	-0.00185	-0.00185
	(A2 * !B1 * !D1 * Y)	0.00089	0.00089	0.00088
	(A2 * !B1 * !D1 * Y)	-0.00186	-0.00187	-0.00186
	(A1 * !A2 * B1 * !D1 * Y)	0.00141	0.00141	0.00142
	(A1 * !A2 * B1 * !D1 * Y)	-0.00186	-0.00185	-0.00186
	(!A2 * !B1 * D1 * Y)	0.00082	0.00083	0.00083
	(!A2 * !B1 * D1 * Y)	-0.00185	-0.00186	-0.00185
	(!A2 * !B1 * !D1 * Y)	0.00088	0.00089	0.00088
	(!A2 * !B1 * !D1 * Y)	-0.00186	-0.00187	-0.00186
	(!A1 * !A2 * B1 * D1 * Y)	0.00078	0.00078	0.00080
	(!A1 * !A2 * B1 * D1 * Y)	-0.00185	-0.00184	-0.00184
	(!A1 * !A2 * B1 * !D1 * Y)	0.00090	0.00091	0.00090
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00185	-0.00186	-0.00186

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00280	0.00282	0.00281
	(A2 * B1 * !D1 * Y)	-0.00198	-0.00198	-0.00198
	(A2 * !B1 * D1 * Y)	0.00157	0.00157	0.00156
	(A2 * !B1 * D1 * Y)	-0.00198	-0.00199	-0.00198
	(A2 * !B1 * !D1 * Y)	0.00166	0.00166	0.00165
	(A2 * !B1 * !D1 * Y)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * B1 * !D1 * Y)	0.00280	0.00282	0.00281
	(A1 * !A2 * B1 * !D1 * Y)	-0.00197	-0.00199	-0.00198
	(!A2 * !B1 * D1 * Y)	0.00157	0.00157	0.00156
	(!A2 * !B1 * D1 * Y)	-0.00198	-0.00198	-0.00198
	(!A2 * !B1 * !D1 * Y)	0.00166	0.00166	0.00165
	(!A2 * !B1 * !D1 * Y)	-0.00200	-0.00200	-0.00199
	(!A1 * !A2 * B1 * D1 * Y)	0.00151	0.00151	0.00152
	(!A1 * !A2 * B1 * D1 * Y)	-0.00196	-0.00197	-0.00195
	(!A1 * !A2 * B1 * !D1 * Y)	0.00173	0.00173	0.00172
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00199	-0.00200	-0.00199

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * B1 * !D1 * Y)**	-0.00071	-0.00072	-0.00072
	(A2 * B1 * !D1 * Y)	0.00095	0.00096	0.00096
	(A2 * !B1 * D1 * Y)	-0.00040	-0.00040	-0.00040
	(A2 * !B1 * D1 * Y)	0.00098	0.00098	0.00096
	(A2 * !B1 * !D1 * Y)	-0.00044	-0.00044	-0.00044
	(A2 * !B1 * !D1 * Y)	0.00095	0.00096	0.00095
	(A1 * !A2 * B1 * !D1 * Y)	-0.00071	-0.00073	-0.00072
	(A1 * !A2 * B1 * !D1 * Y)	0.00095	0.00096	0.00095
	(!A2 * !B1 * D1 * Y)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * D1 * Y)	0.00098	0.00098	0.00096
	(!A2 * !B1 * !D1 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * !D1 * Y)	0.00095	0.00096	0.00095
	(!A1 * !A2 * B1 * D1 * Y)	-0.00038	-0.00038	-0.00039
	(!A1 * !A2 * B1 * D1 * Y)	0.00098	0.00098	0.00096
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00046	-0.00046	-0.00045
	(!A1 * !A2 * B1 * !D1 * Y)	0.00095	0.00096	0.00095

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00140	-0.00143	-0.00142
	(A2 * B1 * !D1 * Y)	0.00187	0.00186	0.00186
	(A2 * !B1 * D1 * Y)	-0.00078	-0.00078	-0.00080
	(A2 * !B1 * D1 * Y)	0.00193	0.00192	0.00187
	(A2 * !B1 * !D1 * Y)	-0.00089	-0.00089	-0.00088
	(A2 * !B1 * !D1 * Y)	0.00186	0.00188	0.00187
	(A1 * !A2 * B1 * !D1 * Y)	-0.00139	-0.00141	-0.00142
	(A1 * !A2 * B1 * !D1 * Y)	0.00186	0.00187	0.00186
	(!A2 * !B1 * D1 * Y)	-0.00078	-0.00078	-0.00080
	(!A2 * !B1 * D1 * Y)	0.00193	0.00192	0.00187
	(!A2 * !B1 * !D1 * Y)	-0.00088	-0.00089	-0.00088
	(!A2 * !B1 * !D1 * Y)	0.00186	0.00188	0.00187
	(!A1 * !A2 * B1 * D1 * Y)	-0.00076	-0.00076	-0.00077
	(!A1 * !A2 * B1 * D1 * Y)	0.00193	0.00192	0.00187
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00090	-0.00091	-0.00090
	(!A1 * !A2 * B1 * !D1 * Y)	0.00188	0.00189	0.00186

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00274	-0.00282	-0.00281
	(A2 * B1 * !D1 * Y)	0.00198	0.00199	0.00198
	(A2 * !B1 * D1 * Y)	-0.00148	-0.00148	-0.00151
	(A2 * !B1 * D1 * Y)	0.00211	0.00209	0.00200
	(A2 * !B1 * !D1 * Y)	-0.00166	-0.00166	-0.00165
	(A2 * !B1 * !D1 * Y)	0.00200	0.00201	0.00200
	(A1 * !A2 * B1 * !D1 * Y)	-0.00273	-0.00282	-0.00281
	(A1 * !A2 * B1 * !D1 * Y)	0.00197	0.00199	0.00198
	(!A2 * !B1 * D1 * Y)	-0.00148	-0.00148	-0.00151
	(!A2 * !B1 * D1 * Y)	0.00211	0.00209	0.00200
	(!A2 * !B1 * !D1 * Y)	-0.00166	-0.00166	-0.00165
	(!A2 * !B1 * !D1 * Y)	0.00200	0.00201	0.00200
	(!A1 * !A2 * B1 * D1 * Y)	-0.00144	-0.00144	-0.00147
	(!A1 * !A2 * B1 * D1 * Y)	0.00211	0.00209	0.00200
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00173	-0.00173	-0.00172
	(!A1 * !A2 * B1 * !D1 * Y)	0.00199	0.00202	0.00199

Passive power(pJ) for D1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00031	0.00031	0.00030
	(A2 * !C1 * Y)	-0.00112	-0.00112	-0.00113
	(A2 * !B1 * C1 * Y)	0.00032	0.00032	0.00030
	(A2 * !B1 * C1 * Y)	-0.00108	-0.00108	-0.00113
	(!A2 * !C1 * Y)	0.00031	0.00030	0.00030
	(!A2 * !C1 * Y)	-0.00112	-0.00112	-0.00113
	(!A2 * !B1 * C1 * Y)	0.00032	0.00032	0.00030
	(!A2 * !B1 * C1 * Y)	-0.00108	-0.00108	-0.00113
	(!A1 * !A2 * B1 * C1 * Y)	0.00035	0.00035	0.00031
	(!A1 * !A2 * B1 * C1 * Y)	-0.00101	-0.00102	-0.00112

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00070	0.00070	0.00067
	(A2 * !C1 * Y)	-0.00211	-0.00212	-0.00217
	(A2 * !B1 * C1 * Y)	0.00071	0.00071	0.00065
	(A2 * !B1 * C1 * Y)	-0.00204	-0.00205	-0.00216
	(!A2 * !C1 * Y)	0.00070	0.00070	0.00067
	(!A2 * !C1 * Y)	-0.00212	-0.00212	-0.00217
	(!A2 * !B1 * C1 * Y)	0.00071	0.00071	0.00065
	(!A2 * !B1 * C1 * Y)	-0.00204	-0.00204	-0.00216
	(!A1 * !A2 * B1 * C1 * Y)	0.00076	0.00076	0.00065
	(!A1 * !A2 * B1 * C1 * Y)	-0.00192	-0.00193	-0.00213
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00126	0.00125	0.00120
	(A2 * !C1 * Y)	-0.00256	-0.00257	-0.00265
	(A2 * !B1 * C1 * Y)	0.00128	0.00128	0.00117
	(A2 * !B1 * C1 * Y)	-0.00240	-0.00242	-0.00263
	(!A2 * !C1 * Y)	0.00126	0.00126	0.00120
	(!A2 * !C1 * Y)	-0.00255	-0.00258	-0.00265
	(!A2 * !B1 * C1 * Y)	0.00128	0.00128	0.00117
	(!A2 * !B1 * C1 * Y)	-0.00240	-0.00243	-0.00263
	(!A1 * !A2 * B1 * C1 * Y)	0.00137	0.00137	0.00119
	(!A1 * !A2 * B1 * C1 * Y)	-0.00216	-0.00219	-0.00258

Passive power(pJ) for D1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00030	-0.00030	-0.00029
	(A2 * !C1 * Y)	0.00114	0.00115	0.00113
	(A2 * !B1 * C1 * Y)	-0.00029	-0.00029	-0.00029
	(A2 * !B1 * C1 * Y)	0.00114	0.00114	0.00113
	(!A2 * !C1 * Y)	-0.00029	-0.00030	-0.00029
	(!A2 * !C1 * Y)	0.00113	0.00114	0.00113
	(!A2 * !B1 * C1 * Y)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * C1 * Y)	0.00113	0.00114	0.00113
	(!A1 * !A2 * B1 * C1 * Y)	-0.00029	-0.00029	-0.00029
	(!A1 * !A2 * B1 * C1 * Y)	0.00113	0.00114	0.00113
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00065	-0.00066	-0.00065
	(A2 * !C1 * Y)	0.00217	0.00220	0.00217
	(A2 * !B1 * C1 * Y)	-0.00063	-0.00064	-0.00063
	(A2 * !B1 * C1 * Y)	0.00217	0.00220	0.00217
	(!A2 * !C1 * Y)	-0.00065	-0.00065	-0.00065
	(!A2 * !C1 * Y)	0.00217	0.00218	0.00217
	(!A2 * !B1 * C1 * Y)	-0.00064	-0.00064	-0.00063
	(!A2 * !B1 * C1 * Y)	0.00218	0.00218	0.00217
	(!A1 * !A2 * B1 * C1 * Y)	-0.00063	-0.00063	-0.00063
	(!A1 * !A2 * B1 * C1 * Y)	0.00217	0.00218	0.00217
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00119	-0.00118	-0.00117
	(A2 * !C1 * Y)	0.00268	0.00269	0.00265
	(A2 * !B1 * C1 * Y)	-0.00114	-0.00116	-0.00114
	(A2 * !B1 * C1 * Y)	0.00264	0.00268	0.00265
	(!A2 * !C1 * Y)	-0.00117	-0.00118	-0.00117
	(!A2 * !C1 * Y)	0.00265	0.00267	0.00265
	(!A2 * !B1 * C1 * Y)	-0.00115	-0.00115	-0.00114
	(!A2 * !B1 * C1 * Y)	0.00265	0.00266	0.00265
	(!A1 * !A2 * B1 * C1 * Y)	-0.00114	-0.00115	-0.00114
	(!A1 * !A2 * B1 * C1 * Y)	0.00264	0.00268	0.00265

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	C1	D1	X
0	0	x	x	x	0
x	1	0	x	x	0
x	1	1	0	x	0
x	1	1	1	0	0
x	1	1	1	1	1
1	x	0	x	x	0
1	x	1	0	x	0
1	x	1	1	0	0
1	x	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111a_1	12.78720
sky130_fd_sc_hs__o2111a_2	15.98400
sky130_fd_sc_hs__o2111a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__o2111a_1	0.00231	0.00241	0.00222	0.00243	0.00248	0.18626
sky130_fd_sc_hs__o2111a_2	0.00234	0.00237	0.00234	0.00244	0.00257	0.37781
sky130_fd_sc_hs__o2111a_4	0.00445	0.00487	0.00411	0.00424	0.00434	0.73279

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	0.00010	0.00018
sky130_fd_sc_hs__o2111a_2	0.00000	0.00014	0.00024
sky130_fd_sc_hs__o2111a_4	0.00000	0.00027	0.00044

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (RR)	0.41328	1.78469	10.05890
	A2->X (RR)	0.38995	1.75852	9.99473
	B1->X (RR)	0.40153	1.79339	10.05190
	C1->X (RR)	0.39063	1.80481	10.03320
	D1->X (RR)	0.37253	1.77332	9.78609
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.44504	1.64780	10.25330
	A2->X (RR)	0.42140	1.62164	10.19630
	B1->X (RR)	0.43428	1.66160	10.28720
	C1->X (RR)	0.42241	1.67879	10.30100
	D1->X (RR)	0.40225	1.65367	10.10060
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.48934	1.54432	10.30100
	A2->X (RR)	0.47232	1.53403	10.28460
	B1->X (RR)	0.47732	1.56455	10.37700
	C1->X (RR)	0.46525	1.59904	10.44800
	D1->X (RR)	0.43434	1.56253	10.22060

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	1.27091	2.39329	8.74172
	A2->X (FF)	1.21205	2.22748	8.20189
	B1->X (FF)	0.52958	1.56445	7.46548
	C1->X (FF)	0.48659	1.51773	7.37712
	D1->X (FF)	0.42703	1.46317	7.26107
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	1.55812	2.71301	9.22250
	A2->X (FF)	1.49775	2.54622	8.71175
	B1->X (FF)	0.58145	1.62627	7.82069
	C1->X (FF)	0.54204	1.58796	7.74180
	D1->X (FF)	0.48783	1.53193	7.63780
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	1.65224	2.78088	9.32883
	A2->X (FF)	1.60245	2.61917	8.85968
	B1->X (FF)	0.69006	1.70092	7.91693
	C1->X (FF)	0.64472	1.65095	7.83254
	D1->X (FF)	0.57520	1.58658	7.71008

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.00642	0.00646	0.00644
	A1	0.00256	0.00259	0.00257
	A2	0.00586	0.00589	0.00584
	A2	0.00229	0.00230	0.00226
	B1	0.00584	0.00587	0.00585
	B1	0.00270	0.00272	0.00271
	C1	0.00549	0.00550	0.00548
	C1	0.00269	0.00271	0.00268
	D1	0.00513	0.00511	0.00506
	D1	0.00269	0.00268	0.00263
sky130_fd_sc_hs__o2111a_2	A1	0.00795	0.00809	0.00813
	A1	0.00408	0.00421	0.00427
	A2	0.00736	0.00748	0.00751
	A2	0.00382	0.00394	0.00397
	B1	0.00738	0.00748	0.00752
	B1	0.00413	0.00424	0.00428
	C1	0.00699	0.00708	0.00711
	C1	0.00412	0.00421	0.00426
	D1	0.00664	0.00669	0.00668
	D1	0.00411	0.00417	0.00416

sky130_fd_sc_hs__o2111a_4	**A1**	0.01629	0.01651	0.01659
	A1	0.00843	0.00864	0.00873
	A2	0.01539	0.01561	0.01570
	A2	0.00791	0.00813	0.00823
	B1	0.01512	0.01531	0.01542
	B1	0.00869	0.00888	0.00901
	C1	0.01435	0.01451	0.01462
	C1	0.00869	0.00885	0.00897
	D1	0.01347	0.01358	0.01363
	D1	0.00866	0.00878	0.00884

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00257	0.00259	0.00256
	A1	0.00626	0.00629	0.00620
	A2	0.00260	0.00259	0.00255
	A2	0.00597	0.00598	0.00588
	B1	0.00220	0.00214	0.00246
	B1	0.00527	0.00521	0.00514
	C1	0.00198	0.00188	0.00191
	C1	0.00476	0.00467	0.00461
	D1	0.00172	0.00156	0.00165
	D1	0.00418	0.00406	0.00402

sky130_fd_sc_hs__o2111a_2	**A1**	0.00381	0.00395	0.00396
	A1	0.00750	0.00764	0.00761
	A2	0.00386	0.00397	0.00354
	A2	0.00719	0.00731	0.00727
	B1	0.00347	0.00352	0.00356
	B1	0.00664	0.00669	0.00664
	C1	0.00323	0.00327	0.00396
	C1	0.00610	0.00612	0.00608
	D1	0.00293	0.00292	0.00350
	D1	0.00549	0.00547	0.00544
sky130_fd_sc_hs__o2111a_4	**A1**	0.00736	0.00760	0.00743
	A1	0.01486	0.01509	0.01507
	A2	0.00738	0.00752	0.00755
	A2	0.01443	0.01458	0.01451
	B1	0.00673	0.00686	0.00892
	B1	0.01301	0.01312	0.01306
	C1	0.00627	0.00632	0.00679
	C1	0.01190	0.01194	0.01189
	D1	0.00548	0.00550	0.00714
	D1	0.01035	0.01038	0.01036

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * B1 * C1 * D1 * X)**	0.00081	0.00082	0.00081
	(A2 * B1 * C1 * D1 * X)	-0.00082	-0.00083	-0.00082
	(A2 * B1 * C1 * !D1 * !X)	0.00081	0.00081	0.00081
	(A2 * B1 * C1 * !D1 * !X)	-0.00082	-0.00083	-0.00083
	(A2 * B1 * !C1 * !X)	0.00081	0.00081	0.00081
	(A2 * B1 * !C1 * !X)	-0.00082	-0.00083	-0.00083
	(A2 * !B1 * !X)	0.00081	0.00081	0.00081
	(A2 * !B1 * !X)	-0.00082	-0.00083	-0.00083
	(!A2 * B1 * C1 * !D1 * !X)	0.00072	0.00072	0.00072
	(!A2 * B1 * C1 * !D1 * !X)	-0.00084	-0.00084	-0.00084
	(!A2 * B1 * !C1 * D1 * !X)	0.00073	0.00073	0.00073
	(!A2 * B1 * !C1 * D1 * !X)	-0.00085	-0.00085	-0.00084
	(!A2 * B1 * !C1 * !D1 * !X)	0.00073	0.00073	0.00073
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00084	-0.00085	-0.00084
	(!A2 * !B1 * C1 * D1 * !X)	0.00076	0.00076	0.00075
	(!A2 * !B1 * C1 * D1 * !X)	-0.00084	-0.00085	-0.00084
	(!A2 * !B1 * !D1 * !X)	0.00076	0.00076	0.00075
	(!A2 * !B1 * !D1 * !X)	-0.00084	-0.00085	-0.00084
	(!A2 * !B1 * !C1 * D1 * !X)	0.00076	0.00076	0.00075
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00084	-0.00085	-0.00084

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00084	0.00085	0.00084
	(A2 * B1 * C1 * D1 * X)	-0.00081	-0.00082	-0.00082
	(A2 * B1 * C1 * !D1 * !X)	0.00084	0.00085	0.00084
	(A2 * B1 * C1 * !D1 * !X)	-0.00081	-0.00082	-0.00082
	(A2 * B1 * !C1 * !X)	0.00084	0.00085	0.00084
	(A2 * B1 * !C1 * !X)	-0.00081	-0.00082	-0.00082
	(A2 * !B1 * !X)	0.00085	0.00085	0.00084
	(A2 * !B1 * !X)	-0.00081	-0.00082	-0.00082
	(!A2 * B1 * C1 * !D1 * !X)	0.00076	0.00075	0.00075
	(!A2 * B1 * C1 * !D1 * !X)	-0.00084	-0.00083	-0.00083
	(!A2 * B1 * !C1 * D1 * !X)	0.00076	0.00077	0.00076
	(!A2 * B1 * !C1 * D1 * !X)	-0.00083	-0.00084	-0.00083
	(!A2 * B1 * !C1 * !D1 * !X)	0.00076	0.00077	0.00076
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00083	-0.00084	-0.00083
	(!A2 * !B1 * C1 * D1 * !X)	0.00079	0.00079	0.00079
	(!A2 * !B1 * C1 * D1 * !X)	-0.00083	-0.00084	-0.00083
	(!A2 * !B1 * !D1 * !X)	0.00079	0.00079	0.00079
	(!A2 * !B1 * !D1 * !X)	-0.00083	-0.00084	-0.00083
	(!A2 * !B1 * !C1 * D1 * !X)	0.00079	0.00079	0.00079
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00083	-0.00084	-0.00083

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00164	0.00164	0.00162
	(A2 * B1 * C1 * D1 * X)	-0.00157	-0.00160	-0.00159
	(A2 * B1 * C1 * !D1 * !X)	0.00150	0.00150	0.00149
	(A2 * B1 * C1 * !D1 * !X)	-0.00172	-0.00174	-0.00173
	(A2 * B1 * !C1 * !X)	0.00150	0.00150	0.00149
	(A2 * B1 * !C1 * !X)	-0.00172	-0.00174	-0.00173
	(A2 * !B1 * !X)	0.00150	0.00150	0.00149
	(A2 * !B1 * !X)	-0.00172	-0.00174	-0.00173
	(!A2 * B1 * C1 * !D1 * !X)	0.00134	0.00134	0.00134
	(!A2 * B1 * C1 * !D1 * !X)	-0.00177	-0.00177	-0.00177
	(!A2 * B1 * !C1 * D1 * !X)	0.00135	0.00135	0.00135
	(!A2 * B1 * !C1 * D1 * !X)	-0.00178	-0.00177	-0.00177
	(!A2 * B1 * !C1 * !D1 * !X)	0.00135	0.00135	0.00135
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00178	-0.00177	-0.00177
	(!A2 * !B1 * C1 * D1 * !X)	0.00139	0.00137	0.00138
	(!A2 * !B1 * C1 * D1 * !X)	-0.00178	-0.00177	-0.00177
	(!A2 * !B1 * !D1 * !X)	0.00137	0.00138	0.00138
	(!A2 * !B1 * !D1 * !X)	-0.00176	-0.00177	-0.00177
	(!A2 * !B1 * !C1 * D1 * !X)	0.00137	0.00138	0.00138
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00176	-0.00177	-0.00177

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * B1 * C1 * D1 * X)**	-0.00081	-0.00081	-0.00081
	(A2 * B1 * C1 * D1 * X)	0.00083	0.00083	0.00082
	(A2 * B1 * C1 * !D1 * !X)	-0.00081	-0.00081	-0.00081
	(A2 * B1 * C1 * !D1 * !X)	0.00083	0.00083	0.00083
	(A2 * B1 * !C1 * !X)	-0.00081	-0.00081	-0.00081
	(A2 * B1 * !C1 * !X)	0.00084	0.00083	0.00083
	(A2 * !B1 * !X)	-0.00081	-0.00081	-0.00081
	(A2 * !B1 * !X)	0.00084	0.00083	0.00083
	(!A2 * B1 * C1 * !D1 * !X)	-0.00069	-0.00072	-0.00072
	(!A2 * B1 * C1 * !D1 * !X)	0.00084	0.00085	0.00085
	(!A2 * B1 * !C1 * D1 * !X)	-0.00071	-0.00073	-0.00073
	(!A2 * B1 * !C1 * D1 * !X)	0.00085	0.00085	0.00085
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00071	-0.00073	-0.00073
	(!A2 * B1 * !C1 * !D1 * !X)	0.00085	0.00085	0.00085
	(!A2 * !B1 * C1 * D1 * !X)	-0.00074	-0.00076	-0.00075
	(!A2 * !B1 * C1 * D1 * !X)	0.00085	0.00085	0.00085
	(!A2 * !B1 * !D1 * !X)	-0.00074	-0.00076	-0.00075
	(!A2 * !B1 * !D1 * !X)	0.00085	0.00085	0.00085
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00074	-0.00076	-0.00075
	(!A2 * !B1 * !C1 * D1 * !X)	0.00085	0.00085	0.00085

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00084	-0.00084	-0.00084
	(A2 * B1 * C1 * D1 * X)	0.00082	0.00082	0.00082
	(A2 * B1 * C1 * !D1 * !X)	-0.00084	-0.00084	-0.00084
	(A2 * B1 * C1 * !D1 * !X)	0.00082	0.00082	0.00082
	(A2 * B1 * !C1 * !X)	-0.00084	-0.00084	-0.00084
	(A2 * B1 * !C1 * !X)	0.00083	0.00082	0.00082
	(A2 * !B1 * !X)	-0.00085	-0.00084	-0.00084
	(A2 * !B1 * !X)	0.00083	0.00082	0.00082
	(!A2 * B1 * C1 * !D1 * !X)	-0.00074	-0.00075	-0.00075
	(!A2 * B1 * C1 * !D1 * !X)	0.00084	0.00084	0.00084
	(!A2 * B1 * !C1 * D1 * !X)	-0.00075	-0.00077	-0.00076
	(!A2 * B1 * !C1 * D1 * !X)	0.00084	0.00084	0.00084
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00075	-0.00077	-0.00076
	(!A2 * B1 * !C1 * !D1 * !X)	0.00084	0.00084	0.00084
	(!A2 * !B1 * C1 * D1 * !X)	-0.00077	-0.00079	-0.00079
	(!A2 * !B1 * C1 * D1 * !X)	0.00084	0.00084	0.00084
	(!A2 * !B1 * !D1 * !X)	-0.00077	-0.00079	-0.00079
	(!A2 * !B1 * !D1 * !X)	0.00084	0.00084	0.00084
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00077	-0.00079	-0.00079
	(!A2 * !B1 * !C1 * D1 * !X)	0.00084	0.00084	0.00084

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00163	-0.00163	-0.00162
	(A2 * B1 * C1 * D1 * X)	0.00160	0.00160	0.00159
	(A2 * B1 * C1 * !D1 * !X)	-0.00149	-0.00149	-0.00149
	(A2 * B1 * C1 * !D1 * !X)	0.00175	0.00174	0.00173
	(A2 * B1 * !C1 * !X)	-0.00149	-0.00149	-0.00149
	(A2 * B1 * !C1 * !X)	0.00174	0.00174	0.00173
	(A2 * !B1 * !X)	-0.00149	-0.00149	-0.00149
	(A2 * !B1 * !X)	0.00174	0.00174	0.00173
	(!A2 * B1 * C1 * !D1 * !X)	-0.00129	-0.00134	-0.00134
	(!A2 * B1 * C1 * !D1 * !X)	0.00177	0.00179	0.00178
	(!A2 * B1 * !C1 * D1 * !X)	-0.00131	-0.00135	-0.00135
	(!A2 * B1 * !C1 * D1 * !X)	0.00179	0.00179	0.00178
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00131	-0.00135	-0.00135
	(!A2 * B1 * !C1 * !D1 * !X)	0.00179	0.00179	0.00178
	(!A2 * !B1 * C1 * D1 * !X)	-0.00135	-0.00137	-0.00138
	(!A2 * !B1 * C1 * D1 * !X)	0.00178	0.00179	0.00178
	(!A2 * !B1 * !D1 * !X)	-0.00135	-0.00138	-0.00138
	(!A2 * !B1 * !D1 * !X)	0.00178	0.00179	0.00178
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00135	-0.00138	-0.00138
	(!A2 * !B1 * !C1 * D1 * !X)	0.00178	0.00179	0.00178

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A1 * B1 * C1 * D1 * X)**	0.00085	0.00085	0.00085
	(A1 * B1 * C1 * D1 * X)	-0.00055	-0.00055	-0.00054
	(A1 * B1 * C1 * !D1 * !X)	0.00077	0.00078	0.00077
	(A1 * B1 * C1 * !D1 * !X)	-0.00080	-0.00081	-0.00081
	(A1 * B1 * !C1 * D1 * !X)	0.00076	0.00078	0.00077
	(A1 * B1 * !C1 * D1 * !X)	-0.00079	-0.00081	-0.00081
	(A1 * B1 * !C1 * !D1 * !X)	0.00077	0.00078	0.00077
	(A1 * B1 * !C1 * !D1 * !X)	-0.00080	-0.00081	-0.00081
	(A1 * !B1 * C1 * D1 * !X)	0.00077	0.00078	0.00077
	(A1 * !B1 * C1 * D1 * !X)	-0.00080	-0.00081	-0.00081
	(A1 * !B1 * !D1 * !X)	0.00077	0.00078	0.00077
	(A1 * !B1 * !D1 * !X)	-0.00080	-0.00081	-0.00081
	(A1 * !B1 * !C1 * D1 * !X)	0.00077	0.00078	0.00077
	(A1 * !B1 * !C1 * D1 * !X)	-0.00080	-0.00081	-0.00081
	(!A1 * B1 * C1 * !D1 * !X)	0.00068	0.00068	0.00068
	(!A1 * B1 * C1 * !D1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * B1 * !C1 * D1 * !X)	0.00069	0.00069	0.00069
	(!A1 * B1 * !C1 * D1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * B1 * !C1 * !D1 * !X)	0.00069	0.00069	0.00069
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1 * C1 * D1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !B1 * C1 * D1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1 * !D1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !B1 * !D1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !B1 * !C1 * D1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00085	0.00085	0.00085
	(A1 * B1 * C1 * D1 * X)	-0.00053	-0.00053	-0.00053
	(A1 * B1 * C1 * !D1 * !X)	0.00077	0.00078	0.00077
	(A1 * B1 * C1 * !D1 * !X)	-0.00078	-0.00079	-0.00079
	(A1 * B1 * !C1 * D1 * !X)	0.00077	0.00078	0.00077
	(A1 * B1 * !C1 * D1 * !X)	-0.00078	-0.00079	-0.00079
	(A1 * B1 * !C1 * !D1 * !X)	0.00077	0.00078	0.00077
	(A1 * B1 * !C1 * !D1 * !X)	-0.00078	-0.00079	-0.00079
	(A1 * !B1 * C1 * D1 * !X)	0.00077	0.00078	0.00077
	(A1 * !B1 * C1 * D1 * !X)	-0.00078	-0.00079	-0.00079
	(A1 * !B1 * !D1 * !X)	0.00077	0.00078	0.00077
	(A1 * !B1 * !D1 * !X)	-0.00078	-0.00079	-0.00079
	(A1 * !B1 * !C1 * D1 * !X)	0.00077	0.00078	0.00077
	(A1 * !B1 * !C1 * D1 * !X)	-0.00078	-0.00079	-0.00079
	(!A1 * B1 * C1 * !D1 * !X)	0.00069	0.00069	0.00069
	(!A1 * B1 * C1 * !D1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * !C1 * D1 * !X)	0.00070	0.00070	0.00070
	(!A1 * B1 * !C1 * D1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * !C1 * !D1 * !X)	0.00070	0.00070	0.00070
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * !B1 * C1 * D1 * !X)	0.00072	0.00073	0.00072
	(!A1 * !B1 * C1 * D1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * !B1 * !D1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !B1 * !D1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * !B1 * !C1 * D1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00081	-0.00081	-0.00081

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00188	0.00188	0.00187
	(A1 * B1 * C1 * D1 * X)	-0.00110	-0.00109	-0.00108
	(A1 * B1 * C1 * !D1 * !X)	0.00157	0.00159	0.00157
	(A1 * B1 * C1 * !D1 * !X)	-0.00172	-0.00175	-0.00174
	(A1 * B1 * !C1 * D1 * !X)	0.00157	0.00159	0.00157
	(A1 * B1 * !C1 * D1 * !X)	-0.00172	-0.00175	-0.00174
	(A1 * B1 * !C1 * !D1 * !X)	0.00157	0.00159	0.00157
	(A1 * B1 * !C1 * !D1 * !X)	-0.00173	-0.00175	-0.00174
	(A1 * !B1 * C1 * D1 * !X)	0.00157	0.00159	0.00157
	(A1 * !B1 * C1 * D1 * !X)	-0.00172	-0.00175	-0.00174
	(A1 * !B1 * !D1 * !X)	0.00157	0.00159	0.00157
	(A1 * !B1 * !D1 * !X)	-0.00173	-0.00175	-0.00174
	(A1 * !B1 * !C1 * D1 * !X)	0.00157	0.00159	0.00157
	(A1 * !B1 * !C1 * D1 * !X)	-0.00173	-0.00175	-0.00174
	(!A1 * B1 * C1 * !D1 * !X)	0.00138	0.00139	0.00138
	(!A1 * B1 * C1 * !D1 * !X)	-0.00179	-0.00179	-0.00179
	(!A1 * B1 * !C1 * D1 * !X)	0.00140	0.00140	0.00140
	(!A1 * B1 * !C1 * D1 * !X)	-0.00179	-0.00179	-0.00179
	(!A1 * B1 * !C1 * !D1 * !X)	0.00140	0.00141	0.00140
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00179	-0.00179	-0.00179
	(!A1 * !B1 * C1 * D1 * !X)	0.00145	0.00144	0.00144
	(!A1 * !B1 * C1 * D1 * !X)	-0.00179	-0.00179	-0.00179
	(!A1 * !B1 * !D1 * !X)	0.00145	0.00146	0.00144
	(!A1 * !B1 * !D1 * !X)	-0.00179	-0.00180	-0.00179
	(!A1 * !B1 * !C1 * D1 * !X)	0.00145	0.00146	0.00144
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00179	-0.00180	-0.00179

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A1 * B1 * C1 * D1 * X)**	-0.00083	-0.00084	-0.00085
	(A1 * B1 * C1 * D1 * X)	0.00056	0.00056	0.00055
	(A1 * B1 * C1 * !D1 * !X)	-0.00077	-0.00077	-0.00076
	(A1 * B1 * C1 * !D1 * !X)	0.00081	0.00081	0.00081
	(A1 * B1 * !C1 * D1 * !X)	-0.00076	-0.00077	-0.00076
	(A1 * B1 * !C1 * D1 * !X)	0.00081	0.00081	0.00081
	(A1 * B1 * !C1 * !D1 * !X)	-0.00077	-0.00077	-0.00076
	(A1 * B1 * !C1 * !D1 * !X)	0.00081	0.00081	0.00081
	(A1 * !B1 * C1 * D1 * !X)	-0.00077	-0.00077	-0.00076
	(A1 * !B1 * C1 * D1 * !X)	0.00081	0.00081	0.00081
	(A1 * !B1 * !D1 * !X)	-0.00077	-0.00077	-0.00076
	(A1 * !B1 * !D1 * !X)	0.00081	0.00081	0.00081
	(A1 * !B1 * !C1 * D1 * !X)	-0.00077	-0.00077	-0.00076
	(A1 * !B1 * !C1 * D1 * !X)	0.00081	0.00081	0.00081
	(!A1 * B1 * C1 * !D1 * !X)	-0.00065	-0.00068	-0.00068
	(!A1 * B1 * C1 * !D1 * !X)	0.00083	0.00083	0.00083
	(!A1 * B1 * !C1 * D1 * !X)	-0.00067	-0.00069	-0.00069
	(!A1 * B1 * !C1 * D1 * !X)	0.00083	0.00083	0.00083
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00067	-0.00069	-0.00069
	(!A1 * B1 * !C1 * !D1 * !X)	0.00083	0.00083	0.00083
	(!A1 * !B1 * C1 * D1 * !X)	-0.00070	-0.00072	-0.00071
	(!A1 * !B1 * C1 * D1 * !X)	0.00083	0.00083	0.00083
	(!A1 * !B1 * !D1 * !X)	-0.00070	-0.00072	-0.00071
	(!A1 * !B1 * !D1 * !X)	0.00083	0.00083	0.00083
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00070	-0.00072	-0.00071
	(!A1 * !B1 * !C1 * D1 * !X)	0.00083	0.00083	0.00083

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00083	-0.00084	-0.00085
	(A1 * B1 * C1 * D1 * X)	0.00054	0.00055	0.00053
	(A1 * B1 * C1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * B1 * C1 * !D1 * !X)	0.00079	0.00079	0.00079
	(A1 * B1 * !C1 * D1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * B1 * !C1 * D1 * !X)	0.00079	0.00079	0.00079
	(A1 * B1 * !C1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * B1 * !C1 * !D1 * !X)	0.00079	0.00079	0.00079
	(A1 * !B1 * C1 * D1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * C1 * D1 * !X)	0.00079	0.00079	0.00079
	(A1 * !B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !D1 * !X)	0.00079	0.00079	0.00079
	(A1 * !B1 * !C1 * D1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !C1 * D1 * !X)	0.00079	0.00079	0.00079
	(!A1 * B1 * C1 * !D1 * !X)	-0.00067	-0.00069	-0.00069
	(!A1 * B1 * C1 * !D1 * !X)	0.00081	0.00081	0.00081
	(!A1 * B1 * !C1 * D1 * !X)	-0.00068	-0.00070	-0.00070
	(!A1 * B1 * !C1 * D1 * !X)	0.00081	0.00081	0.00081
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00068	-0.00070	-0.00070
	(!A1 * B1 * !C1 * !D1 * !X)	0.00081	0.00081	0.00081
	(!A1 * !B1 * C1 * D1 * !X)	-0.00071	-0.00073	-0.00072
	(!A1 * !B1 * C1 * D1 * !X)	0.00081	0.00081	0.00081
	(!A1 * !B1 * !D1 * !X)	-0.00071	-0.00072	-0.00072
	(!A1 * !B1 * !D1 * !X)	0.00081	0.00081	0.00081
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00070	-0.00072	-0.00072
	(!A1 * !B1 * !C1 * D1 * !X)	0.00081	0.00081	0.00081

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00183	-0.00184	-0.00187
	(A1 * B1 * C1 * D1 * X)	0.00112	0.00112	0.00109
	(A1 * B1 * C1 * !D1 * !X)	-0.00157	-0.00158	-0.00157
	(A1 * B1 * C1 * !D1 * !X)	0.00175	0.00175	0.00174
	(A1 * B1 * !C1 * D1 * !X)	-0.00156	-0.00158	-0.00157
	(A1 * B1 * !C1 * D1 * !X)	0.00173	0.00175	0.00174
	(A1 * B1 * !C1 * !D1 * !X)	-0.00156	-0.00158	-0.00157
	(A1 * B1 * !C1 * !D1 * !X)	0.00173	0.00175	0.00174
	(A1 * !B1 * C1 * D1 * !X)	-0.00157	-0.00158	-0.00157
	(A1 * !B1 * C1 * D1 * !X)	0.00175	0.00175	0.00174
	(A1 * !B1 * !D1 * !X)	-0.00157	-0.00158	-0.00157
	(A1 * !B1 * !D1 * !X)	0.00175	0.00175	0.00174
	(A1 * !B1 * !C1 * D1 * !X)	-0.00157	-0.00158	-0.00157
	(A1 * !B1 * !C1 * D1 * !X)	0.00175	0.00175	0.00174
	(!A1 * B1 * C1 * !D1 * !X)	-0.00133	-0.00139	-0.00138
	(!A1 * B1 * C1 * !D1 * !X)	0.00179	0.00180	0.00179
	(!A1 * B1 * !C1 * D1 * !X)	-0.00135	-0.00140	-0.00140
	(!A1 * B1 * !C1 * D1 * !X)	0.00179	0.00180	0.00179
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00135	-0.00141	-0.00140
	(!A1 * B1 * !C1 * !D1 * !X)	0.00179	0.00180	0.00179
	(!A1 * !B1 * C1 * D1 * !X)	-0.00141	-0.00144	-0.00144
	(!A1 * !B1 * C1 * D1 * !X)	0.00179	0.00180	0.00179
	(!A1 * !B1 * !D1 * !X)	-0.00141	-0.00146	-0.00144
	(!A1 * !B1 * !D1 * !X)	0.00179	0.00180	0.00179
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00141	-0.00146	-0.00144
	(!A1 * !B1 * !C1 * D1 * !X)	0.00179	0.00180	0.00179

Passive power(pJ) for B1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * C1 * !D1 * !X)**	0.00066	0.00066	0.00066
	(A2 * C1 * !D1 * !X)	-0.00072	-0.00072	-0.00072
	(A2 * !C1 * D1 * !X)	0.00069	0.00069	0.00069
	(A2 * !C1 * D1 * !X)	-0.00072	-0.00072	-0.00072
	(A2 * !C1 * !D1 * !X)	0.00069	0.00069	0.00069
	(A2 * !C1 * !D1 * !X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * C1 * !D1 * !X)	0.00066	0.00067	0.00066
	(A1 * !A2 * C1 * !D1 * !X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * !C1 * D1 * !X)	0.00069	0.00069	0.00069
	(A1 * !A2 * !C1 * D1 * !X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * !C1 * !D1 * !X)	0.00069	0.00069	0.00069
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * C1 * D1 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A2 * C1 * D1 * !X)	-0.00069	-0.00070	-0.00069
	(!A1 * !A2 * C1 * !D1 * !X)	0.00042	0.00042	0.00042
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * !C1 * D1 * !X)	0.00044	0.00044	0.00044
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00045	0.00045	0.00045
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00072	-0.00072	-0.00072

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00069	0.00069	0.00069
	(A2 * C1 * !D1 * !X)	-0.00083	-0.00083	-0.00083
	(A2 * !C1 * D1 * !X)	0.00070	0.00071	0.00071
	(A2 * !C1 * D1 * !X)	-0.00083	-0.00083	-0.00083
	(A2 * !C1 * !D1 * !X)	0.00070	0.00071	0.00071
	(A2 * !C1 * !D1 * !X)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * C1 * !D1 * !X)	0.00069	0.00069	0.00069
	(A1 * !A2 * C1 * !D1 * !X)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * !C1 * D1 * !X)	0.00071	0.00071	0.00071
	(A1 * !A2 * !C1 * D1 * !X)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * !C1 * !D1 * !X)	0.00071	0.00071	0.00071
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !A2 * C1 * D1 * !X)	0.00043	0.00042	0.00042
	(!A1 * !A2 * C1 * D1 * !X)	-0.00081	-0.00081	-0.00080
	(!A1 * !A2 * C1 * !D1 * !X)	0.00045	0.00045	0.00045
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !A2 * !C1 * D1 * !X)	0.00046	0.00046	0.00046
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00083	-0.00083	-0.00083
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00135	0.00136	0.00135
	(A2 * C1 * !D1 * !X)	-0.00142	-0.00142	-0.00141
	(A2 * !C1 * D1 * !X)	0.00138	0.00139	0.00138
	(A2 * !C1 * D1 * !X)	-0.00141	-0.00142	-0.00141
	(A2 * !C1 * !D1 * !X)	0.00138	0.00139	0.00138
	(A2 * !C1 * !D1 * !X)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * C1 * !D1 * !X)	0.00135	0.00135	0.00135
	(A1 * !A2 * C1 * !D1 * !X)	-0.00142	-0.00142	-0.00141
	(A1 * !A2 * !C1 * D1 * !X)	0.00138	0.00139	0.00138
	(A1 * !A2 * !C1 * D1 * !X)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * !C1 * !D1 * !X)	0.00138	0.00139	0.00138
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * !A2 * C1 * D1 * !X)	0.00078	0.00079	0.00079
	(!A1 * !A2 * C1 * D1 * !X)	-0.00137	-0.00138	-0.00136
	(!A1 * !A2 * C1 * !D1 * !X)	0.00085	0.00085	0.00085
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00142	-0.00143	-0.00142
	(!A1 * !A2 * !C1 * D1 * !X)	0.00086	0.00086	0.00085
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00142	-0.00142	-0.00142
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00088	0.00088	0.00088
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00142	-0.00142	-0.00142

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * C1 * !D1 * !X)**	-0.00064	-0.00066	-0.00066
	(A2 * C1 * !D1 * !X)	0.00072	0.00073	0.00072
	(A2 * !C1 * D1 * !X)	-0.00067	-0.00069	-0.00069
	(A2 * !C1 * D1 * !X)	0.00072	0.00073	0.00072
	(A2 * !C1 * !D1 * !X)	-0.00067	-0.00069	-0.00069
	(A2 * !C1 * !D1 * !X)	0.00072	0.00073	0.00072
	(A1 * !A2 * C1 * !D1 * !X)	-0.00064	-0.00067	-0.00066
	(A1 * !A2 * C1 * !D1 * !X)	0.00072	0.00073	0.00072
	(A1 * !A2 * !C1 * D1 * !X)	-0.00067	-0.00069	-0.00069
	(A1 * !A2 * !C1 * D1 * !X)	0.00072	0.00073	0.00072
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00067	-0.00069	-0.00069
	(A1 * !A2 * !C1 * !D1 * !X)	0.00072	0.00073	0.00072
	(!A1 * !A2 * C1 * D1 * !X)	-0.00038	-0.00037	-0.00037
	(!A1 * !A2 * C1 * D1 * !X)	0.00073	0.00073	0.00072
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * C1 * !D1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !C1 * D1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00072	0.00072	0.00072

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00067	-0.00069	-0.00069
	(A2 * C1 * !D1 * !X)	0.00084	0.00084	0.00083
	(A2 * !C1 * D1 * !X)	-0.00070	-0.00071	-0.00071
	(A2 * !C1 * D1 * !X)	0.00083	0.00084	0.00083
	(A2 * !C1 * !D1 * !X)	-0.00070	-0.00071	-0.00071
	(A2 * !C1 * !D1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * C1 * !D1 * !X)	-0.00066	-0.00069	-0.00069
	(A1 * !A2 * C1 * !D1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !C1 * D1 * !X)	-0.00069	-0.00071	-0.00071
	(A1 * !A2 * !C1 * D1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00069	-0.00071	-0.00071
	(A1 * !A2 * !C1 * !D1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * C1 * D1 * !X)	-0.00040	-0.00040	-0.00039
	(!A1 * !A2 * C1 * D1 * !X)	0.00084	0.00084	0.00083
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * C1 * !D1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !C1 * D1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00083	0.00084	0.00083

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00131	-0.00136	-0.00135
	(A2 * C1 * !D1 * !X)	0.00143	0.00143	0.00142
	(A2 * !C1 * D1 * !X)	-0.00136	-0.00139	-0.00138
	(A2 * !C1 * D1 * !X)	0.00141	0.00143	0.00142
	(A2 * !C1 * !D1 * !X)	-0.00136	-0.00139	-0.00138
	(A2 * !C1 * !D1 * !X)	0.00141	0.00143	0.00142
	(A1 * !A2 * C1 * !D1 * !X)	-0.00130	-0.00135	-0.00135
	(A1 * !A2 * C1 * !D1 * !X)	0.00142	0.00143	0.00142
	(A1 * !A2 * !C1 * D1 * !X)	-0.00136	-0.00139	-0.00138
	(A1 * !A2 * !C1 * D1 * !X)	0.00142	0.00143	0.00142
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00136	-0.00139	-0.00138
	(A1 * !A2 * !C1 * !D1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !A2 * C1 * D1 * !X)	-0.00075	-0.00074	-0.00073
	(!A1 * !A2 * C1 * D1 * !X)	0.00145	0.00143	0.00142
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !A2 * C1 * !D1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00086	-0.00086	-0.00085
	(!A1 * !A2 * !C1 * D1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00142	0.00143	0.00142

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * B1 * !D1 * !X)**	0.00068	0.00069	0.00069
	(A2 * B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * D1 * !X)	0.00037	0.00037	0.00037
	(A2 * !B1 * D1 * !X)	-0.00076	-0.00077	-0.00077
	(A2 * !B1 * !D1 * !X)	0.00039	0.00039	0.00039
	(A2 * !B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * B1 * !D1 * !X)	0.00069	0.00069	0.00068
	(A1 * !A2 * B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(!A2 * !B1 * D1 * !X)	0.00037	0.00037	0.00037
	(!A2 * !B1 * D1 * !X)	-0.00077	-0.00077	-0.00077
	(!A2 * !B1 * !D1 * !X)	0.00039	0.00039	0.00039
	(!A2 * !B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A2 * B1 * D1 * !X)	0.00038	0.00038	0.00037
	(!A1 * !A2 * B1 * D1 * !X)	-0.00077	-0.00077	-0.00076
	(!A1 * !A2 * B1 * !D1 * !X)	0.00043	0.00043	0.00043
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00077	-0.00077	-0.00077

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00069	0.00070	0.00070
	(A2 * B1 * !D1 * !X)	-0.00086	-0.00087	-0.00086
	(A2 * !B1 * D1 * !X)	0.00040	0.00039	0.00039
	(A2 * !B1 * D1 * !X)	-0.00087	-0.00087	-0.00086
	(A2 * !B1 * !D1 * !X)	0.00042	0.00042	0.00042
	(A2 * !B1 * !D1 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * B1 * !D1 * !X)	0.00070	0.00070	0.00069
	(A1 * !A2 * B1 * !D1 * !X)	-0.00087	-0.00086	-0.00086
	(!A2 * !B1 * D1 * !X)	0.00039	0.00039	0.00039
	(!A2 * !B1 * D1 * !X)	-0.00086	-0.00086	-0.00086
	(!A2 * !B1 * !D1 * !X)	0.00042	0.00042	0.00042
	(!A2 * !B1 * !D1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * B1 * D1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * B1 * D1 * !X)	-0.00086	-0.00086	-0.00085
	(!A1 * !A2 * B1 * !D1 * !X)	0.00045	0.00045	0.00045
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00086	-0.00087	-0.00086

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00143	0.00144	0.00143
	(A2 * B1 * !D1 * !X)	-0.00145	-0.00146	-0.00146
	(A2 * !B1 * D1 * !X)	0.00081	0.00081	0.00081
	(A2 * !B1 * D1 * !X)	-0.00146	-0.00146	-0.00146
	(A2 * !B1 * !D1 * !X)	0.00086	0.00086	0.00086
	(A2 * !B1 * !D1 * !X)	-0.00146	-0.00147	-0.00146
	(A1 * !A2 * B1 * !D1 * !X)	0.00143	0.00144	0.00143
	(A1 * !A2 * B1 * !D1 * !X)	-0.00146	-0.00146	-0.00146
	(!A2 * !B1 * D1 * !X)	0.00081	0.00081	0.00081
	(!A2 * !B1 * D1 * !X)	-0.00146	-0.00146	-0.00146
	(!A2 * !B1 * !D1 * !X)	0.00086	0.00086	0.00086
	(!A2 * !B1 * !D1 * !X)	-0.00146	-0.00147	-0.00146
	(!A1 * !A2 * B1 * D1 * !X)	0.00077	0.00078	0.00079
	(!A1 * !A2 * B1 * D1 * !X)	-0.00145	-0.00145	-0.00144
	(!A1 * !A2 * B1 * !D1 * !X)	0.00090	0.00090	0.00090
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00146	-0.00147	-0.00146

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * B1 * !D1 * !X)**	-0.00067	-0.00069	-0.00069
	(A2 * B1 * !D1 * !X)	0.00077	0.00077	0.00077
	(A2 * !B1 * D1 * !X)	-0.00036	-0.00036	-0.00036
	(A2 * !B1 * D1 * !X)	0.00080	0.00079	0.00077
	(A2 * !B1 * !D1 * !X)	-0.00039	-0.00039	-0.00039
	(A2 * !B1 * !D1 * !X)	0.00077	0.00077	0.00077
	(A1 * !A2 * B1 * !D1 * !X)	-0.00067	-0.00069	-0.00068
	(A1 * !A2 * B1 * !D1 * !X)	0.00077	0.00077	0.00077
	(!A2 * !B1 * D1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * D1 * !X)	0.00080	0.00079	0.00077
	(!A2 * !B1 * !D1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * !D1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A2 * B1 * D1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B1 * D1 * !X)	0.00080	0.00079	0.00077
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * B1 * !D1 * !X)	0.00077	0.00077	0.00077

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00068	-0.00070	-0.00070
	(A2 * B1 * !D1 * !X)	0.00086	0.00087	0.00087
	(A2 * !B1 * D1 * !X)	-0.00038	-0.00037	-0.00038
	(A2 * !B1 * D1 * !X)	0.00089	0.00089	0.00087
	(A2 * !B1 * !D1 * !X)	-0.00042	-0.00042	-0.00042
	(A2 * !B1 * !D1 * !X)	0.00086	0.00087	0.00087
	(A1 * !A2 * B1 * !D1 * !X)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * B1 * !D1 * !X)	0.00087	0.00086	0.00087
	(!A2 * !B1 * D1 * !X)	-0.00038	-0.00037	-0.00038
	(!A2 * !B1 * D1 * !X)	0.00089	0.00089	0.00087
	(!A2 * !B1 * !D1 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * !B1 * !D1 * !X)	0.00086	0.00087	0.00087
	(!A1 * !A2 * B1 * D1 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B1 * D1 * !X)	0.00089	0.00089	0.00087
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * B1 * !D1 * !X)	0.00087	0.00087	0.00087

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00141	-0.00144	-0.00143
	(A2 * B1 * !D1 * !X)	0.00147	0.00146	0.00146
	(A2 * !B1 * D1 * !X)	-0.00078	-0.00077	-0.00078
	(A2 * !B1 * D1 * !X)	0.00153	0.00151	0.00147
	(A2 * !B1 * !D1 * !X)	-0.00086	-0.00086	-0.00086
	(A2 * !B1 * !D1 * !X)	0.00147	0.00147	0.00147
	(A1 * !A2 * B1 * !D1 * !X)	-0.00140	-0.00144	-0.00143
	(A1 * !A2 * B1 * !D1 * !X)	0.00146	0.00147	0.00146
	(!A2 * !B1 * D1 * !X)	-0.00078	-0.00077	-0.00078
	(!A2 * !B1 * D1 * !X)	0.00153	0.00151	0.00147
	(!A2 * !B1 * !D1 * !X)	-0.00086	-0.00086	-0.00086
	(!A2 * !B1 * !D1 * !X)	0.00147	0.00147	0.00147
	(!A1 * !A2 * B1 * D1 * !X)	-0.00076	-0.00075	-0.00076
	(!A1 * !A2 * B1 * D1 * !X)	0.00153	0.00151	0.00147
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * B1 * !D1 * !X)	0.00147	0.00148	0.00147

Passive power(pJ) for D1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00032	0.00032	0.00031
	(A2 * !C1 * !X)	-0.00095	-0.00095	-0.00096
	(A2 * !B1 * C1 * !X)	0.00032	0.00032	0.00030
	(A2 * !B1 * C1 * !X)	-0.00091	-0.00092	-0.00095
	(!A2 * !C1 * !X)	0.00032	0.00031	0.00031
	(!A2 * !C1 * !X)	-0.00095	-0.00095	-0.00096
	(!A2 * !B1 * C1 * !X)	0.00032	0.00032	0.00030
	(!A2 * !B1 * C1 * !X)	-0.00091	-0.00092	-0.00095
	(!A1 * !A2 * B1 * C1 * !X)	0.00036	0.00036	0.00031
	(!A1 * !A2 * B1 * C1 * !X)	-0.00085	-0.00086	-0.00094

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00034	0.00033	0.00032
	(A2 * !C1 * !X)	-0.00106	-0.00106	-0.00108
	(A2 * !B1 * C1 * !X)	0.00033	0.00033	0.00031
	(A2 * !B1 * C1 * !X)	-0.00102	-0.00103	-0.00108
	(!A2 * !C1 * !X)	0.00033	0.00033	0.00032
	(!A2 * !C1 * !X)	-0.00106	-0.00106	-0.00108
	(!A2 * !B1 * C1 * !X)	0.00034	0.00033	0.00031
	(!A2 * !B1 * C1 * !X)	-0.00103	-0.00103	-0.00108
	(!A1 * !A2 * B1 * C1 * !X)	0.00037	0.00037	0.00032
	(!A1 * !A2 * B1 * C1 * !X)	-0.00096	-0.00097	-0.00106
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00069	0.00069	0.00065
	(A2 * !C1 * !X)	-0.00173	-0.00174	-0.00178
	(A2 * !B1 * C1 * !X)	0.00069	0.00068	0.00062
	(A2 * !B1 * C1 * !X)	-0.00166	-0.00167	-0.00177
	(!A2 * !C1 * !X)	0.00069	0.00069	0.00065
	(!A2 * !C1 * !X)	-0.00171	-0.00174	-0.00178
	(!A2 * !B1 * C1 * !X)	0.00068	0.00068	0.00062
	(!A2 * !B1 * C1 * !X)	-0.00164	-0.00167	-0.00177
	(!A1 * !A2 * B1 * C1 * !X)	0.00074	0.00074	0.00063
	(!A1 * !A2 * B1 * C1 * !X)	-0.00154	-0.00155	-0.00175

Passive power(pJ) for D1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00031	-0.00031	-0.00030
	(A2 * !C1 * !X)	0.00097	0.00097	0.00096
	(A2 * !B1 * C1 * !X)	-0.00030	-0.00030	-0.00030
	(A2 * !B1 * C1 * !X)	0.00096	0.00097	0.00096
	(!A2 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !C1 * !X)	0.00095	0.00096	0.00096
	(!A2 * !B1 * C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * C1 * !X)	0.00095	0.00096	0.00096
	(!A1 * !A2 * B1 * C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * B1 * C1 * !X)	0.00097	0.00096	0.00096
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00032	-0.00031	-0.00031
	(A2 * !C1 * !X)	0.00109	0.00108	0.00108
	(A2 * !B1 * C1 * !X)	-0.00031	-0.00031	-0.00031
	(A2 * !B1 * C1 * !X)	0.00109	0.00108	0.00108
	(!A2 * !C1 * !X)	-0.00032	-0.00031	-0.00031
	(!A2 * !C1 * !X)	0.00109	0.00108	0.00108
	(!A2 * !B1 * C1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * C1 * !X)	0.00108	0.00108	0.00108
	(!A1 * !A2 * B1 * C1 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * B1 * C1 * !X)	0.00109	0.00108	0.00108
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00065	-0.00064	-0.00063
	(A2 * !C1 * !X)	0.00181	0.00179	0.00178
	(A2 * !B1 * C1 * !X)	-0.00062	-0.00062	-0.00062
	(A2 * !B1 * C1 * !X)	0.00178	0.00179	0.00178
	(!A2 * !C1 * !X)	-0.00063	-0.00064	-0.00063
	(!A2 * !C1 * !X)	0.00178	0.00179	0.00178
	(!A2 * !B1 * C1 * !X)	-0.00062	-0.00062	-0.00062
	(!A2 * !B1 * C1 * !X)	0.00178	0.00179	0.00178
	(!A1 * !A2 * B1 * C1 * !X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A2 * B1 * C1 * !X)	0.00179	0.00179	0.00178

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	C1	Y
0	0	x	x	1
x	1	0	x	1
x	1	1	0	1
x	1	1	1	0
1	x	0	x	1
1	x	1	0	1
1	x	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211ai_1	9.59040
sky130_fd_sc_hs__o211ai_2	15.98400
sky130_fd_sc_hs__o211ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__o211ai_1	0.00240	0.00255	0.00260	0.00256	0.07425
sky130_fd_sc_hs__o211ai_2	0.00463	0.00485	0.00485	0.00480	0.14516
sky130_fd_sc_hs__o211ai_4	0.00910	0.00957	0.00691	0.00726	0.28433

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	0.00006	0.00013
sky130_fd_sc_hs__o211ai_2	0.00000	0.00012	0.00025
sky130_fd_sc_hs__o211ai_4	0.00000	0.00020	0.00041

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (FR)	0.85729	2.95749	14.34890
	A2->Y (FR)	0.79613	2.79814	13.77600
	B1->Y (FR)	0.27977	1.62972	9.54035
	C1->Y (FR)	0.23325	1.57909	9.49100
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.74908	2.61583	14.34280
	A2->Y (FR)	0.66094	2.42803	13.77120
	B1->Y (FR)	0.22951	1.47502	9.45547
	C1->Y (FR)	0.17123	1.40775	9.37792
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.68067	2.33623	14.33240
	A2->Y (FR)	0.59717	2.15377	13.73990
	B1->Y (FR)	0.32942	1.74538	12.07550
	C1->Y (FR)	0.22471	1.64225	11.91010

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.13537	0.85569	4.87805
	A2->Y (RF)	0.12488	0.83847	4.84440
	B1->Y (RF)	0.12609	0.89496	5.22489
	C1->Y (RF)	0.10901	0.88504	5.21486
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.12300	0.79510	4.84888
	A2->Y (RF)	0.11493	0.78042	4.83446
	B1->Y (RF)	0.11535	0.84850	5.31321
	C1->Y (RF)	0.09296	0.82861	5.30748
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.11976	0.75909	4.91912
	A2->Y (RF)	0.10774	0.73638	4.87205
	B1->Y (RF)	0.10435	0.79499	5.37539
	C1->Y (RF)	0.08480	0.79116	5.50423

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00087	0.00081	0.00079
	A1	0.00427	0.00420	0.00417
	A2	0.00089	0.00080	0.00078
	A2	0.00398	0.00390	0.00386
	B1	0.00040	0.00030	0.00028
	B1	0.00334	0.00323	0.00321
	C1	0.00008	-0.00002	-0.00003
	C1	0.00262	0.00249	0.00253
sky130_fd_sc_hs__o211ai_2	A1	0.00090	0.00079	0.00075
	A1	0.00775	0.00762	0.00725
	A2	0.00091	0.00075	0.00071
	A2	0.00709	0.00692	0.00686
	B1	0.00019	-0.00002	-0.00005
	B1	0.00605	0.00583	0.00580
	C1	-0.00073	-0.00086	-0.00086
	C1	0.00428	0.00413	0.00417
sky130_fd_sc_hs__o211ai_4	A1	0.00176	0.00151	0.00146
	A1	0.01497	0.01470	0.01461
	A2	0.00172	0.00137	0.00132
	A2	0.01369	0.01330	0.01322
	B1	0.00013	-0.00024	-0.00024
	B1	0.00950	0.00913	0.00911
	C1	-0.00150	-0.00168	-0.00167
	C1	0.00636	0.00615	0.00618

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00454	0.00450	0.00446
	A1	0.00106	0.00102	0.00099
	A2	0.00396	0.00396	0.00393
	A2	0.00076	0.00074	0.00072
	B1	0.00404	0.00401	0.00396
	B1	0.00110	0.00106	0.00103
	C1	0.00360	0.00356	0.00352
	C1	0.00110	0.00106	0.00102
sky130_fd_sc_hs__o211ai_2	A1	0.00850	0.00840	0.00831
	A1	0.00152	0.00142	0.00134
	A2	0.00711	0.00709	0.00707
	A2	0.00071	0.00066	0.00066
	B1	0.00739	0.00732	0.00726
	B1	0.00153	0.00145	0.00138
	C1	0.00641	0.00633	0.00628
	C1	0.00151	0.00141	0.00134
sky130_fd_sc_hs__o211ai_4	A1	0.01527	0.01508	0.01496
	A1	0.00178	0.00155	0.00143
	A2	0.01254	0.01247	0.01250
	A2	0.00013	0.00002	0.00005
	B1	0.01248	0.01241	0.01239
	B1	0.00312	0.00305	0.00296
	C1	0.01076	0.01069	0.01068
	C1	0.00310	0.00303	0.00294

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o211ai_1	**(A2 * B1 * C1 * !Y)**	0.00081	0.00081	0.00081
	(A2 * B1 * C1 * !Y)	-0.00088	-0.00089	-0.00089
	(A2 * B1 * !C1 * Y)	0.00081	0.00081	0.00081
	(A2 * B1 * !C1 * Y)	-0.00088	-0.00089	-0.00089
	(A2 * !B1 * Y)	0.00081	0.00081	0.00081
	(A2 * !B1 * Y)	-0.00088	-0.00089	-0.00089
	(!A2 * B1 * !C1 * Y)	0.00073	0.00073	0.00073
	(!A2 * B1 * !C1 * Y)	-0.00091	-0.00091	-0.00091
	(!A2 * !B1 * C1 * Y)	0.00075	0.00075	0.00075
	(!A2 * !B1 * C1 * Y)	-0.00091	-0.00091	-0.00091
	(!A2 * !B1 * !C1 * Y)	0.00075	0.00076	0.00075
	(!A2 * !B1 * !C1 * Y)	-0.00091	-0.00092	-0.00091
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00160	0.00160	0.00159
	(A2 * B1 * C1 * !Y)	-0.00178	-0.00181	-0.00180
	(A2 * B1 * !C1 * Y)	0.00158	0.00159	0.00158
	(A2 * B1 * !C1 * Y)	-0.00179	-0.00183	-0.00182
	(A2 * !B1 * Y)	0.00158	0.00159	0.00158
	(A2 * !B1 * Y)	-0.00179	-0.00183	-0.00182
	(!A2 * B1 * !C1 * Y)	0.00144	0.00144	0.00143
	(!A2 * B1 * !C1 * Y)	-0.00188	-0.00188	-0.00188
	(!A2 * !B1 * C1 * Y)	0.00146	0.00147	0.00146
	(!A2 * !B1 * C1 * Y)	-0.00188	-0.00188	-0.00188
	(!A2 * !B1 * !C1 * Y)	0.00146	0.00147	0.00146
	(!A2 * !B1 * !C1 * Y)	-0.00188	-0.00189	-0.00188

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00311	0.00312	0.00309
	(A2 * B1 * C1 * !Y)	-0.00354	-0.00360	-0.00358
	(A2 * B1 * !C1 * Y)	0.00310	0.00311	0.00308
	(A2 * B1 * !C1 * Y)	-0.00356	-0.00362	-0.00359
	(A2 * !B1 * Y)	0.00310	0.00311	0.00308
	(A2 * !B1 * Y)	-0.00356	-0.00362	-0.00359
	(!A2 * B1 * !C1 * Y)	0.00278	0.00278	0.00276
	(!A2 * B1 * !C1 * Y)	-0.00373	-0.00373	-0.00372
	(!A2 * !B1 * C1 * Y)	0.00284	0.00282	0.00283
	(!A2 * !B1 * C1 * Y)	-0.00372	-0.00371	-0.00371
	(!A2 * !B1 * !C1 * Y)	0.00284	0.00283	0.00283
	(!A2 * !B1 * !C1 * Y)	-0.00372	-0.00372	-0.00372

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o211ai_1	**(A2 * B1 * C1 * !Y)**	-0.00081	-0.00081	-0.00081
	(A2 * B1 * C1 * !Y)	0.00090	0.00089	0.00089
	(A2 * B1 * !C1 * Y)	-0.00080	-0.00081	-0.00081
	(A2 * B1 * !C1 * Y)	0.00088	0.00089	0.00089
	(A2 * !B1 * Y)	-0.00081	-0.00081	-0.00081
	(A2 * !B1 * Y)	0.00090	0.00089	0.00089
	(!A2 * B1 * !C1 * Y)	-0.00071	-0.00073	-0.00073
	(!A2 * B1 * !C1 * Y)	0.00091	0.00092	0.00091
	(!A2 * !B1 * C1 * Y)	-0.00074	-0.00075	-0.00075
	(!A2 * !B1 * C1 * Y)	0.00091	0.00092	0.00091
	(!A2 * !B1 * !C1 * Y)	-0.00074	-0.00076	-0.00075
	(!A2 * !B1 * !C1 * Y)	0.00091	0.00092	0.00091

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00159	-0.00159	-0.00159
	(A2 * B1 * C1 * !Y)	0.00180	0.00181	0.00180
	(A2 * B1 * !C1 * Y)	-0.00158	-0.00158	-0.00157
	(A2 * B1 * !C1 * Y)	0.00182	0.00183	0.00182
	(A2 * !B1 * Y)	-0.00158	-0.00158	-0.00157
	(A2 * !B1 * Y)	0.00182	0.00183	0.00182
	(!A2 * B1 * !C1 * Y)	-0.00139	-0.00144	-0.00143
	(!A2 * B1 * !C1 * Y)	0.00188	0.00190	0.00188
	(!A2 * !B1 * C1 * Y)	-0.00143	-0.00147	-0.00146
	(!A2 * !B1 * C1 * Y)	0.00188	0.00189	0.00188
	(!A2 * !B1 * !C1 * Y)	-0.00143	-0.00147	-0.00146
	(!A2 * !B1 * !C1 * Y)	0.00188	0.00189	0.00188
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00309	-0.00310	-0.00309
	(A2 * B1 * C1 * !Y)	0.00359	0.00360	0.00358
	(A2 * B1 * !C1 * Y)	-0.00309	-0.00309	-0.00308
	(A2 * B1 * !C1 * Y)	0.00362	0.00362	0.00359
	(A2 * !B1 * Y)	-0.00309	-0.00309	-0.00308
	(A2 * !B1 * Y)	0.00362	0.00362	0.00359
	(!A2 * B1 * !C1 * Y)	-0.00268	-0.00278	-0.00276
	(!A2 * B1 * !C1 * Y)	0.00374	0.00377	0.00373
	(!A2 * !B1 * C1 * Y)	-0.00278	-0.00282	-0.00283
	(!A2 * !B1 * C1 * Y)	0.00375	0.00377	0.00373
	(!A2 * !B1 * !C1 * Y)	-0.00278	-0.00283	-0.00283
	(!A2 * !B1 * !C1 * Y)	0.00375	0.00375	0.00373

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o211ai_1	**(A1 * B1 * C1 * !Y)**	0.00088	0.00088	0.00088
	(A1 * B1 * C1 * !Y)	-0.00061	-0.00061	-0.00060
	(A1 * B1 * !C1 * Y)	0.00080	0.00079	0.00079
	(A1 * B1 * !C1 * Y)	-0.00089	-0.00089	-0.00089
	(A1 * !B1 * C1 * Y)	0.00079	0.00079	0.00079
	(A1 * !B1 * C1 * Y)	-0.00088	-0.00090	-0.00089
	(A1 * !B1 * !C1 * Y)	0.00080	0.00080	0.00079
	(A1 * !B1 * !C1 * Y)	-0.00089	-0.00090	-0.00089
	(!A1 * B1 * !C1 * Y)	0.00071	0.00071	0.00071
	(!A1 * B1 * !C1 * Y)	-0.00092	-0.00092	-0.00092
	(!A1 * !B1 * C1 * Y)	0.00073	0.00073	0.00073
	(!A1 * !B1 * C1 * Y)	-0.00092	-0.00092	-0.00092
	(!A1 * !B1 * !C1 * Y)	0.00073	0.00074	0.00073
	(!A1 * !B1 * !C1 * Y)	-0.00092	-0.00093	-0.00092
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00183	0.00182	0.00181
	(A1 * B1 * C1 * !Y)	-0.00119	-0.00118	-0.00117
	(A1 * B1 * !C1 * Y)	0.00158	0.00160	0.00158
	(A1 * B1 * !C1 * Y)	-0.00178	-0.00180	-0.00179
	(A1 * !B1 * C1 * Y)	0.00158	0.00160	0.00158
	(A1 * !B1 * C1 * Y)	-0.00178	-0.00180	-0.00179
	(A1 * !B1 * !C1 * Y)	0.00160	0.00159	0.00158
	(A1 * !B1 * !C1 * Y)	-0.00179	-0.00181	-0.00180
	(!A1 * B1 * !C1 * Y)	0.00143	0.00144	0.00143
	(!A1 * B1 * !C1 * Y)	-0.00186	-0.00186	-0.00186
	(!A1 * !B1 * C1 * Y)	0.00145	0.00145	0.00145
	(!A1 * !B1 * C1 * Y)	-0.00185	-0.00185	-0.00185
	(!A1 * !B1 * !C1 * Y)	0.00145	0.00144	0.00145
	(!A1 * !B1 * !C1 * Y)	-0.00185	-0.00185	-0.00185

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00353	0.00356	0.00354
	(A1 * B1 * C1 * !Y)	-0.00237	-0.00238	-0.00237
	(A1 * B1 * !C1 * Y)	0.00309	0.00312	0.00308
	(A1 * B1 * !C1 * Y)	-0.00357	-0.00362	-0.00360
	(A1 * !B1 * C1 * Y)	0.00309	0.00312	0.00308
	(A1 * !B1 * C1 * Y)	-0.00357	-0.00362	-0.00360
	(A1 * !B1 * !C1 * Y)	0.00309	0.00312	0.00308
	(A1 * !B1 * !C1 * Y)	-0.00358	-0.00363	-0.00361
	(!A1 * B1 * !C1 * Y)	0.00277	0.00276	0.00276
	(!A1 * B1 * !C1 * Y)	-0.00373	-0.00373	-0.00373
	(!A1 * !B1 * C1 * Y)	0.00282	0.00286	0.00282
	(!A1 * !B1 * C1 * Y)	-0.00373	-0.00376	-0.00373
	(!A1 * !B1 * !C1 * Y)	0.00283	0.00286	0.00282
	(!A1 * !B1 * !C1 * Y)	-0.00374	-0.00376	-0.00373

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o211ai_1	**(A1 * B1 * C1 * !Y)**	-0.00086	-0.00087	-0.00088
	(A1 * B1 * C1 * !Y)	0.00061	0.00061	0.00060
	(A1 * B1 * !C1 * Y)	-0.00079	-0.00079	-0.00079
	(A1 * B1 * !C1 * Y)	0.00089	0.00089	0.00089
	(A1 * !B1 * C1 * Y)	-0.00079	-0.00079	-0.00079
	(A1 * !B1 * C1 * Y)	0.00089	0.00090	0.00089
	(A1 * !B1 * !C1 * Y)	-0.00079	-0.00079	-0.00079
	(A1 * !B1 * !C1 * Y)	0.00089	0.00090	0.00089
	(!A1 * B1 * !C1 * Y)	-0.00069	-0.00071	-0.00071
	(!A1 * B1 * !C1 * Y)	0.00092	0.00092	0.00092
	(!A1 * !B1 * C1 * Y)	-0.00072	-0.00073	-0.00073
	(!A1 * !B1 * C1 * Y)	0.00092	0.00093	0.00092
	(!A1 * !B1 * !C1 * Y)	-0.00072	-0.00074	-0.00073
	(!A1 * !B1 * !C1 * Y)	0.00092	0.00093	0.00092
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00175	-0.00177	-0.00181
	(A1 * B1 * C1 * !Y)	0.00123	0.00123	0.00119
	(A1 * B1 * !C1 * Y)	-0.00158	-0.00159	-0.00158
	(A1 * B1 * !C1 * Y)	0.00180	0.00180	0.00179
	(A1 * !B1 * C1 * Y)	-0.00158	-0.00159	-0.00158
	(A1 * !B1 * C1 * Y)	0.00180	0.00180	0.00179
	(A1 * !B1 * !C1 * Y)	-0.00158	-0.00158	-0.00158
	(A1 * !B1 * !C1 * Y)	0.00180	0.00181	0.00180
	(!A1 * B1 * !C1 * Y)	-0.00138	-0.00144	-0.00143
	(!A1 * B1 * !C1 * Y)	0.00186	0.00187	0.00186
	(!A1 * !B1 * C1 * Y)	-0.00142	-0.00145	-0.00145
	(!A1 * !B1 * C1 * Y)	0.00185	0.00187	0.00186
	(!A1 * !B1 * !C1 * Y)	-0.00142	-0.00144	-0.00145
	(!A1 * !B1 * !C1 * Y)	0.00185	0.00187	0.00186

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00345	-0.00347	-0.00354
	(A1 * B1 * C1 * !Y)	0.00247	0.00246	0.00239
	(A1 * B1 * !C1 * Y)	-0.00309	-0.00309	-0.00308
	(A1 * B1 * !C1 * Y)	0.00362	0.00362	0.00360
	(A1 * !B1 * C1 * Y)	-0.00309	-0.00309	-0.00307
	(A1 * !B1 * C1 * Y)	0.00361	0.00362	0.00360
	(A1 * !B1 * !C1 * Y)	-0.00309	-0.00309	-0.00307
	(A1 * !B1 * !C1 * Y)	0.00362	0.00363	0.00361
	(!A1 * B1 * !C1 * Y)	-0.00267	-0.00276	-0.00276
	(!A1 * B1 * !C1 * Y)	0.00375	0.00376	0.00374
	(!A1 * !B1 * C1 * Y)	-0.00276	-0.00286	-0.00282
	(!A1 * !B1 * C1 * Y)	0.00374	0.00376	0.00374
	(!A1 * !B1 * !C1 * Y)	-0.00277	-0.00286	-0.00282
	(!A1 * !B1 * !C1 * Y)	0.00374	0.00376	0.00374

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00071	0.00072	0.00071
	(A2 * !C1 * Y)	-0.00096	-0.00097	-0.00097
	(A1 * !A2 * !C1 * Y)	0.00072	0.00072	0.00071
	(A1 * !A2 * !C1 * Y)	-0.00096	-0.00097	-0.00097
	(!A1 * !A2 * C1 * Y)	0.00042	0.00041	0.00042
	(!A1 * !A2 * C1 * Y)	-0.00097	-0.00096	-0.00096
	(!A1 * !A2 * !C1 * Y)	0.00046	0.00047	0.00046
	(!A1 * !A2 * !C1 * Y)	-0.00097	-0.00098	-0.00097
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00144	0.00144	0.00143
	(A2 * !C1 * Y)	-0.00190	-0.00190	-0.00189
	(A1 * !A2 * !C1 * Y)	0.00143	0.00144	0.00143
	(A1 * !A2 * !C1 * Y)	-0.00190	-0.00190	-0.00189
	(!A1 * !A2 * C1 * Y)	0.00079	0.00079	0.00080
	(!A1 * !A2 * C1 * Y)	-0.00188	-0.00189	-0.00188
	(!A1 * !A2 * !C1 * Y)	0.00088	0.00088	0.00087
	(!A1 * !A2 * !C1 * Y)	-0.00190	-0.00191	-0.00190
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00284	0.00282	0.00283
	(A2 * !C1 * Y)	-0.00191	-0.00190	-0.00190
	(A1 * !A2 * !C1 * Y)	0.00282	0.00284	0.00283
	(A1 * !A2 * !C1 * Y)	-0.00190	-0.00190	-0.00190
	(!A1 * !A2 * C1 * Y)	0.00154	0.00155	0.00156
	(!A1 * !A2 * C1 * Y)	-0.00189	-0.00189	-0.00187
	(!A1 * !A2 * !C1 * Y)	0.00171	0.00171	0.00170
	(!A1 * !A2 * !C1 * Y)	-0.00191	-0.00192	-0.00191

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00070	-0.00072	-0.00071
	(A2 * !C1 * Y)	0.00097	0.00098	0.00097
	(A1 * !A2 * !C1 * Y)	-0.00070	-0.00072	-0.00071
	(A1 * !A2 * !C1 * Y)	0.00096	0.00098	0.00097
	(!A1 * !A2 * C1 * Y)	-0.00039	-0.00039	-0.00040
	(!A1 * !A2 * C1 * Y)	0.00100	0.00100	0.00097
	(!A1 * !A2 * !C1 * Y)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * !C1 * Y)	0.00097	0.00098	0.00097
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00141	-0.00144	-0.00143
	(A2 * !C1 * Y)	0.00191	0.00192	0.00190
	(A1 * !A2 * !C1 * Y)	-0.00141	-0.00144	-0.00143
	(A1 * !A2 * !C1 * Y)	0.00191	0.00192	0.00190
	(!A1 * !A2 * C1 * Y)	-0.00075	-0.00075	-0.00077
	(!A1 * !A2 * C1 * Y)	0.00197	0.00196	0.00191
	(!A1 * !A2 * !C1 * Y)	-0.00088	-0.00088	-0.00087
	(!A1 * !A2 * !C1 * Y)	0.00190	0.00192	0.00191
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00279	-0.00282	-0.00283
	(A2 * !C1 * Y)	0.00192	0.00193	0.00191
	(A1 * !A2 * !C1 * Y)	-0.00278	-0.00284	-0.00283
	(A1 * !A2 * !C1 * Y)	0.00192	0.00190	0.00191
	(!A1 * !A2 * C1 * Y)	-0.00146	-0.00146	-0.00149
	(!A1 * !A2 * C1 * Y)	0.00202	0.00201	0.00192
	(!A1 * !A2 * !C1 * Y)	-0.00171	-0.00171	-0.00170
	(!A1 * !A2 * !C1 * Y)	0.00191	0.00193	0.00192

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00032	0.00032	0.00031
	(A2 * !B1 * Y)	-0.00109	-0.00110	-0.00112
	(!A2 * !B1 * Y)	0.00032	0.00032	0.00031
	(!A2 * !B1 * Y)	-0.00110	-0.00110	-0.00112
	(!A1 * !A2 * B1 * Y)	0.00035	0.00034	0.00031
	(!A1 * !A2 * B1 * Y)	-0.00104	-0.00104	-0.00111
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00068	0.00068	0.00064
	(A2 * !B1 * Y)	-0.00212	-0.00213	-0.00218
	(!A2 * !B1 * Y)	0.00068	0.00068	0.00064
	(!A2 * !B1 * Y)	-0.00212	-0.00212	-0.00218
	(!A1 * !A2 * B1 * Y)	0.00069	0.00069	0.00061
	(!A1 * !A2 * B1 * Y)	-0.00201	-0.00203	-0.00216
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00130	0.00130	0.00124
	(A2 * !B1 * Y)	-0.00249	-0.00251	-0.00260
	(!A2 * !B1 * Y)	0.00130	0.00130	0.00124
	(!A2 * !B1 * Y)	-0.00250	-0.00252	-0.00260
	(!A1 * !A2 * B1 * Y)	0.00133	0.00132	0.00119
	(!A1 * !A2 * B1 * Y)	-0.00227	-0.00229	-0.00256

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00031	-0.00031	-0.00030
	(A2 * !B1 * Y)	0.00113	0.00113	0.00112
	(!A2 * !B1 * Y)	-0.00030	-0.00031	-0.00030
	(!A2 * !B1 * Y)	0.00111	0.00113	0.00112
	(!A1 * !A2 * B1 * Y)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * B1 * Y)	0.00112	0.00112	0.00112
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00063	-0.00063	-0.00062
	(A2 * !B1 * Y)	0.00218	0.00221	0.00218
	(!A2 * !B1 * Y)	-0.00063	-0.00063	-0.00062
	(!A2 * !B1 * Y)	0.00218	0.00219	0.00218
	(!A1 * !A2 * B1 * Y)	-0.00061	-0.00061	-0.00061
	(!A1 * !A2 * B1 * Y)	0.00218	0.00220	0.00218
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00121	-0.00120	-0.00120
	(A2 * !B1 * Y)	0.00260	0.00259	0.00260
	(!A2 * !B1 * Y)	-0.00121	-0.00121	-0.00120
	(!A2 * !B1 * Y)	0.00261	0.00261	0.00260
	(!A1 * !A2 * B1 * Y)	-0.00117	-0.00118	-0.00116
	(!A1 * !A2 * B1 * Y)	0.00260	0.00262	0.00260

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	C1	X
0	0	x	x	0
x	1	0	x	0
x	1	1	0	0
x	1	1	1	1
1	x	0	x	0
1	x	1	0	0
1	x	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211a_1	14.38560
sky130_fd_sc_hs__o211a_2	12.78720
sky130_fd_sc_hs__o211a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__o211a_1	0.00233	0.00255	0.00235	0.00233	0.19119
sky130_fd_sc_hs__o211a_2	0.00249	0.00251	0.00251	0.00247	0.37814
sky130_fd_sc_hs__o211a_4	0.00446	0.00429	0.00448	0.00396	0.73002

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211a_1	0.00000	0.00010	0.00017
sky130_fd_sc_hs__o211a_2	0.00000	0.00014	0.00020
sky130_fd_sc_hs__o211a_4	0.00000	0.00027	0.00037

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (RR)	0.37889	1.76496	10.09780
	A2->X (RR)	0.35711	1.74015	10.02780
	B1->X (RR)	0.36563	1.77855	10.07220
	C1->X (RR)	0.34996	1.75330	9.85066
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.36898	1.57463	10.14170
	A2->X (RR)	0.34174	1.54702	10.07830
	B1->X (RR)	0.35772	1.60363	10.17770
	C1->X (RR)	0.34257	1.58745	9.99683
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.36274	1.44250	10.22780
	A2->X (RR)	0.35695	1.42725	10.16690
	B1->X (RR)	0.35010	1.46193	10.23170
	C1->X (RR)	0.33214	1.43791	10.02280

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	1.18257	2.30287	8.64994
	A2->X (FF)	1.11821	2.13740	8.11424
	B1->X (FF)	0.43506	1.48409	7.41263
	C1->X (FF)	0.39448	1.44566	7.31775
sky130_fd_sc_hs__o211a_2	A1->X (FF)	1.43857	2.58326	9.07042
	A2->X (FF)	1.36858	2.40943	8.55972
	B1->X (FF)	0.53998	1.58270	7.73448
	C1->X (FF)	0.49356	1.53917	7.64579
sky130_fd_sc_hs__o211a_4	A1->X (FF)	1.28326	2.38411	8.87340
	A2->X (FF)	1.21539	2.20987	8.34813
	B1->X (FF)	0.52782	1.52893	7.60101
	C1->X (FF)	0.51068	1.51401	7.54696

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00604	0.00606	0.00602
	A1	0.00268	0.00269	0.00266
	A2	0.00568	0.00569	0.00565
	A2	0.00242	0.00243	0.00239
	B1	0.00553	0.00553	0.00549
	B1	0.00269	0.00269	0.00265
	C1	0.00516	0.00514	0.00508
	C1	0.00268	0.00266	0.00261
sky130_fd_sc_hs__o211a_2	A1	0.00747	0.00758	0.00760
	A1	0.00390	0.00402	0.00404
	A2	0.00688	0.00698	0.00698
	A2	0.00362	0.00372	0.00372
	B1	0.00693	0.00702	0.00703
	B1	0.00393	0.00402	0.00403
	C1	0.00653	0.00658	0.00657
	C1	0.00392	0.00398	0.00397
sky130_fd_sc_hs__o211a_4	A1	0.01366	0.01388	0.01400
	A1	0.00733	0.00755	0.00767
	A2	0.01235	0.01255	0.01264
	A2	0.00674	0.00693	0.00703
	B1	0.01284	0.01302	0.01312
	B1	0.00760	0.00779	0.00789
	C1	0.01173	0.01185	0.01191
	C1	0.00761	0.00775	0.00780

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00248	0.00247	0.00243
	A1	0.00574	0.00574	0.00567
	A2	0.00227	0.00225	0.00221
	A2	0.00541	0.00540	0.00532
	B1	0.00208	0.00199	0.00235
	B1	0.00492	0.00483	0.00478
	C1	0.00187	0.00174	0.00211
	C1	0.00437	0.00428	0.00424
sky130_fd_sc_hs__o211a_2	A1	0.00356	0.00367	0.00368
	A1	0.00701	0.00713	0.00711
	A2	0.00357	0.00366	0.00367
	A2	0.00670	0.00680	0.00677
	B1	0.00326	0.00330	0.00403
	B1	0.00625	0.00628	0.00624
	C1	0.00302	0.00302	0.00339
	C1	0.00564	0.00565	0.00563
sky130_fd_sc_hs__o211a_4	A1	0.00669	0.00700	0.00681
	A1	0.01283	0.01315	0.01317
	A2	0.00690	0.00714	0.00752
	A2	0.01226	0.01253	0.01253
	B1	0.00588	0.00596	0.00601
	B1	0.01109	0.01119	0.01117
	C1	0.00577	0.00586	0.00645
	C1	0.00996	0.01005	0.01007

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o211a_1	**(A2 * B1 * C1 * X)**	0.00078	0.00078	0.00078
	(A2 * B1 * C1 * X)	-0.00081	-0.00082	-0.00082
	(A2 * B1 * !C1 * !X)	0.00068	0.00069	0.00068
	(A2 * B1 * !C1 * !X)	-0.00090	-0.00092	-0.00091
	(A2 * !B1 * !X)	0.00068	0.00069	0.00068
	(A2 * !B1 * !X)	-0.00090	-0.00092	-0.00091
	(!A2 * B1 * !C1 * !X)	0.00062	0.00061	0.00061
	(!A2 * B1 * !C1 * !X)	-0.00094	-0.00094	-0.00094
	(!A2 * !B1 * C1 * !X)	0.00064	0.00064	0.00063
	(!A2 * !B1 * C1 * !X)	-0.00094	-0.00094	-0.00094
	(!A2 * !B1 * !C1 * !X)	0.00064	0.00064	0.00063
	(!A2 * !B1 * !C1 * !X)	-0.00094	-0.00094	-0.00094
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00088	0.00088	0.00088
	(A2 * B1 * C1 * X)	-0.00078	-0.00080	-0.00079
	(A2 * B1 * !C1 * !X)	0.00075	0.00075	0.00075
	(A2 * B1 * !C1 * !X)	-0.00091	-0.00093	-0.00092
	(A2 * !B1 * !X)	0.00075	0.00075	0.00075
	(A2 * !B1 * !X)	-0.00091	-0.00093	-0.00092
	(!A2 * B1 * !C1 * !X)	0.00068	0.00068	0.00068
	(!A2 * B1 * !C1 * !X)	-0.00094	-0.00094	-0.00094
	(!A2 * !B1 * C1 * !X)	0.00070	0.00070	0.00070
	(!A2 * !B1 * C1 * !X)	-0.00094	-0.00095	-0.00095
	(!A2 * !B1 * !C1 * !X)	0.00070	0.00070	0.00070
	(!A2 * !B1 * !C1 * !X)	-0.00094	-0.00095	-0.00095

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00156	0.00157	0.00155
	(A2 * B1 * C1 * X)	-0.00160	-0.00163	-0.00162
	(A2 * B1 * !C1 * !X)	0.00153	0.00154	0.00152
	(A2 * B1 * !C1 * !X)	-0.00163	-0.00166	-0.00165
	(A2 * !B1 * !X)	0.00153	0.00154	0.00152
	(A2 * !B1 * !X)	-0.00163	-0.00166	-0.00165
	(!A2 * B1 * !C1 * !X)	0.00139	0.00140	0.00139
	(!A2 * B1 * !C1 * !X)	-0.00170	-0.00170	-0.00170
	(!A2 * !B1 * C1 * !X)	0.00142	0.00143	0.00142
	(!A2 * !B1 * C1 * !X)	-0.00169	-0.00170	-0.00169
	(!A2 * !B1 * !C1 * !X)	0.00142	0.00143	0.00142
	(!A2 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o211a_1	**(A2 * B1 * C1 * X)**	-0.00078	-0.00078	-0.00078
	(A2 * B1 * C1 * X)	0.00083	0.00082	0.00082
	(A2 * B1 * !C1 * !X)	-0.00068	-0.00068	-0.00068
	(A2 * B1 * !C1 * !X)	0.00093	0.00092	0.00091
	(A2 * !B1 * !X)	-0.00068	-0.00068	-0.00068
	(A2 * !B1 * !X)	0.00093	0.00092	0.00091
	(!A2 * B1 * !C1 * !X)	-0.00060	-0.00061	-0.00061
	(!A2 * B1 * !C1 * !X)	0.00095	0.00094	0.00094
	(!A2 * !B1 * C1 * !X)	-0.00062	-0.00064	-0.00063
	(!A2 * !B1 * C1 * !X)	0.00095	0.00095	0.00094
	(!A2 * !B1 * !C1 * !X)	-0.00062	-0.00064	-0.00063
	(!A2 * !B1 * !C1 * !X)	0.00095	0.00095	0.00094

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00088	-0.00088	-0.00088
	(A2 * B1 * C1 * X)	0.00080	0.00080	0.00079
	(A2 * B1 * !C1 * !X)	-0.00075	-0.00075	-0.00075
	(A2 * B1 * !C1 * !X)	0.00094	0.00093	0.00092
	(A2 * !B1 * !X)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * !X)	0.00093	0.00093	0.00092
	(!A2 * B1 * !C1 * !X)	-0.00066	-0.00068	-0.00068
	(!A2 * B1 * !C1 * !X)	0.00095	0.00095	0.00094
	(!A2 * !B1 * C1 * !X)	-0.00068	-0.00070	-0.00070
	(!A2 * !B1 * C1 * !X)	0.00095	0.00095	0.00095
	(!A2 * !B1 * !C1 * !X)	-0.00068	-0.00070	-0.00070
	(!A2 * !B1 * !C1 * !X)	0.00095	0.00095	0.00095
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00154	-0.00155	-0.00155
	(A2 * B1 * C1 * X)	0.00161	0.00163	0.00162
	(A2 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00152
	(A2 * B1 * !C1 * !X)	0.00164	0.00166	0.00165
	(A2 * !B1 * !X)	-0.00151	-0.00152	-0.00152
	(A2 * !B1 * !X)	0.00164	0.00166	0.00165
	(!A2 * B1 * !C1 * !X)	-0.00136	-0.00140	-0.00139
	(!A2 * B1 * !C1 * !X)	0.00171	0.00171	0.00170
	(!A2 * !B1 * C1 * !X)	-0.00140	-0.00143	-0.00142
	(!A2 * !B1 * C1 * !X)	0.00169	0.00171	0.00170
	(!A2 * !B1 * !C1 * !X)	-0.00140	-0.00143	-0.00142
	(!A2 * !B1 * !C1 * !X)	0.00169	0.00171	0.00170

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o211a_1	**(A1 * B1 * C1 * X)**	0.00101	0.00102	0.00101
	(A1 * B1 * C1 * X)	-0.00053	-0.00054	-0.00053
	(A1 * B1 * !C1 * !X)	0.00091	0.00090	0.00090
	(A1 * B1 * !C1 * !X)	-0.00082	-0.00083	-0.00082
	(A1 * !B1 * C1 * !X)	0.00091	0.00090	0.00090
	(A1 * !B1 * C1 * !X)	-0.00082	-0.00083	-0.00082
	(A1 * !B1 * !C1 * !X)	0.00091	0.00091	0.00090
	(A1 * !B1 * !C1 * !X)	-0.00082	-0.00083	-0.00082
	(!A1 * B1 * !C1 * !X)	0.00083	0.00083	0.00083
	(!A1 * B1 * !C1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !B1 * C1 * !X)	0.00085	0.00085	0.00085
	(!A1 * !B1 * C1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !B1 * !C1 * !X)	0.00085	0.00085	0.00085
	(!A1 * !B1 * !C1 * !X)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00089	0.00089	0.00089
	(A1 * B1 * C1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(A1 * B1 * !C1 * !X)	-0.00086	-0.00087	-0.00087
	(A1 * !B1 * C1 * !X)	0.00074	0.00075	0.00074
	(A1 * !B1 * C1 * !X)	-0.00086	-0.00087	-0.00087
	(A1 * !B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(A1 * !B1 * !C1 * !X)	-0.00086	-0.00087	-0.00087
	(!A1 * B1 * !C1 * !X)	0.00066	0.00067	0.00067
	(!A1 * B1 * !C1 * !X)	-0.00089	-0.00089	-0.00089
	(!A1 * !B1 * C1 * !X)	0.00068	0.00070	0.00069
	(!A1 * !B1 * C1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * !B1 * !C1 * !X)	0.00068	0.00070	0.00069
	(!A1 * !B1 * !C1 * !X)	-0.00089	-0.00090	-0.00089

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00150	0.00150	0.00149
	(A1 * B1 * C1 * X)	-0.00110	-0.00109	-0.00109
	(A1 * B1 * !C1 * !X)	0.00129	0.00130	0.00128
	(A1 * B1 * !C1 * !X)	-0.00164	-0.00166	-0.00165
	(A1 * !B1 * C1 * !X)	0.00128	0.00130	0.00128
	(A1 * !B1 * C1 * !X)	-0.00163	-0.00166	-0.00165
	(A1 * !B1 * !C1 * !X)	0.00129	0.00130	0.00128
	(A1 * !B1 * !C1 * !X)	-0.00164	-0.00166	-0.00165
	(!A1 * B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(!A1 * B1 * !C1 * !X)	-0.00171	-0.00171	-0.00171
	(!A1 * !B1 * C1 * !X)	0.00118	0.00119	0.00119
	(!A1 * !B1 * C1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !B1 * !C1 * !X)	0.00118	0.00119	0.00119
	(!A1 * !B1 * !C1 * !X)	-0.00170	-0.00171	-0.00170

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o211a_1	**(A1 * B1 * C1 * X)**	-0.00100	-0.00101	-0.00101
	(A1 * B1 * C1 * X)	0.00055	0.00055	0.00054
	(A1 * B1 * !C1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * B1 * !C1 * !X)	0.00082	0.00083	0.00082
	(A1 * !B1 * C1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !B1 * C1 * !X)	0.00082	0.00083	0.00082
	(A1 * !B1 * !C1 * !X)	-0.00090	-0.00091	-0.00090
	(A1 * !B1 * !C1 * !X)	0.00082	0.00083	0.00082
	(!A1 * B1 * !C1 * !X)	-0.00082	-0.00083	-0.00083
	(!A1 * B1 * !C1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !B1 * C1 * !X)	-0.00084	-0.00085	-0.00085
	(!A1 * !B1 * C1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !B1 * !C1 * !X)	-0.00084	-0.00085	-0.00085
	(!A1 * !B1 * !C1 * !X)	0.00085	0.00086	0.00085
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00087	-0.00088	-0.00089
	(A1 * B1 * C1 * X)	0.00055	0.00055	0.00054
	(A1 * B1 * !C1 * !X)	-0.00074	-0.00074	-0.00073
	(A1 * B1 * !C1 * !X)	0.00087	0.00087	0.00087
	(A1 * !B1 * C1 * !X)	-0.00074	-0.00074	-0.00073
	(A1 * !B1 * C1 * !X)	0.00087	0.00087	0.00087
	(A1 * !B1 * !C1 * !X)	-0.00074	-0.00074	-0.00073
	(A1 * !B1 * !C1 * !X)	0.00087	0.00087	0.00087
	(!A1 * B1 * !C1 * !X)	-0.00065	-0.00067	-0.00067
	(!A1 * B1 * !C1 * !X)	0.00089	0.00089	0.00089
	(!A1 * !B1 * C1 * !X)	-0.00067	-0.00069	-0.00069
	(!A1 * !B1 * C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !B1 * !C1 * !X)	-0.00067	-0.00069	-0.00069
	(!A1 * !B1 * !C1 * !X)	0.00089	0.00090	0.00089

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00146	-0.00147	-0.00149
	(A1 * B1 * C1 * X)	0.00112	0.00112	0.00110
	(A1 * B1 * !C1 * !X)	-0.00129	-0.00129	-0.00128
	(A1 * B1 * !C1 * !X)	0.00166	0.00166	0.00165
	(A1 * !B1 * C1 * !X)	-0.00128	-0.00129	-0.00128
	(A1 * !B1 * C1 * !X)	0.00166	0.00166	0.00165
	(A1 * !B1 * !C1 * !X)	-0.00129	-0.00129	-0.00128
	(A1 * !B1 * !C1 * !X)	0.00166	0.00166	0.00165
	(!A1 * B1 * !C1 * !X)	-0.00112	-0.00116	-0.00115
	(!A1 * B1 * !C1 * !X)	0.00171	0.00172	0.00171
	(!A1 * !B1 * C1 * !X)	-0.00116	-0.00119	-0.00119
	(!A1 * !B1 * C1 * !X)	0.00170	0.00171	0.00171
	(!A1 * !B1 * !C1 * !X)	-0.00116	-0.00119	-0.00119
	(!A1 * !B1 * !C1 * !X)	0.00170	0.00172	0.00171

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00057	0.00058	0.00058
	(A2 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * !A2 * !C1 * !X)	0.00058	0.00058	0.00058
	(A1 * !A2 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(!A1 * !A2 * C1 * !X)	0.00034	0.00034	0.00033
	(!A1 * !A2 * C1 * !X)	-0.00097	-0.00097	-0.00096
	(!A1 * !A2 * !C1 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A2 * !C1 * !X)	-0.00097	-0.00097	-0.00097
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00068	0.00068	0.00068
	(A2 * !C1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * !C1 * !X)	0.00068	0.00068	0.00068
	(A1 * !A2 * !C1 * !X)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * C1 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A2 * C1 * !X)	-0.00091	-0.00091	-0.00090
	(!A1 * !A2 * !C1 * !X)	0.00042	0.00042	0.00042
	(!A1 * !A2 * !C1 * !X)	-0.00091	-0.00092	-0.00091
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00148	0.00149	0.00148
	(A2 * !C1 * !X)	-0.00151	-0.00152	-0.00152
	(A1 * !A2 * !C1 * !X)	0.00148	0.00149	0.00148
	(A1 * !A2 * !C1 * !X)	-0.00151	-0.00152	-0.00152
	(!A1 * !A2 * C1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !A2 * C1 * !X)	-0.00151	-0.00151	-0.00151
	(!A1 * !A2 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !A2 * !C1 * !X)	-0.00153	-0.00153	-0.00153

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00057	-0.00058	-0.00058
	(A2 * !C1 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * !C1 * !X)	-0.00057	-0.00058	-0.00058
	(A1 * !A2 * !C1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !A2 * C1 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * C1 * !X)	0.00099	0.00099	0.00097
	(!A1 * !A2 * !C1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !C1 * !X)	0.00098	0.00098	0.00097
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00066	-0.00068	-0.00068
	(A2 * !C1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A2 * !C1 * !X)	-0.00066	-0.00068	-0.00068
	(A1 * !A2 * !C1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A2 * C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * C1 * !X)	0.00094	0.00093	0.00091
	(!A1 * !A2 * !C1 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * !C1 * !X)	0.00092	0.00092	0.00092
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00147	-0.00149	-0.00148
	(A2 * !C1 * !X)	0.00153	0.00152	0.00152
	(A1 * !A2 * !C1 * !X)	-0.00147	-0.00149	-0.00148
	(A1 * !A2 * !C1 * !X)	0.00153	0.00153	0.00152
	(!A1 * !A2 * C1 * !X)	-0.00091	-0.00092	-0.00093
	(!A1 * !A2 * C1 * !X)	0.00156	0.00156	0.00153
	(!A1 * !A2 * !C1 * !X)	-0.00103	-0.00104	-0.00103
	(!A1 * !A2 * !C1 * !X)	0.00153	0.00153	0.00153

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00027	0.00027	0.00026
	(A2 * !B1 * !X)	-0.00105	-0.00106	-0.00107
	(!A2 * !B1 * !X)	0.00026	0.00027	0.00026
	(!A2 * !B1 * !X)	-0.00105	-0.00106	-0.00107
	(!A1 * !A2 * B1 * !X)	0.00030	0.00030	0.00026
	(!A1 * !A2 * B1 * !X)	-0.00100	-0.00100	-0.00106
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00033	0.00033	0.00032
	(A2 * !B1 * !X)	-0.00102	-0.00102	-0.00103
	(!A2 * !B1 * !X)	0.00033	0.00033	0.00032
	(!A2 * !B1 * !X)	-0.00102	-0.00102	-0.00103
	(!A1 * !A2 * B1 * !X)	0.00036	0.00036	0.00032
	(!A1 * !A2 * B1 * !X)	-0.00096	-0.00097	-0.00103
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00050	0.00049	0.00047
	(A2 * !B1 * !X)	-0.00168	-0.00169	-0.00172
	(!A2 * !B1 * !X)	0.00050	0.00049	0.00047
	(!A2 * !B1 * !X)	-0.00169	-0.00169	-0.00172
	(!A1 * !A2 * B1 * !X)	0.00055	0.00054	0.00047
	(!A1 * !A2 * B1 * !X)	-0.00157	-0.00158	-0.00170

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00026	-0.00025	-0.00025
	(A2 * !B1 * !X)	0.00108	0.00107	0.00107
	(!A2 * !B1 * !X)	-0.00026	-0.00025	-0.00025
	(!A2 * !B1 * !X)	0.00108	0.00107	0.00107
	(!A1 * !A2 * B1 * !X)	-0.00024	-0.00025	-0.00024
	(!A1 * !A2 * B1 * !X)	0.00106	0.00107	0.00107
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00032	-0.00032	-0.00031
	(A2 * !B1 * !X)	0.00104	0.00103	0.00103
	(!A2 * !B1 * !X)	-0.00032	-0.00032	-0.00031
	(!A2 * !B1 * !X)	0.00104	0.00103	0.00103
	(!A1 * !A2 * B1 * !X)	-0.00032	-0.00031	-0.00031
	(!A1 * !A2 * B1 * !X)	0.00104	0.00103	0.00103
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00048	-0.00046	-0.00046
	(A2 * !B1 * !X)	0.00174	0.00172	0.00172
	(!A2 * !B1 * !X)	-0.00048	-0.00046	-0.00046
	(!A2 * !B1 * !X)	0.00174	0.00172	0.00172
	(!A1 * !A2 * B1 * !X)	-0.00045	-0.00045	-0.00044
	(!A1 * !A2 * B1 * !X)	0.00171	0.00172	0.00172

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A1	A2	B1	Y
0	0	x	1
x	1	0	1
x	1	1	0
1	x	0	1
1	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ai_1	7.99200
sky130_fd_sc_hs__o21ai_2	11.18880
sky130_fd_sc_hs__o21ai_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__o21ai_1	0.00253	0.00265	0.00261	0.07556
sky130_fd_sc_hs__o21ai_2	0.00512	0.00478	0.00479	0.15127
sky130_fd_sc_hs__o21ai_4	0.00894	0.00943	0.00717	0.28752

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.00006	0.00009
sky130_fd_sc_hs__o21ai_2	0.00000	0.00011	0.00017
sky130_fd_sc_hs__o21ai_4	0.00000	0.00020	0.00032

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (FR)	0.67729	2.78196	14.27480
	A2->Y (FR)	0.61100	2.62364	13.70540
	B1->Y (FR)	0.19959	1.54874	9.47079
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.56820	2.42846	14.33410
	A2->Y (FR)	0.47856	2.24898	13.73520
	B1->Y (FR)	0.14859	1.40886	9.50407
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.52151	2.18076	14.27920
	A2->Y (FR)	0.44171	1.98466	13.71310
	B1->Y (FR)	0.20138	1.64581	12.19740

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.09410	0.78910	4.73024
	A2->Y (RF)	0.08828	0.77629	4.70532
	B1->Y (RF)	0.08182	0.79826	4.83782
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.08221	0.73667	4.73420
	A2->Y (RF)	0.07901	0.72347	4.72110
	B1->Y (RF)	0.06650	0.72401	4.85427
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.07879	0.69684	4.73196
	A2->Y (RF)	0.07621	0.68210	4.71414
	B1->Y (RF)	0.06528	0.69153	4.87261

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00034	0.00027	0.00026
	A1	0.00345	0.00338	0.00336
	A2	0.00037	0.00029	0.00028
	A2	0.00313	0.00305	0.00304
	B1	-0.00009	-0.00016	-0.00017
	B1	0.00250	0.00242	0.00243
sky130_fd_sc_hs__o21ai_2	A1	0.00032	0.00019	0.00018
	A1	0.00617	0.00604	0.00602
	A2	0.00034	0.00022	0.00020
	A2	0.00540	0.00526	0.00525
	B1	-0.00083	-0.00090	-0.00090
	B1	0.00387	0.00379	0.00383
sky130_fd_sc_hs__o21ai_4	A1	0.00047	0.00024	0.00022
	A1	0.01170	0.01148	0.01145
	A2	0.00033	0.00004	0.00005
	A2	0.01046	0.01017	0.01015
	B1	-0.00154	-0.00166	-0.00163
	B1	0.00594	0.00579	0.00583

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00366	0.00362	0.00358
	A1	0.00053	0.00048	0.00045
	A2	0.00305	0.00304	0.00302
	A2	0.00023	0.00021	0.00019
	B1	0.00306	0.00302	0.00297
	B1	0.00050	0.00045	0.00042
sky130_fd_sc_hs__o21ai_2	A1	0.00657	0.00648	0.00639
	A1	0.00067	0.00056	0.00050
	A2	0.00514	0.00512	0.00512
	A2	-0.00003	-0.00007	-0.00008
	B1	0.00531	0.00522	0.00516
	B1	0.00068	0.00059	0.00053
sky130_fd_sc_hs__o21ai_4	A1	0.01209	0.01190	0.01173
	A1	0.00077	0.00054	0.00043
	A2	0.00959	0.00951	0.00956
	A2	-0.00076	-0.00085	-0.00082
	B1	0.00938	0.00931	0.00921
	B1	0.00210	0.00199	0.00192

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00090	0.00091	0.00090
	(A2 * B1 * !Y)	-0.00087	-0.00088	-0.00087
	(A2 * !B1 * Y)	0.00083	0.00083	0.00082
	(A2 * !B1 * Y)	-0.00094	-0.00096	-0.00095
	(!A2 * !B1 * Y)	0.00077	0.00077	0.00076
	(!A2 * !B1 * Y)	-0.00098	-0.00098	-0.00098
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00168	0.00168	0.00167
	(A2 * B1 * !Y)	-0.00175	-0.00178	-0.00177
	(A2 * !B1 * Y)	0.00157	0.00158	0.00157
	(A2 * !B1 * Y)	-0.00186	-0.00189	-0.00188
	(!A2 * !B1 * Y)	0.00146	0.00146	0.00145
	(!A2 * !B1 * Y)	-0.00193	-0.00194	-0.00193
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00308	0.00307	0.00304
	(A2 * B1 * !Y)	-0.00347	-0.00354	-0.00351
	(A2 * !B1 * Y)	0.00304	0.00304	0.00302
	(A2 * !B1 * Y)	-0.00352	-0.00357	-0.00355
	(!A2 * !B1 * Y)	0.00281	0.00282	0.00279
	(!A2 * !B1 * Y)	-0.00368	-0.00369	-0.00367

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(A2 * B1 * !Y)	0.00089	0.00088	0.00087
	(A2 * !B1 * Y)	-0.00083	-0.00083	-0.00082
	(A2 * !B1 * Y)	0.00096	0.00096	0.00095
	(!A2 * !B1 * Y)	-0.00075	-0.00077	-0.00076
	(!A2 * !B1 * Y)	0.00098	0.00098	0.00098
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00167	-0.00168	-0.00167
	(A2 * B1 * !Y)	0.00177	0.00178	0.00177
	(A2 * !B1 * Y)	-0.00157	-0.00157	-0.00156
	(A2 * !B1 * Y)	0.00189	0.00189	0.00188
	(!A2 * !B1 * Y)	-0.00142	-0.00146	-0.00145
	(!A2 * !B1 * Y)	0.00193	0.00195	0.00193
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00303	-0.00306	-0.00304
	(A2 * B1 * !Y)	0.00348	0.00354	0.00351
	(A2 * !B1 * Y)	-0.00303	-0.00303	-0.00302
	(A2 * !B1 * Y)	0.00357	0.00357	0.00355
	(!A2 * !B1 * Y)	-0.00274	-0.00282	-0.00279
	(!A2 * !B1 * Y)	0.00368	0.00373	0.00368

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00093	0.00093	0.00093
	(A1 * B1 * !Y)	-0.00058	-0.00058	-0.00058
	(A1 * !B1 * Y)	0.00074	0.00074	0.00074
	(A1 * !B1 * Y)	-0.00096	-0.00097	-0.00097
	(!A1 * !B1 * Y)	0.00069	0.00069	0.00069
	(!A1 * !B1 * Y)	-0.00100	-0.00100	-0.00100
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00168	0.00168	0.00167
	(A1 * B1 * !Y)	-0.00118	-0.00118	-0.00117
	(A1 * !B1 * Y)	0.00151	0.00154	0.00152
	(A1 * !B1 * Y)	-0.00169	-0.00173	-0.00172
	(!A1 * !B1 * Y)	0.00142	0.00142	0.00141
	(!A1 * !B1 * Y)	-0.00178	-0.00179	-0.00178
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00356	0.00356	0.00354
	(A1 * B1 * !Y)	-0.00238	-0.00238	-0.00236
	(A1 * !B1 * Y)	0.00308	0.00311	0.00307
	(A1 * !B1 * Y)	-0.00358	-0.00362	-0.00360
	(!A1 * !B1 * Y)	0.00285	0.00285	0.00283
	(!A1 * !B1 * Y)	-0.00375	-0.00376	-0.00375

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00092	-0.00092	-0.00093
	(A1 * B1 * !Y)	0.00060	0.00060	0.00058
	(A1 * !B1 * Y)	-0.00074	-0.00074	-0.00074
	(A1 * !B1 * Y)	0.00097	0.00097	0.00097
	(!A1 * !B1 * Y)	-0.00068	-0.00069	-0.00069
	(!A1 * !B1 * Y)	0.00100	0.00100	0.00100
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00164	-0.00165	-0.00167
	(A1 * B1 * !Y)	0.00121	0.00121	0.00118
	(A1 * !B1 * Y)	-0.00151	-0.00152	-0.00151
	(A1 * !B1 * Y)	0.00173	0.00173	0.00172
	(!A1 * !B1 * Y)	-0.00138	-0.00142	-0.00141
	(!A1 * !B1 * Y)	0.00178	0.00179	0.00178
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00344	-0.00347	-0.00354
	(A1 * B1 * !Y)	0.00245	0.00246	0.00238
	(A1 * !B1 * Y)	-0.00308	-0.00308	-0.00306
	(A1 * !B1 * Y)	0.00362	0.00362	0.00360
	(!A1 * !B1 * Y)	-0.00278	-0.00285	-0.00283
	(!A1 * !B1 * Y)	0.00375	0.00378	0.00375

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00035	0.00035	0.00033
	(!A1 * !A2 * Y)	-0.00112	-0.00113	-0.00116
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00071	0.00071	0.00066
	(!A1 * !A2 * Y)	-0.00205	-0.00206	-0.00213
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00126	0.00125	0.00117
	(!A1 * !A2 * Y)	-0.00241	-0.00242	-0.00256

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00032	-0.00032	-0.00031
	(!A1 * !A2 * Y)	0.00116	0.00118	0.00117
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00064	-0.00065	-0.00064
	(!A1 * !A2 * Y)	0.00215	0.00217	0.00214
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00114	-0.00115	-0.00113
	(!A1 * !A2 * Y)	0.00257	0.00260	0.00257

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A1	A2	B1	X
0	0	x	0
x	1	0	0
x	1	1	1
1	x	0	0
1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21a_1	9.59040
sky130_fd_sc_hs__o21a_2	12.78720
sky130_fd_sc_hs__o21a_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__o21a_1	0.00216	0.00221	0.00222	0.18882
sky130_fd_sc_hs__o21a_2	0.00237	0.00236	0.00250	0.37552
sky130_fd_sc_hs__o21a_4	0.00452	0.00420	0.00409	0.72615

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	0.00009	0.00012
sky130_fd_sc_hs__o21a_2	0.00000	0.00014	0.00016
sky130_fd_sc_hs__o21a_4	0.00000	0.00026	0.00032

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (RR)	0.27720	1.65774	9.81631
	A2->X (RR)	0.26322	1.63370	9.72730
	B1->X (RR)	0.26650	1.63512	9.56149
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.26943	1.48553	9.97233
	A2->X (RR)	0.25587	1.46744	9.91162
	B1->X (RR)	0.25822	1.47551	9.78012
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.27214	1.35287	9.97086
	A2->X (RR)	0.26718	1.33727	9.90249
	B1->X (RR)	0.25666	1.33685	9.75763

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.89462	1.98327	8.18670
	A2->X (FF)	0.82501	1.81643	7.59247
	B1->X (FF)	0.35389	1.38066	7.04936
sky130_fd_sc_hs__o21a_2	A1->X (FF)	1.22520	2.34390	8.74697
	A2->X (FF)	1.16126	2.17826	8.23540
	B1->X (FF)	0.44122	1.47594	7.47689
sky130_fd_sc_hs__o21a_4	A1->X (FF)	1.13904	2.22638	8.64968
	A2->X (FF)	1.06344	2.04805	8.10853
	B1->X (FF)	0.46260	1.46136	7.43257

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00471	0.00472	0.00469
	A1	0.00209	0.00209	0.00206
	A2	0.00409	0.00407	0.00404
	A2	0.00177	0.00175	0.00172
	B1	0.00429	0.00425	0.00421
	B1	0.00224	0.00221	0.00217
sky130_fd_sc_hs__o21a_2	A1	0.00638	0.00647	0.00649
	A1	0.00350	0.00359	0.00362
	A2	0.00577	0.00584	0.00584
	A2	0.00324	0.00331	0.00331
	B1	0.00584	0.00586	0.00584
	B1	0.00354	0.00357	0.00356
sky130_fd_sc_hs__o21a_4	A1	0.01222	0.01239	0.01247
	A1	0.00683	0.00699	0.00709
	A2	0.01085	0.01100	0.01104
	A2	0.00621	0.00637	0.00640
	B1	0.01103	0.01112	0.01116
	B1	0.00706	0.00715	0.00719

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00207	0.00210	0.00209
	A1	0.00465	0.00468	0.00464
	A2	0.00209	0.00210	0.00224
	A2	0.00435	0.00436	0.00432
	B1	0.00171	0.00154	0.00177
	B1	0.00379	0.00370	0.00368
sky130_fd_sc_hs__o21a_2	A1	0.00341	0.00355	0.00357
	A1	0.00623	0.00638	0.00637
	A2	0.00347	0.00358	0.00359
	A2	0.00592	0.00603	0.00602
	B1	0.00301	0.00302	0.00331
	B1	0.00535	0.00536	0.00534
sky130_fd_sc_hs__o21a_4	A1	0.00619	0.00651	0.00660
	A1	0.01150	0.01183	0.01187
	A2	0.00642	0.00667	0.00673
	A2	0.01092	0.01118	0.01120
	B1	0.00573	0.00575	0.00633
	B1	0.00977	0.00984	0.00985

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00071	0.00071	0.00071
	(A2 * B1 * X)	-0.00082	-0.00084	-0.00083
	(A2 * !B1 * !X)	0.00071	0.00071	0.00071
	(A2 * !B1 * !X)	-0.00082	-0.00084	-0.00083
	(!A2 * !B1 * !X)	0.00066	0.00065	0.00065
	(!A2 * !B1 * !X)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00085	0.00086	0.00085
	(A2 * B1 * X)	-0.00081	-0.00082	-0.00082
	(A2 * !B1 * !X)	0.00085	0.00086	0.00085
	(A2 * !B1 * !X)	-0.00081	-0.00082	-0.00082
	(!A2 * !B1 * !X)	0.00079	0.00080	0.00079
	(!A2 * !B1 * !X)	-0.00083	-0.00084	-0.00084
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00159	0.00161	0.00158
	(A2 * B1 * X)	-0.00156	-0.00159	-0.00158
	(A2 * !B1 * !X)	0.00154	0.00156	0.00153
	(A2 * !B1 * !X)	-0.00162	-0.00164	-0.00163
	(!A2 * !B1 * !X)	0.00143	0.00144	0.00143
	(!A2 * !B1 * !X)	-0.00167	-0.00168	-0.00168

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00071	-0.00071	-0.00070
	(A2 * B1 * X)	0.00084	0.00084	0.00083
	(A2 * !B1 * !X)	-0.00071	-0.00071	-0.00070
	(A2 * !B1 * !X)	0.00084	0.00084	0.00083
	(!A2 * !B1 * !X)	-0.00064	-0.00065	-0.00065
	(!A2 * !B1 * !X)	0.00085	0.00086	0.00085
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00085	-0.00085	-0.00085
	(A2 * B1 * X)	0.00082	0.00082	0.00082
	(A2 * !B1 * !X)	-0.00085	-0.00085	-0.00085
	(A2 * !B1 * !X)	0.00083	0.00082	0.00082
	(!A2 * !B1 * !X)	-0.00078	-0.00080	-0.00079
	(!A2 * !B1 * !X)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * B1 * X)	0.00157	0.00159	0.00158
	(A2 * !B1 * !X)	-0.00153	-0.00154	-0.00153
	(A2 * !B1 * !X)	0.00162	0.00164	0.00163
	(!A2 * !B1 * !X)	-0.00141	-0.00144	-0.00143
	(!A2 * !B1 * !X)	0.00168	0.00169	0.00168

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00074	0.00073	0.00073
	(A1 * B1 * X)	-0.00057	-0.00056	-0.00056
	(A1 * !B1 * !X)	0.00067	0.00068	0.00067
	(A1 * !B1 * !X)	-0.00079	-0.00080	-0.00080
	(!A1 * !B1 * !X)	0.00061	0.00062	0.00062
	(!A1 * !B1 * !X)	-0.00082	-0.00083	-0.00082
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00085	0.00085	0.00084
	(A1 * B1 * X)	-0.00054	-0.00053	-0.00053
	(A1 * !B1 * !X)	0.00076	0.00077	0.00076
	(A1 * !B1 * !X)	-0.00078	-0.00079	-0.00079
	(!A1 * !B1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !B1 * !X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00146	0.00146	0.00145
	(A1 * B1 * X)	-0.00108	-0.00108	-0.00107
	(A1 * !B1 * !X)	0.00127	0.00129	0.00127
	(A1 * !B1 * !X)	-0.00160	-0.00162	-0.00161
	(!A1 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * !B1 * !X)	-0.00167	-0.00167	-0.00167

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00071	-0.00071	-0.00073
	(A1 * B1 * X)	0.00058	0.00058	0.00056
	(A1 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * !B1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !B1 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !B1 * !X)	0.00082	0.00083	0.00082
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00082	-0.00083	-0.00084
	(A1 * B1 * X)	0.00054	0.00055	0.00053
	(A1 * !B1 * !X)	-0.00076	-0.00077	-0.00076
	(A1 * !B1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !B1 * !X)	-0.00070	-0.00072	-0.00071
	(!A1 * !B1 * !X)	0.00081	0.00082	0.00081
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00141	-0.00143	-0.00145
	(A1 * B1 * X)	0.00111	0.00111	0.00108
	(A1 * !B1 * !X)	-0.00127	-0.00128	-0.00127
	(A1 * !B1 * !X)	0.00162	0.00162	0.00161
	(!A1 * !B1 * !X)	-0.00115	-0.00118	-0.00117
	(!A1 * !B1 * !X)	0.00167	0.00168	0.00167

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00032	0.00032	0.00030
	(!A1 * !A2 * !X)	-0.00089	-0.00089	-0.00092
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00036	0.00035	0.00033
	(!A1 * !A2 * !X)	-0.00101	-0.00102	-0.00106
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00055	0.00055	0.00050
	(!A1 * !A2 * !X)	-0.00170	-0.00172	-0.00178

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00030	-0.00029	-0.00029
	(!A1 * !A2 * !X)	0.00093	0.00093	0.00092
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00033	-0.00032	-0.00032
	(!A1 * !A2 * !X)	0.00107	0.00106	0.00106
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00049	-0.00049	-0.00048
	(!A1 * !A2 * !X)	0.00180	0.00179	0.00178

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A1	A2	B1_N	Y
0	0	x	1
x	1	0	0
x	1	1	1
1	x	0	0
1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21bai_1	9.59040
sky130_fd_sc_hs__o21bai_2	14.38560
sky130_fd_sc_hs__o21bai_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__o21bai_1	0.00240	0.00272	0.00214	0.07602
sky130_fd_sc_hs__o21bai_2	0.00509	0.00472	0.00237	0.15109
sky130_fd_sc_hs__o21bai_4	0.00904	0.00938	0.00319	0.28918

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	0.00009	0.00012
sky130_fd_sc_hs__o21bai_2	0.00000	0.00015	0.00021
sky130_fd_sc_hs__o21bai_4	0.00000	0.00025	0.00035

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (FR)	0.63049	2.74359	14.27470
	A2->Y (FR)	0.57717	2.59391	13.71480
	B1_N->Y (RR)	0.24533	1.23989	5.52257
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.56653	2.42146	14.30120
	A2->Y (FR)	0.48128	2.24378	13.70800
	B1_N->Y (RR)	0.22040	1.14451	5.66856
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.55259	2.20219	14.28470
	A2->Y (FR)	0.46725	2.00050	13.69950
	B1_N->Y (RR)	0.30915	1.45345	8.58810

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.09650	0.78824	4.74326
	A2->Y (RF)	0.09130	0.77721	4.72170
	B1_N->Y (FF)	0.37518	1.36903	6.63590
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.09120	0.74112	4.73657
	A2->Y (RF)	0.08762	0.72861	4.72432
	B1_N->Y (FF)	0.44760	1.45597	7.11346
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.10246	0.71215	4.76816
	A2->Y (RF)	0.09222	0.69394	4.73649
	B1_N->Y (FF)	0.37358	1.34685	6.79468

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00031	0.00026	0.00024
	A1	0.00268	0.00263	0.00262
	A2	0.00030	0.00023	0.00021
	A2	0.00250	0.00242	0.00240
	B1_N	0.00367	0.00355	0.00349
	B1_N	0.00233	0.00222	0.00218
sky130_fd_sc_hs__o21bai_2	A1	0.00029	0.00017	0.00016
	A1	0.00507	0.00495	0.00493
	A2	0.00033	0.00021	0.00020
	A2	0.00424	0.00409	0.00409
	B1_N	0.00505	0.00498	0.00493
	B1_N	0.00387	0.00380	0.00377
sky130_fd_sc_hs__o21bai_4	A1	0.00057	0.00036	0.00034
	A1	0.00983	0.00959	0.00957
	A2	0.00049	0.00022	0.00022
	A2	0.00849	0.00821	0.00821
	B1_N	0.00681	0.00670	0.00673
	B1_N	0.00587	0.00576	0.00580

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00332	0.00328	0.00324
	A1	0.00094	0.00090	0.00086
	A2	0.00279	0.00278	0.00276
	A2	0.00056	0.00054	0.00053
	B1_N	0.00269	0.00248	0.00254
	B1_N	0.00405	0.00393	0.00389
sky130_fd_sc_hs__o21bai_2	A1	0.00654	0.00645	0.00638
	A1	0.00177	0.00167	0.00160
	A2	0.00514	0.00511	0.00511
	A2	0.00118	0.00114	0.00113
	B1_N	0.00512	0.00490	0.00491
	B1_N	0.00637	0.00625	0.00617
sky130_fd_sc_hs__o21bai_4	A1	0.01286	0.01268	0.01251
	A1	0.00367	0.00342	0.00331
	A2	0.01022	0.01015	0.01019
	A2	0.00213	0.00202	0.00205
	B1_N	0.00996	0.00981	0.00965
	B1_N	0.01108	0.01091	0.01076

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(A2 * B1_N * Y)	0.00081	0.00081	0.00080
	(A2 * B1_N * Y)	-0.00088	-0.00089	-0.00089
	(A2 * !B1_N * !Y)	0.00081	0.00081	0.00080
	(A2 * !B1_N * !Y)	-0.00088	-0.00089	-0.00089
	(!A2 * B1_N * Y)	0.00076	0.00076	0.00076
	(!A2 * B1_N * Y)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00166	0.00166	0.00165
	(A2 * B1_N * Y)	-0.00184	-0.00187	-0.00186
	(A2 * !B1_N * !Y)	0.00169	0.00169	0.00168
	(A2 * !B1_N * !Y)	-0.00181	-0.00184	-0.00183
	(!A2 * B1_N * Y)	0.00157	0.00158	0.00157
	(!A2 * B1_N * Y)	-0.00191	-0.00192	-0.00191
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00308	0.00309	0.00307
	(A2 * B1_N * Y)	-0.00356	-0.00362	-0.00359
	(A2 * !B1_N * !Y)	0.00312	0.00311	0.00309
	(A2 * !B1_N * !Y)	-0.00353	-0.00359	-0.00356
	(!A2 * B1_N * Y)	0.00292	0.00292	0.00290
	(!A2 * B1_N * Y)	-0.00373	-0.00373	-0.00371

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(A2 * B1_N * Y)	-0.00080	-0.00080	-0.00080
	(A2 * B1_N * Y)	0.00089	0.00089	0.00089
	(A2 * !B1_N * !Y)	-0.00080	-0.00081	-0.00080
	(A2 * !B1_N * !Y)	0.00089	0.00089	0.00089
	(!A2 * B1_N * Y)	-0.00075	-0.00076	-0.00076
	(!A2 * B1_N * Y)	0.00092	0.00092	0.00092
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00164	-0.00165	-0.00164
	(A2 * B1_N * Y)	0.00185	0.00187	0.00186
	(A2 * !B1_N * !Y)	-0.00167	-0.00168	-0.00168
	(A2 * !B1_N * !Y)	0.00182	0.00184	0.00183
	(!A2 * B1_N * Y)	-0.00155	-0.00158	-0.00157
	(!A2 * B1_N * Y)	0.00191	0.00193	0.00192
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00305	-0.00308	-0.00306
	(A2 * B1_N * Y)	0.00358	0.00362	0.00359
	(A2 * !B1_N * !Y)	-0.00308	-0.00310	-0.00309
	(A2 * !B1_N * !Y)	0.00354	0.00359	0.00356
	(!A2 * B1_N * Y)	-0.00288	-0.00292	-0.00290
	(!A2 * B1_N * Y)	0.00375	0.00375	0.00372

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(A1 * B1_N * Y)	0.00083	0.00082	0.00082
	(A1 * B1_N * Y)	-0.00096	-0.00098	-0.00097
	(A1 * !B1_N * !Y)	0.00095	0.00095	0.00095
	(A1 * !B1_N * !Y)	-0.00066	-0.00065	-0.00065
	(!A1 * B1_N * Y)	0.00078	0.00078	0.00078
	(!A1 * B1_N * Y)	-0.00101	-0.00101	-0.00101
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00150	0.00149	0.00149
	(A1 * B1_N * Y)	-0.00170	-0.00173	-0.00172
	(A1 * !B1_N * !Y)	0.00166	0.00166	0.00165
	(A1 * !B1_N * !Y)	-0.00118	-0.00117	-0.00117
	(!A1 * B1_N * Y)	0.00142	0.00143	0.00142
	(!A1 * B1_N * Y)	-0.00178	-0.00179	-0.00178
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00305	0.00308	0.00304
	(A1 * B1_N * Y)	-0.00357	-0.00361	-0.00359
	(A1 * !B1_N * !Y)	0.00350	0.00350	0.00348
	(A1 * !B1_N * !Y)	-0.00240	-0.00239	-0.00238
	(!A1 * B1_N * Y)	0.00287	0.00290	0.00288
	(!A1 * B1_N * Y)	-0.00372	-0.00374	-0.00373

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(A1 * B1_N * Y)	-0.00083	-0.00082	-0.00082
	(A1 * B1_N * Y)	0.00098	0.00098	0.00097
	(A1 * !B1_N * !Y)	-0.00094	-0.00094	-0.00095
	(A1 * !B1_N * !Y)	0.00067	0.00066	0.00065
	(!A1 * B1_N * Y)	-0.00077	-0.00078	-0.00078
	(!A1 * B1_N * Y)	0.00101	0.00101	0.00101
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00148	-0.00149	-0.00149
	(A1 * B1_N * Y)	0.00171	0.00173	0.00172
	(A1 * !B1_N * !Y)	-0.00163	-0.00163	-0.00165
	(A1 * !B1_N * !Y)	0.00121	0.00120	0.00118
	(!A1 * B1_N * Y)	-0.00140	-0.00143	-0.00142
	(!A1 * B1_N * Y)	0.00178	0.00180	0.00178
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00303	-0.00305	-0.00303
	(A1 * B1_N * Y)	0.00358	0.00361	0.00359
	(A1 * !B1_N * !Y)	-0.00339	-0.00341	-0.00348
	(A1 * !B1_N * !Y)	0.00247	0.00247	0.00240
	(!A1 * B1_N * Y)	-0.00285	-0.00290	-0.00288
	(!A1 * B1_N * Y)	0.00374	0.00376	0.00373

Passive power(pJ) for B1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(!A1 * !A2 * Y)	0.00289	0.00280	0.00274
	(!A1 * !A2 * Y)	0.00106	0.00096	0.00091
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00417	0.00407	0.00400
	(!A1 * !A2 * Y)	0.00207	0.00196	0.00190
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00502	0.00486	0.00478
	(!A1 * !A2 * Y)	0.00219	0.00202	0.00194

Passive power(pJ) for B1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	(!A1 * !A2 * Y)	0.00021	0.00013	0.00008
	(!A1 * !A2 * Y)	0.00206	0.00197	0.00192
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00054	0.00044	0.00037
	(!A1 * !A2 * Y)	0.00268	0.00257	0.00248
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00102	0.00090	0.00080
	(!A1 * !A2 * Y)	0.00392	0.00379	0.00366

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A1	A2	B1_N	X
0	0	x	0
x	1	0	1
x	1	1	0
1	x	0	1
1	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ba_1	12.78720
sky130_fd_sc_hs__o21ba_2	12.78720
sky130_fd_sc_hs__o21ba_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__o21ba_1	0.00219	0.00237	0.00194	0.18069
sky130_fd_sc_hs__o21ba_2	0.00229	0.00244	0.00207	0.36574
sky130_fd_sc_hs__o21ba_4	0.00459	0.00439	0.00253	0.70282

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.00013	0.00016
sky130_fd_sc_hs__o21ba_2	0.00000	0.00017	0.00019
sky130_fd_sc_hs__o21ba_4	0.00000	0.00030	0.00036

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (RR)	0.31279	1.70556	9.91942
	A2->X (RR)	0.29836	1.68530	9.84474
	B1_N->X (FR)	0.60407	2.31985	12.93860
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.29172	1.49639	9.97639
	A2->X (RR)	0.27471	1.47728	9.91165
	B1_N->X (FR)	0.60515	2.12617	13.02080
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.30134	1.37936	10.09800
	A2->X (RR)	0.29932	1.36374	10.02610
	B1_N->X (FR)	0.68848	2.09872	13.59450

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.95204	2.04789	8.25389
	A2->X (FF)	0.89804	1.89422	7.69331
	B1_N->X (RF)	0.42564	1.10326	3.90456
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	1.20116	2.32302	8.72944
	A2->X (FF)	1.14243	2.16027	8.21296
	B1_N->X (RF)	0.51064	1.20102	4.13596
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	1.14322	2.23235	8.63673
	A2->X (FF)	1.06932	2.05488	8.09524
	B1_N->X (RF)	0.52273	1.18102	4.05183

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00505	0.00506	0.00503
	A1	0.00285	0.00286	0.00284
	A2	0.00453	0.00452	0.00447
	A2	0.00253	0.00251	0.00247
	B1_N	0.00468	0.00466	0.00459
	B1_N	0.00590	0.00588	0.00581
sky130_fd_sc_hs__o21ba_2	A1	0.00631	0.00641	0.00643
	A1	0.00404	0.00414	0.00417
	A2	0.00577	0.00586	0.00585
	A2	0.00370	0.00379	0.00384
	B1_N	0.00580	0.00587	0.00585
	B1_N	0.00715	0.00721	0.00721
sky130_fd_sc_hs__o21ba_4	A1	0.01213	0.01231	0.01240
	A1	0.00765	0.00783	0.00793
	A2	0.01078	0.01096	0.01100
	A2	0.00705	0.00722	0.00727
	B1_N	0.01078	0.01099	0.01111
	B1_N	0.01214	0.01236	0.01251

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00205	0.00209	0.00207
	A1	0.00423	0.00427	0.00423
	A2	0.00206	0.00206	0.00263
	A2	0.00402	0.00403	0.00399
	B1_N	0.00537	0.00519	0.00506
	B1_N	0.00416	0.00399	0.00386
sky130_fd_sc_hs__o21ba_2	A1	0.00318	0.00333	0.00334
	A1	0.00542	0.00558	0.00557
	A2	0.00318	0.00329	0.00330
	A2	0.00520	0.00532	0.00530
	B1_N	0.00684	0.00673	0.00656
	B1_N	0.00552	0.00541	0.00524
sky130_fd_sc_hs__o21ba_4	A1	0.00603	0.00635	0.00639
	A1	0.01048	0.01079	0.01083
	A2	0.00622	0.00647	0.00664
	A2	0.00987	0.01014	0.01017
	B1_N	0.01133	0.01142	0.01122
	B1_N	0.01001	0.01011	0.00991

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A2 * B1_N * !X)	0.00070	0.00070	0.00070
	(A2 * B1_N * !X)	-0.00083	-0.00084	-0.00084
	(A2 * !B1_N * X)	0.00070	0.00070	0.00070
	(A2 * !B1_N * X)	-0.00083	-0.00084	-0.00084
	(!A2 * B1_N * !X)	0.00066	0.00066	0.00066
	(!A2 * B1_N * !X)	-0.00086	-0.00086	-0.00086
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00080	0.00081	0.00080
	(A2 * B1_N * !X)	-0.00081	-0.00082	-0.00082
	(A2 * !B1_N * X)	0.00081	0.00081	0.00081
	(A2 * !B1_N * X)	-0.00081	-0.00082	-0.00081
	(!A2 * B1_N * !X)	0.00076	0.00077	0.00076
	(!A2 * B1_N * !X)	-0.00084	-0.00084	-0.00084
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00157	0.00159	0.00157
	(A2 * B1_N * !X)	-0.00164	-0.00167	-0.00166
	(A2 * !B1_N * X)	0.00159	0.00161	0.00158
	(A2 * !B1_N * X)	-0.00162	-0.00165	-0.00164
	(!A2 * B1_N * !X)	0.00148	0.00150	0.00149
	(!A2 * B1_N * !X)	-0.00171	-0.00172	-0.00171

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A2 * B1_N * !X)	-0.00070	-0.00070	-0.00070
	(A2 * B1_N * !X)	0.00085	0.00084	0.00084
	(A2 * !B1_N * X)	-0.00070	-0.00070	-0.00070
	(A2 * !B1_N * X)	0.00084	0.00084	0.00084
	(!A2 * B1_N * !X)	-0.00065	-0.00066	-0.00066
	(!A2 * B1_N * !X)	0.00086	0.00086	0.00086
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00080	-0.00080	-0.00080
	(A2 * B1_N * !X)	0.00083	0.00082	0.00082
	(A2 * !B1_N * X)	-0.00081	-0.00081	-0.00080
	(A2 * !B1_N * X)	0.00082	0.00082	0.00081
	(!A2 * B1_N * !X)	-0.00075	-0.00077	-0.00076
	(!A2 * B1_N * !X)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00156	-0.00157	-0.00157
	(A2 * B1_N * !X)	0.00165	0.00167	0.00166
	(A2 * !B1_N * X)	-0.00158	-0.00159	-0.00158
	(A2 * !B1_N * X)	0.00163	0.00165	0.00164
	(!A2 * B1_N * !X)	-0.00147	-0.00150	-0.00149
	(!A2 * B1_N * !X)	0.00172	0.00173	0.00172

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A1 * B1_N * !X)	0.00074	0.00075	0.00074
	(A1 * B1_N * !X)	-0.00083	-0.00084	-0.00084
	(A1 * !B1_N * X)	0.00079	0.00079	0.00079
	(A1 * !B1_N * X)	-0.00062	-0.00062	-0.00061
	(!A1 * B1_N * !X)	0.00070	0.00071	0.00070
	(!A1 * B1_N * !X)	-0.00086	-0.00087	-0.00086
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00082	0.00083	0.00082
	(A1 * B1_N * !X)	-0.00082	-0.00083	-0.00083
	(A1 * !B1_N * X)	0.00090	0.00089	0.00089
	(A1 * !B1_N * X)	-0.00059	-0.00058	-0.00058
	(!A1 * B1_N * !X)	0.00078	0.00079	0.00078
	(!A1 * B1_N * !X)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00132	0.00133	0.00131
	(A1 * B1_N * !X)	-0.00164	-0.00167	-0.00166
	(A1 * !B1_N * X)	0.00149	0.00150	0.00149
	(A1 * !B1_N * X)	-0.00112	-0.00113	-0.00112
	(!A1 * B1_N * !X)	0.00123	0.00124	0.00123
	(!A1 * B1_N * !X)	-0.00173	-0.00173	-0.00173

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A1 * B1_N * !X)	-0.00074	-0.00074	-0.00074
	(A1 * B1_N * !X)	0.00084	0.00084	0.00084
	(A1 * !B1_N * X)	-0.00077	-0.00078	-0.00079
	(A1 * !B1_N * X)	0.00063	0.00063	0.00062
	(!A1 * B1_N * !X)	-0.00069	-0.00071	-0.00070
	(!A1 * B1_N * !X)	0.00086	0.00087	0.00086
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00082	-0.00083	-0.00082
	(A1 * B1_N * !X)	0.00083	0.00083	0.00083
	(A1 * !B1_N * X)	-0.00087	-0.00088	-0.00089
	(A1 * !B1_N * X)	0.00060	0.00060	0.00058
	(!A1 * B1_N * !X)	-0.00077	-0.00079	-0.00078
	(!A1 * B1_N * !X)	0.00085	0.00085	0.00085
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00132	-0.00132	-0.00131
	(A1 * B1_N * !X)	0.00167	0.00167	0.00166
	(A1 * !B1_N * X)	-0.00146	-0.00147	-0.00149
	(A1 * !B1_N * X)	0.00115	0.00115	0.00113
	(!A1 * B1_N * !X)	-0.00121	-0.00124	-0.00123
	(!A1 * B1_N * !X)	0.00173	0.00174	0.00173

Passive power(pJ) for B1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(!A1 * !A2 * !X)	0.00266	0.00257	0.00252
	(!A1 * !A2 * !X)	0.00097	0.00087	0.00083
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00293	0.00284	0.00278
	(!A1 * !A2 * !X)	0.00113	0.00104	0.00099
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00406	0.00396	0.00389
	(!A1 * !A2 * !X)	0.00184	0.00172	0.00166

Passive power(pJ) for B1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(!A1 * !A2 * !X)	0.00027	0.00021	0.00017
	(!A1 * !A2 * !X)	0.00198	0.00191	0.00187
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00023	0.00015	0.00011
	(!A1 * !A2 * !X)	0.00203	0.00196	0.00191
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00039	0.00030	0.00024
	(!A1 * !A2 * !X)	0.00264	0.00254	0.00247

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	B2	C1	Y
0	0	x	x	x	1
x	1	0	0	x	1
x	1	x	1	0	1
x	1	x	1	1	0
x	1	1	x	0	1
x	1	1	x	1	0
1	x	0	0	x	1
1	x	x	1	0	1
1	x	x	1	1	0
1	x	1	x	0	1
1	x	1	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221ai_1	12.78720
sky130_fd_sc_hs__o221ai_2	19.18080
sky130_fd_sc_hs__o221ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__o221ai_1	0.00248	0.00267	0.00261	0.00256	0.00264	0.07405
sky130_fd_sc_hs__o221ai_2	0.00509	0.00469	0.00537	0.00470	0.00482	0.14747
sky130_fd_sc_hs__o221ai_4	0.00960	0.00931	0.00978	0.00927	0.00960	0.28886

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.00007	0.00013
sky130_fd_sc_hs__o221ai_2	0.00000	0.00014	0.00026
sky130_fd_sc_hs__o221ai_4	0.00000	0.00029	0.00053

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (FR)	0.98244	3.09076	14.48130
	A2->Y (FR)	0.91623	2.92390	13.90290
	B1->Y (FR)	0.73423	2.81304	14.15760
	B2->Y (FR)	0.66018	2.64508	13.58290
	C1->Y (FR)	0.22022	1.54882	9.42058
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.85115	2.71117	14.47790
	A2->Y (FR)	0.76578	2.53348	13.88610
	B1->Y (FR)	0.63770	2.47129	14.20960
	B2->Y (FR)	0.54299	2.28545	13.60790
	C1->Y (FR)	0.17055	1.40969	9.41191
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.80863	2.45741	14.42780
	A2->Y (FR)	0.72883	2.28485	13.84900
	B1->Y (FR)	0.60538	2.24346	14.29760
	B2->Y (FR)	0.51906	2.04935	13.70720
	C1->Y (FR)	0.16443	1.33403	9.44616

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.15402	0.88512	4.89947
	A2->Y (RF)	0.14572	0.87200	4.87737
	B1->Y (RF)	0.14117	0.91846	5.26377
	B2->Y (RF)	0.12928	0.89715	5.20951
	C1->Y (RF)	0.11761	0.91436	5.32111
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.13581	0.82325	4.90332
	A2->Y (RF)	0.12953	0.81217	4.89649
	B1->Y (RF)	0.11852	0.84575	5.28608
	B2->Y (RF)	0.11101	0.83849	5.33502
	C1->Y (RF)	0.08446	0.81715	5.37331
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.14313	0.79457	4.95358
	A2->Y (RF)	0.13482	0.77994	4.94004
	B1->Y (RF)	0.12323	0.82008	5.42464
	B2->Y (RF)	0.11311	0.80069	5.41430
	C1->Y (RF)	0.08793	0.78795	5.55937

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00110	0.00102	0.00099
	A1	0.00513	0.00504	0.00500
	A2	0.00113	0.00104	0.00100
	A2	0.00487	0.00476	0.00472
	B1	0.00038	0.00028	0.00026
	B1	0.00390	0.00380	0.00377
	B2	0.00041	0.00030	0.00028
	B2	0.00353	0.00343	0.00341
	C1	-0.00020	-0.00029	-0.00030
	C1	0.00286	0.00276	0.00277
sky130_fd_sc_hs__o221ai_2	A1	0.00169	0.00153	0.00148
	A1	0.00938	0.00921	0.00912
	A2	0.00173	0.00155	0.00150
	A2	0.00858	0.00840	0.00834
	B1	0.00040	0.00019	0.00016
	B1	0.00719	0.00699	0.00695
	B2	0.00046	0.00026	0.00023
	B2	0.00639	0.00616	0.00614
	C1	-0.00079	-0.00092	-0.00093
	C1	0.00485	0.00471	0.00475

sky130_fd_sc_hs__o221ai_4	**A1**	0.00287	0.00256	0.00248
	A1	0.01804	0.01772	0.01757
	A2	0.00297	0.00261	0.00252
	A2	0.01660	0.01622	0.01612
	B1	0.00057	0.00016	0.00012
	B1	0.01387	0.01344	0.01341
	B2	0.00058	0.00015	0.00013
	B2	0.01243	0.01199	0.01198
	C1	-0.00144	-0.00174	-0.00170
	C1	0.00976	0.00947	0.00955

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.00545	0.00542	0.00534
	A1	0.00125	0.00121	0.00116
	A2	0.00482	0.00480	0.00476
	A2	0.00089	0.00087	0.00083
	B1	0.00479	0.00476	0.00469
	B1	0.00128	0.00123	0.00118
	B2	0.00415	0.00413	0.00409
	B2	0.00100	0.00098	0.00093
	C1	0.00429	0.00425	0.00420
	C1	0.00130	0.00125	0.00119

sky130_fd_sc_hs__o221ai_2	**A1**	0.01000	0.00991	0.00978
	A1	0.00199	0.00189	0.00178
	A2	0.00863	0.00859	0.00853
	A2	0.00138	0.00134	0.00127
	B1	0.00883	0.00874	0.00863
	B1	0.00203	0.00193	0.00183
	B2	0.00735	0.00732	0.00725
	B2	0.00137	0.00133	0.00127
	C1	0.00755	0.00745	0.00737
	C1	0.00203	0.00194	0.00184
sky130_fd_sc_hs__o221ai_4	**A1**	0.01975	0.01957	0.01937
	A1	0.00396	0.00376	0.00357
	A2	0.01709	0.01699	0.01686
	A2	0.00268	0.00256	0.00249
	B1	0.01726	0.01707	0.01692
	B1	0.00400	0.00379	0.00362
	B2	0.01467	0.01456	0.01452
	B2	0.00273	0.00263	0.00254
	C1	0.01489	0.01469	0.01450
	C1	0.00397	0.00376	0.00361

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B2 * C1 * !Y)**	0.00086	0.00086	0.00086
	(A2 * B2 * C1 * !Y)	-0.00090	-0.00091	-0.00091
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00086	0.00086	0.00086
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00090	-0.00091	-0.00091
	(A2 * B1 * !B2 * C1 * !Y)	0.00086	0.00086	0.00086
	(A2 * B1 * !B2 * C1 * !Y)	-0.00090	-0.00091	-0.00091
	(A2 * !B1 * !B2 * Y)	0.00086	0.00086	0.00086
	(A2 * !B1 * !B2 * Y)	-0.00090	-0.00091	-0.00091
	(!A2 * B2 * !C1 * Y)	0.00076	0.00076	0.00076
	(!A2 * B2 * !C1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * B1 * !B2 * !C1 * Y)	0.00077	0.00077	0.00077
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * !B1 * !B2 * C1 * Y)	0.00079	0.00079	0.00079
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00079	0.00079	0.00079
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00093	-0.00093	-0.00093

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00166	0.00165	0.00164
	(A2 * B2 * C1 * !Y)	-0.00178	-0.00181	-0.00179
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00158	0.00158	0.00157
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00185	-0.00188	-0.00187
	(A2 * B1 * !B2 * C1 * !Y)	0.00166	0.00165	0.00164
	(A2 * B1 * !B2 * C1 * !Y)	-0.00178	-0.00181	-0.00179
	(A2 * !B1 * !B2 * Y)	0.00158	0.00159	0.00157
	(A2 * !B1 * !B2 * Y)	-0.00185	-0.00188	-0.00187
	(!A2 * B2 * !C1 * Y)	0.00140	0.00141	0.00140
	(!A2 * B2 * !C1 * Y)	-0.00192	-0.00192	-0.00192
	(!A2 * B1 * !B2 * !C1 * Y)	0.00142	0.00142	0.00142
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00192	-0.00192	-0.00192
	(!A2 * !B1 * !B2 * C1 * Y)	0.00146	0.00146	0.00145
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00192	-0.00193	-0.00192
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00146	0.00146	0.00145
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00192	-0.00193	-0.00192

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00326	0.00325	0.00323
	(A2 * B2 * C1 * !Y)	-0.00349	-0.00355	-0.00352
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00320	0.00321	0.00319
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00354	-0.00360	-0.00357
	(A2 * B1 * !B2 * C1 * !Y)	0.00326	0.00325	0.00323
	(A2 * B1 * !B2 * C1 * !Y)	-0.00349	-0.00355	-0.00352
	(A2 * !B1 * !B2 * Y)	0.00321	0.00321	0.00319
	(A2 * !B1 * !B2 * Y)	-0.00354	-0.00360	-0.00357
	(!A2 * B2 * !C1 * Y)	0.00282	0.00283	0.00281
	(!A2 * B2 * !C1 * Y)	-0.00368	-0.00370	-0.00368
	(!A2 * B1 * !B2 * !C1 * Y)	0.00287	0.00286	0.00285
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00369	-0.00369	-0.00368
	(!A2 * !B1 * !B2 * C1 * Y)	0.00291	0.00295	0.00293
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00367	-0.00370	-0.00368
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00294	0.00295	0.00293
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00369	-0.00370	-0.00368

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B2 * C1 * !Y)**	-0.00086	-0.00086	-0.00086
	(A2 * B2 * C1 * !Y)	0.00092	0.00091	0.00091
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00086	-0.00086	-0.00086
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00092	0.00091	0.00091
	(A2 * B1 * !B2 * C1 * !Y)	-0.00086	-0.00086	-0.00086
	(A2 * B1 * !B2 * C1 * !Y)	0.00092	0.00091	0.00091
	(A2 * !B1 * !B2 * Y)	-0.00086	-0.00086	-0.00086
	(A2 * !B1 * !B2 * Y)	0.00092	0.00091	0.00091
	(!A2 * B2 * !C1 * Y)	-0.00074	-0.00076	-0.00076
	(!A2 * B2 * !C1 * Y)	0.00094	0.00094	0.00093
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00076	-0.00077	-0.00077
	(!A2 * B1 * !B2 * !C1 * Y)	0.00094	0.00094	0.00093
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00078	-0.00079	-0.00079
	(!A2 * !B1 * !B2 * C1 * Y)	0.00094	0.00094	0.00093
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00078	-0.00079	-0.00079
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00094	0.00094	0.00093

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00165	-0.00165	-0.00164
	(A2 * B2 * C1 * !Y)	0.00181	0.00181	0.00179
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00157	-0.00158	-0.00157
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00188	0.00188	0.00187
	(A2 * B1 * !B2 * C1 * !Y)	-0.00165	-0.00165	-0.00164
	(A2 * B1 * !B2 * C1 * !Y)	0.00181	0.00181	0.00179
	(A2 * !B1 * !B2 * Y)	-0.00156	-0.00158	-0.00157
	(A2 * !B1 * !B2 * Y)	0.00185	0.00188	0.00187
	(!A2 * B2 * !C1 * Y)	-0.00134	-0.00141	-0.00140
	(!A2 * B2 * !C1 * Y)	0.00192	0.00193	0.00192
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00137	-0.00142	-0.00142
	(!A2 * B1 * !B2 * !C1 * Y)	0.00192	0.00193	0.00192
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00142	-0.00146	-0.00145
	(!A2 * !B1 * !B2 * C1 * Y)	0.00192	0.00195	0.00192
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00142	-0.00146	-0.00145
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00192	0.00194	0.00192

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00323	-0.00324	-0.00323
	(A2 * B2 * C1 * !Y)	0.00353	0.00355	0.00352
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00319	-0.00319	-0.00318
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00359	0.00360	0.00357
	(A2 * B1 * !B2 * C1 * !Y)	-0.00324	-0.00324	-0.00323
	(A2 * B1 * !B2 * C1 * !Y)	0.00354	0.00355	0.00352
	(A2 * !B1 * !B2 * Y)	-0.00317	-0.00319	-0.00318
	(A2 * !B1 * !B2 * Y)	0.00356	0.00360	0.00357
	(!A2 * B2 * !C1 * Y)	-0.00270	-0.00283	-0.00281
	(!A2 * B2 * !C1 * Y)	0.00368	0.00372	0.00369
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00276	-0.00286	-0.00285
	(!A2 * B1 * !B2 * !C1 * Y)	0.00370	0.00372	0.00369
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00286	-0.00295	-0.00293
	(!A2 * !B1 * !B2 * C1 * Y)	0.00369	0.00374	0.00369
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00286	-0.00295	-0.00293
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00369	0.00372	0.00369

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A1 * B2 * C1 * !Y)**	0.00092	0.00091	0.00091
	(A1 * B2 * C1 * !Y)	-0.00064	-0.00064	-0.00064
	(A1 * B2 * !C1 * Y)	0.00077	0.00078	0.00077
	(A1 * B2 * !C1 * Y)	-0.00096	-0.00098	-0.00097
	(A1 * B1 * !B2 * C1 * !Y)	0.00092	0.00091	0.00091
	(A1 * B1 * !B2 * C1 * !Y)	-0.00064	-0.00064	-0.00064
	(A1 * B1 * !B2 * !C1 * Y)	0.00078	0.00078	0.00077
	(A1 * B1 * !B2 * !C1 * Y)	-0.00097	-0.00098	-0.00097
	(A1 * !B1 * !B2 * C1 * Y)	0.00077	0.00078	0.00077
	(A1 * !B1 * !B2 * C1 * Y)	-0.00097	-0.00097	-0.00097
	(A1 * !B1 * !B2 * !C1 * Y)	0.00078	0.00078	0.00077
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00097	-0.00098	-0.00097
	(!A1 * B2 * !C1 * Y)	0.00069	0.00069	0.00069
	(!A1 * B2 * !C1 * Y)	-0.00100	-0.00100	-0.00100
	(!A1 * B1 * !B2 * !C1 * Y)	0.00071	0.00070	0.00070
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00100	-0.00100	-0.00100
	(!A1 * !B1 * !B2 * C1 * Y)	0.00071	0.00072	0.00071
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00100	-0.00100	-0.00100
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00071	0.00072	0.00071
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00100	-0.00100	-0.00100

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00164	0.00165	0.00165
	(A1 * B2 * C1 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * B2 * !C1 * Y)	0.00148	0.00151	0.00149
	(A1 * B2 * !C1 * Y)	-0.00169	-0.00173	-0.00172
	(A1 * B1 * !B2 * C1 * !Y)	0.00164	0.00165	0.00165
	(A1 * B1 * !B2 * C1 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * B1 * !B2 * !C1 * Y)	0.00150	0.00151	0.00149
	(A1 * B1 * !B2 * !C1 * Y)	-0.00170	-0.00173	-0.00172
	(A1 * !B1 * !B2 * C1 * Y)	0.00150	0.00150	0.00149
	(A1 * !B1 * !B2 * C1 * Y)	-0.00171	-0.00172	-0.00171
	(A1 * !B1 * !B2 * !C1 * Y)	0.00150	0.00151	0.00149
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00171	-0.00173	-0.00172
	(!A1 * B2 * !C1 * Y)	0.00131	0.00133	0.00132
	(!A1 * B2 * !C1 * Y)	-0.00177	-0.00178	-0.00178
	(!A1 * B1 * !B2 * !C1 * Y)	0.00133	0.00135	0.00134
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00177	-0.00178	-0.00178
	(!A1 * !B1 * !B2 * C1 * Y)	0.00138	0.00138	0.00138
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00177	-0.00178	-0.00178
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00137	0.00138	0.00137
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00177	-0.00178	-0.00178

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00332	0.00334	0.00333
	(A1 * B2 * C1 * !Y)	-0.00233	-0.00234	-0.00233
	(A1 * B2 * !C1 * Y)	0.00289	0.00293	0.00289
	(A1 * B2 * !C1 * Y)	-0.00350	-0.00356	-0.00354
	(A1 * B1 * !B2 * C1 * !Y)	0.00332	0.00334	0.00333
	(A1 * B1 * !B2 * C1 * !Y)	-0.00232	-0.00234	-0.00233
	(A1 * B1 * !B2 * !C1 * Y)	0.00293	0.00293	0.00289
	(A1 * B1 * !B2 * !C1 * Y)	-0.00354	-0.00356	-0.00355
	(A1 * !B1 * !B2 * C1 * Y)	0.00290	0.00293	0.00289
	(A1 * !B1 * !B2 * C1 * Y)	-0.00351	-0.00356	-0.00354
	(A1 * !B1 * !B2 * !C1 * Y)	0.00293	0.00293	0.00290
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00354	-0.00357	-0.00355
	(!A1 * B2 * !C1 * Y)	0.00258	0.00259	0.00258
	(!A1 * B2 * !C1 * Y)	-0.00366	-0.00367	-0.00366
	(!A1 * B1 * !B2 * !C1 * Y)	0.00261	0.00263	0.00262
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00365	-0.00367	-0.00366
	(!A1 * !B1 * !B2 * C1 * Y)	0.00269	0.00269	0.00268
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00366	-0.00367	-0.00366
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00268	0.00269	0.00268
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00366	-0.00367	-0.00366

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A1 * B2 * C1 * !Y)**	-0.00089	-0.00090	-0.00091
	(A1 * B2 * C1 * !Y)	0.00065	0.00065	0.00064
	(A1 * B2 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * B2 * !C1 * Y)	0.00098	0.00098	0.00097
	(A1 * B1 * !B2 * C1 * !Y)	-0.00089	-0.00090	-0.00091
	(A1 * B1 * !B2 * C1 * !Y)	0.00065	0.00065	0.00064
	(A1 * B1 * !B2 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * B1 * !B2 * !C1 * Y)	0.00098	0.00098	0.00097
	(A1 * !B1 * !B2 * C1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !B2 * C1 * Y)	0.00098	0.00097	0.00097
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !B2 * !C1 * Y)	0.00098	0.00098	0.00097
	(!A1 * B2 * !C1 * Y)	-0.00067	-0.00069	-0.00069
	(!A1 * B2 * !C1 * Y)	0.00101	0.00101	0.00100
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00068	-0.00070	-0.00070
	(!A1 * B1 * !B2 * !C1 * Y)	0.00100	0.00101	0.00100
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00070	-0.00072	-0.00071
	(!A1 * !B1 * !B2 * C1 * Y)	0.00100	0.00101	0.00100
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00070	-0.00072	-0.00071
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00100	0.00101	0.00100

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00161	-0.00162	-0.00165
	(A1 * B2 * C1 * !Y)	0.00120	0.00120	0.00117
	(A1 * B2 * !C1 * Y)	-0.00148	-0.00149	-0.00148
	(A1 * B2 * !C1 * Y)	0.00172	0.00173	0.00172
	(A1 * B1 * !B2 * C1 * !Y)	-0.00161	-0.00162	-0.00165
	(A1 * B1 * !B2 * C1 * !Y)	0.00120	0.00120	0.00117
	(A1 * B1 * !B2 * !C1 * Y)	-0.00147	-0.00149	-0.00148
	(A1 * B1 * !B2 * !C1 * Y)	0.00170	0.00173	0.00172
	(A1 * !B1 * !B2 * C1 * Y)	-0.00148	-0.00149	-0.00148
	(A1 * !B1 * !B2 * C1 * Y)	0.00171	0.00172	0.00171
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00148	-0.00149	-0.00148
	(A1 * !B1 * !B2 * !C1 * Y)	0.00171	0.00173	0.00172
	(!A1 * B2 * !C1 * Y)	-0.00127	-0.00133	-0.00132
	(!A1 * B2 * !C1 * Y)	0.00177	0.00179	0.00178
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00130	-0.00135	-0.00134
	(!A1 * B1 * !B2 * !C1 * Y)	0.00178	0.00179	0.00178
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00134	-0.00138	-0.00138
	(!A1 * !B1 * !B2 * C1 * Y)	0.00177	0.00179	0.00178
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00134	-0.00138	-0.00137
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00177	0.00179	0.00178

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00325	-0.00327	-0.00333
	(A1 * B2 * C1 * !Y)	0.00240	0.00240	0.00234
	(A1 * B2 * !C1 * Y)	-0.00289	-0.00290	-0.00289
	(A1 * B2 * !C1 * Y)	0.00355	0.00356	0.00354
	(A1 * B1 * !B2 * C1 * !Y)	-0.00326	-0.00327	-0.00333
	(A1 * B1 * !B2 * C1 * !Y)	0.00240	0.00240	0.00234
	(A1 * B1 * !B2 * !C1 * Y)	-0.00290	-0.00290	-0.00289
	(A1 * B1 * !B2 * !C1 * Y)	0.00356	0.00356	0.00355
	(A1 * !B1 * !B2 * C1 * Y)	-0.00288	-0.00290	-0.00289
	(A1 * !B1 * !B2 * C1 * Y)	0.00353	0.00356	0.00354
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00288	-0.00290	-0.00289
	(A1 * !B1 * !B2 * !C1 * Y)	0.00354	0.00357	0.00355
	(!A1 * B2 * !C1 * Y)	-0.00248	-0.00259	-0.00258
	(!A1 * B2 * !C1 * Y)	0.00366	0.00369	0.00367
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00253	-0.00263	-0.00262
	(!A1 * B1 * !B2 * !C1 * Y)	0.00367	0.00369	0.00367
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00262	-0.00269	-0.00268
	(!A1 * !B1 * !B2 * C1 * Y)	0.00366	0.00369	0.00367
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00262	-0.00269	-0.00268
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00366	0.00369	0.00367

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B2 * C1 * !Y)**	0.00090	0.00091	0.00090
	(A2 * B2 * C1 * !Y)	-0.00087	-0.00089	-0.00088
	(A2 * !B2 * !C1 * Y)	0.00077	0.00077	0.00077
	(A2 * !B2 * !C1 * Y)	-0.00099	-0.00100	-0.00099
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00081	0.00082	0.00081
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00096	-0.00098	-0.00097
	(A1 * !A2 * B2 * C1 * !Y)	0.00090	0.00091	0.00090
	(A1 * !A2 * B2 * C1 * !Y)	-0.00087	-0.00088	-0.00088
	(A1 * !A2 * !B2 * !C1 * Y)	0.00077	0.00077	0.00077
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00099	-0.00100	-0.00099
	(!A1 * !A2 * B2 * C1 * Y)	0.00044	0.00044	0.00044
	(!A1 * !A2 * B2 * C1 * Y)	-0.00096	-0.00098	-0.00097
	(!A1 * !A2 * B2 * !C1 * Y)	0.00049	0.00050	0.00049
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00096	-0.00098	-0.00097
	(!A1 * !A2 * !B2 * C1 * Y)	0.00045	0.00045	0.00046
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00099	-0.00099	-0.00098
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00052	0.00052	0.00052
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00100	-0.00100	-0.00100

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00177	0.00177	0.00176
	(A2 * B2 * C1 * !Y)	-0.00172	-0.00175	-0.00174
	(A2 * !B2 * !C1 * Y)	0.00147	0.00148	0.00146
	(A2 * !B2 * !C1 * Y)	-0.00197	-0.00198	-0.00197
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00159	0.00159	0.00158
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00191	-0.00193	-0.00192
	(A1 * !A2 * B2 * C1 * !Y)	0.00177	0.00177	0.00176
	(A1 * !A2 * B2 * C1 * !Y)	-0.00172	-0.00175	-0.00174
	(A1 * !A2 * !B2 * !C1 * Y)	0.00146	0.00146	0.00146
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00197	-0.00197	-0.00197
	(!A1 * !A2 * B2 * C1 * Y)	0.00081	0.00081	0.00081
	(!A1 * !A2 * B2 * C1 * Y)	-0.00191	-0.00194	-0.00193
	(!A1 * !A2 * B2 * !C1 * Y)	0.00091	0.00091	0.00091
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00191	-0.00194	-0.00192
	(!A1 * !A2 * !B2 * C1 * Y)	0.00085	0.00085	0.00085
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00196	-0.00196	-0.00194
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00096	0.00096	0.00096
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00197	-0.00197	-0.00197

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00329	0.00332	0.00330
	(A2 * B2 * C1 * !Y)	-0.00337	-0.00348	-0.00344
	(A2 * !B2 * !C1 * Y)	0.00282	0.00284	0.00282
	(A2 * !B2 * !C1 * Y)	-0.00378	-0.00381	-0.00379
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00304	0.00309	0.00306
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00362	-0.00372	-0.00368
	(A1 * !A2 * B2 * C1 * !Y)	0.00329	0.00332	0.00329
	(A1 * !A2 * B2 * C1 * !Y)	-0.00337	-0.00345	-0.00344
	(A1 * !A2 * !B2 * !C1 * Y)	0.00281	0.00281	0.00281
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00378	-0.00379	-0.00379
	(!A1 * !A2 * B2 * C1 * Y)	0.00153	0.00153	0.00152
	(!A1 * !A2 * B2 * C1 * Y)	-0.00367	-0.00373	-0.00370
	(!A1 * !A2 * B2 * !C1 * Y)	0.00170	0.00172	0.00171
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00363	-0.00373	-0.00369
	(!A1 * !A2 * !B2 * C1 * Y)	0.00158	0.00160	0.00160
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00376	-0.00378	-0.00374
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00179	0.00181	0.00180
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00379	-0.00381	-0.00379

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B2 * C1 * !Y)**	-0.00090	-0.00090	-0.00090
	(A2 * B2 * C1 * !Y)	0.00089	0.00089	0.00088
	(A2 * !B2 * !C1 * Y)	-0.00075	-0.00077	-0.00077
	(A2 * !B2 * !C1 * Y)	0.00100	0.00100	0.00100
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00081	-0.00081	-0.00081
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00097	0.00098	0.00097
	(A1 * !A2 * B2 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * !A2 * B2 * C1 * !Y)	0.00089	0.00088	0.00088
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00075	-0.00077	-0.00077
	(A1 * !A2 * !B2 * !C1 * Y)	0.00099	0.00100	0.00100
	(!A1 * !A2 * B2 * C1 * Y)	-0.00043	-0.00043	-0.00044
	(!A1 * !A2 * B2 * C1 * Y)	0.00098	0.00099	0.00097
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * B2 * !C1 * Y)	0.00098	0.00098	0.00097
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !B2 * C1 * Y)	0.00102	0.00101	0.00100
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00100	0.00100	0.00100

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00176	-0.00177	-0.00176
	(A2 * B2 * C1 * !Y)	0.00173	0.00175	0.00174
	(A2 * !B2 * !C1 * Y)	-0.00144	-0.00148	-0.00146
	(A2 * !B2 * !C1 * Y)	0.00198	0.00199	0.00197
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00158	-0.00159	-0.00158
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00192	0.00193	0.00192
	(A1 * !A2 * B2 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(A1 * !A2 * B2 * C1 * !Y)	0.00173	0.00175	0.00174
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00143	-0.00146	-0.00146
	(A1 * !A2 * !B2 * !C1 * Y)	0.00198	0.00199	0.00197
	(!A1 * !A2 * B2 * C1 * Y)	-0.00079	-0.00079	-0.00080
	(!A1 * !A2 * B2 * C1 * Y)	0.00198	0.00197	0.00193
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00091	-0.00091	-0.00091
	(!A1 * !A2 * B2 * !C1 * Y)	0.00194	0.00194	0.00192
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00078	-0.00079	-0.00081
	(!A1 * !A2 * !B2 * C1 * Y)	0.00202	0.00203	0.00198
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00096	-0.00096	-0.00096
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00197	0.00198	0.00197

	(A2 * B2 * C1 * !Y)	-0.00329	-0.00331	-0.00330
	(A2 * B2 * C1 * !Y)	0.00344	0.00348	0.00344
	(A2 * !B2 * !C1 * Y)	-0.00275	-0.00284	-0.00282
	(A2 * !B2 * !C1 * Y)	0.00378	0.00383	0.00380
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00304	-0.00307	-0.00306
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00371	0.00372	0.00368
	(A1 * !A2 * B2 * C1 * !Y)	-0.00329	-0.00330	-0.00329
	(A1 * !A2 * B2 * C1 * !Y)	0.00343	0.00345	0.00344
sky130_fd_sc_hs__o221ai_4	**(A1 * !A2 * !B2 * !C1 * Y)**	-0.00275	-0.00281	-0.00281
	(A1 * !A2 * !B2 * !C1 * Y)	0.00382	0.00379	0.00380
	(!A1 * !A2 * B2 * C1 * Y)	-0.00148	-0.00149	-0.00151
	(!A1 * !A2 * B2 * C1 * Y)	0.00378	0.00379	0.00370
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00170	-0.00172	-0.00171
	(!A1 * !A2 * B2 * !C1 * Y)	0.00371	0.00373	0.00369
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00148	-0.00150	-0.00152
	(!A1 * !A2 * !B2 * C1 * Y)	0.00389	0.00393	0.00381
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00179	-0.00181	-0.00180
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00382	0.00385	0.00380

Passive power(pJ) for B2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B1 * C1 * !Y)**	0.00089	0.00089	0.00089
	(A2 * B1 * C1 * !Y)	-0.00059	-0.00059	-0.00059
	(A2 * B1 * !C1 * Y)	0.00077	0.00077	0.00077
	(A2 * B1 * !C1 * Y)	-0.00089	-0.00091	-0.00090
	(A2 * !B1 * !C1 * Y)	0.00073	0.00073	0.00073
	(A2 * !B1 * !C1 * Y)	-0.00093	-0.00093	-0.00093
	(A1 * !A2 * B1 * C1 * !Y)	0.00089	0.00089	0.00089
	(A1 * !A2 * B1 * C1 * !Y)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * B1 * !C1 * Y)	0.00078	0.00078	0.00077
	(A1 * !A2 * B1 * !C1 * Y)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * !B1 * !C1 * Y)	0.00073	0.00073	0.00073
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !A2 * B1 * C1 * Y)	0.00040	0.00041	0.00040
	(!A1 * !A2 * B1 * C1 * Y)	-0.00090	-0.00091	-0.00090
	(!A1 * !A2 * B1 * !C1 * Y)	0.00046	0.00046	0.00046
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00090	-0.00091	-0.00091
	(!A1 * !A2 * !B1 * C1 * Y)	0.00042	0.00042	0.00043
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00092	-0.00092	-0.00092
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00048	0.00049	0.00048
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00093	-0.00094	-0.00093

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00164	0.00164	0.00164
	(A2 * B1 * C1 * !Y)	-0.00117	-0.00117	-0.00116
	(A2 * B1 * !C1 * Y)	0.00146	0.00149	0.00147
	(A2 * B1 * !C1 * Y)	-0.00169	-0.00173	-0.00172
	(A2 * !B1 * !C1 * Y)	0.00136	0.00137	0.00136
	(A2 * !B1 * !C1 * Y)	-0.00177	-0.00178	-0.00178
	(A1 * !A2 * B1 * C1 * !Y)	0.00164	0.00164	0.00164
	(A1 * !A2 * B1 * C1 * !Y)	-0.00117	-0.00117	-0.00116
	(A1 * !A2 * B1 * !C1 * Y)	0.00148	0.00149	0.00147
	(A1 * !A2 * B1 * !C1 * Y)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * !B1 * !C1 * Y)	0.00136	0.00137	0.00136
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00177	-0.00178	-0.00177
	(!A1 * !A2 * B1 * C1 * Y)	0.00074	0.00074	0.00073
	(!A1 * !A2 * B1 * C1 * Y)	-0.00172	-0.00175	-0.00172
	(!A1 * !A2 * B1 * !C1 * Y)	0.00084	0.00085	0.00083
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00172	-0.00174	-0.00173
	(!A1 * !A2 * !B1 * C1 * Y)	0.00077	0.00077	0.00077
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00177	-0.00177	-0.00175
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00088	0.00088	0.00088
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00178	-0.00178	-0.00178

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00333	0.00337	0.00334
	(A2 * B1 * C1 * !Y)	-0.00233	-0.00235	-0.00232
	(A2 * B1 * !C1 * Y)	0.00301	0.00302	0.00299
	(A2 * B1 * !C1 * Y)	-0.00346	-0.00349	-0.00346
	(A2 * !B1 * !C1 * Y)	0.00275	0.00276	0.00275
	(A2 * !B1 * !C1 * Y)	-0.00358	-0.00359	-0.00358
	(A1 * !A2 * B1 * C1 * !Y)	0.00333	0.00337	0.00334
	(A1 * !A2 * B1 * C1 * !Y)	-0.00233	-0.00235	-0.00232
	(A1 * !A2 * B1 * !C1 * Y)	0.00300	0.00302	0.00298
	(A1 * !A2 * B1 * !C1 * Y)	-0.00346	-0.00349	-0.00347
	(A1 * !A2 * !B1 * !C1 * Y)	0.00275	0.00276	0.00275
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00358	-0.00359	-0.00358
	(!A1 * !A2 * B1 * C1 * Y)	0.00147	0.00148	0.00146
	(!A1 * !A2 * B1 * C1 * Y)	-0.00344	-0.00352	-0.00347
	(!A1 * !A2 * B1 * !C1 * Y)	0.00168	0.00168	0.00166
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00347	-0.00350	-0.00348
	(!A1 * !A2 * !B1 * C1 * Y)	0.00154	0.00154	0.00155
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00357	-0.00357	-0.00354
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00174	0.00175	0.00175
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00358	-0.00359	-0.00359

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221ai_1	**(A2 * B1 * C1 * !Y)**	-0.00088	-0.00088	-0.00089
	(A2 * B1 * C1 * !Y)	0.00060	0.00060	0.00059
	(A2 * B1 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * B1 * !C1 * Y)	0.00090	0.00091	0.00090
	(A2 * !B1 * !C1 * Y)	-0.00072	-0.00073	-0.00073
	(A2 * !B1 * !C1 * Y)	0.00093	0.00094	0.00093
	(A1 * !A2 * B1 * C1 * !Y)	-0.00088	-0.00088	-0.00089
	(A1 * !A2 * B1 * C1 * !Y)	0.00060	0.00060	0.00059
	(A1 * !A2 * B1 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * B1 * !C1 * Y)	0.00090	0.00091	0.00090
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00071	-0.00073	-0.00073
	(A1 * !A2 * !B1 * !C1 * Y)	0.00093	0.00094	0.00093
	(!A1 * !A2 * B1 * C1 * Y)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * B1 * C1 * Y)	0.00091	0.00091	0.00090
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * B1 * !C1 * Y)	0.00091	0.00091	0.00091
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00040	-0.00041	-0.00041
	(!A1 * !A2 * !B1 * C1 * Y)	0.00094	0.00094	0.00093
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00048	-0.00049	-0.00048
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00093	0.00094	0.00093

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00161	-0.00161	-0.00164
	(A2 * B1 * C1 * !Y)	0.00121	0.00120	0.00117
	(A2 * B1 * !C1 * Y)	-0.00146	-0.00147	-0.00147
	(A2 * B1 * !C1 * Y)	0.00172	0.00173	0.00172
	(A2 * !B1 * !C1 * Y)	-0.00133	-0.00137	-0.00136
	(A2 * !B1 * !C1 * Y)	0.00178	0.00179	0.00178
	(A1 * !A2 * B1 * C1 * !Y)	-0.00161	-0.00161	-0.00164
	(A1 * !A2 * B1 * C1 * !Y)	0.00121	0.00120	0.00117
	(A1 * !A2 * B1 * !C1 * Y)	-0.00147	-0.00147	-0.00147
	(A1 * !A2 * B1 * !C1 * Y)	0.00172	0.00173	0.00172
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00133	-0.00137	-0.00136
	(A1 * !A2 * !B1 * !C1 * Y)	0.00177	0.00179	0.00178
	(!A1 * !A2 * B1 * C1 * Y)	-0.00072	-0.00072	-0.00073
	(!A1 * !A2 * B1 * C1 * Y)	0.00175	0.00175	0.00172
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00084	-0.00085	-0.00083
	(!A1 * !A2 * B1 * !C1 * Y)	0.00173	0.00174	0.00173
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00072	-0.00073	-0.00074
	(!A1 * !A2 * !B1 * C1 * Y)	0.00180	0.00181	0.00178
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00088	-0.00088	-0.00088
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00178	0.00179	0.00178

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00329	-0.00330	-0.00334
	(A2 * B1 * C1 * !Y)	0.00240	0.00239	0.00234
	(A2 * B1 * !C1 * Y)	-0.00297	-0.00299	-0.00298
	(A2 * B1 * !C1 * Y)	0.00346	0.00349	0.00346
	(A2 * !B1 * !C1 * Y)	-0.00269	-0.00276	-0.00275
	(A2 * !B1 * !C1 * Y)	0.00358	0.00362	0.00359
	(A1 * !A2 * B1 * C1 * !Y)	-0.00329	-0.00330	-0.00334
	(A1 * !A2 * B1 * C1 * !Y)	0.00240	0.00239	0.00234
	(A1 * !A2 * B1 * !C1 * Y)	-0.00298	-0.00299	-0.00298
	(A1 * !A2 * B1 * !C1 * Y)	0.00347	0.00349	0.00347
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00267	-0.00276	-0.00275
	(A1 * !A2 * !B1 * !C1 * Y)	0.00358	0.00362	0.00359
	(!A1 * !A2 * B1 * C1 * Y)	-0.00144	-0.00144	-0.00146
	(!A1 * !A2 * B1 * C1 * Y)	0.00354	0.00354	0.00347
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00168	-0.00168	-0.00166
	(!A1 * !A2 * B1 * !C1 * Y)	0.00348	0.00350	0.00348
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00144	-0.00145	-0.00148
	(!A1 * !A2 * !B1 * C1 * Y)	0.00366	0.00368	0.00360
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00174	-0.00175	-0.00175
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00359	0.00361	0.00360

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	(A2 * !B1 * !B2 * Y)	0.00039	0.00039	0.00036
	(A2 * !B1 * !B2 * Y)	-0.00113	-0.00114	-0.00118
	(!A2 * !B1 * !B2 * Y)	0.00039	0.00039	0.00036
	(!A2 * !B1 * !B2 * Y)	-0.00113	-0.00113	-0.00118
	(!A1 * !A2 * B2 * Y)	0.00042	0.00041	0.00035
	(!A1 * !A2 * B2 * Y)	-0.00104	-0.00105	-0.00116
	(!A1 * !A2 * B1 * !B2 * Y)	0.00042	0.00041	0.00036
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00106	-0.00106	-0.00116
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00072	0.00071	0.00067
	(A2 * !B1 * !B2 * Y)	-0.00209	-0.00210	-0.00217
	(!A2 * !B1 * !B2 * Y)	0.00072	0.00071	0.00067
	(!A2 * !B1 * !B2 * Y)	-0.00209	-0.00209	-0.00217
	(!A1 * !A2 * B2 * Y)	0.00077	0.00076	0.00065
	(!A1 * !A2 * B2 * Y)	-0.00192	-0.00194	-0.00215
	(!A1 * !A2 * B1 * !B2 * Y)	0.00077	0.00076	0.00066
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00196	-0.00196	-0.00215
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00125	0.00125	0.00117
	(A2 * !B1 * !B2 * Y)	-0.00426	-0.00428	-0.00441
	(!A2 * !B1 * !B2 * Y)	0.00126	0.00125	0.00117
	(!A2 * !B1 * !B2 * Y)	-0.00427	-0.00427	-0.00441
	(!A1 * !A2 * B2 * Y)	0.00135	0.00134	0.00114
	(!A1 * !A2 * B2 * Y)	-0.00395	-0.00399	-0.00436
	(!A1 * !A2 * B1 * !B2 * Y)	0.00136	0.00134	0.00117
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00402	-0.00403	-0.00437

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	(A2 * !B1 * !B2 * Y)	-0.00035	-0.00035	-0.00035
	(A2 * !B1 * !B2 * Y)	0.00117	0.00119	0.00118
	(!A2 * !B1 * !B2 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !B2 * Y)	0.00118	0.00118	0.00118
	(!A1 * !A2 * B2 * Y)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * B2 * Y)	0.00118	0.00119	0.00118
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * B1 * !B2 * Y)	0.00118	0.00118	0.00118
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00065	-0.00065	-0.00064
	(A2 * !B1 * !B2 * Y)	0.00218	0.00221	0.00218
	(!A2 * !B1 * !B2 * Y)	-0.00065	-0.00065	-0.00064
	(!A2 * !B1 * !B2 * Y)	0.00218	0.00219	0.00218
	(!A1 * !A2 * B2 * Y)	-0.00063	-0.00063	-0.00062
	(!A1 * !A2 * B2 * Y)	0.00219	0.00221	0.00218
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00064	-0.00063	-0.00063
	(!A1 * !A2 * B1 * !B2 * Y)	0.00219	0.00219	0.00218
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00114	-0.00114	-0.00113
	(A2 * !B1 * !B2 * Y)	0.00443	0.00447	0.00442
	(!A2 * !B1 * !B2 * Y)	-0.00114	-0.00114	-0.00113
	(!A2 * !B1 * !B2 * Y)	0.00443	0.00444	0.00442
	(!A1 * !A2 * B2 * Y)	-0.00110	-0.00110	-0.00109
	(!A1 * !A2 * B2 * Y)	0.00443	0.00447	0.00442
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00112	-0.00111	-0.00110
	(!A1 * !A2 * B1 * !B2 * Y)	0.00444	0.00444	0.00442

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	B1	B2	C1	X
0	0	x	x	x	0
x	1	0	0	x	0
x	1	x	1	0	0
x	1	x	1	1	1
x	1	1	x	0	0
x	1	1	x	1	1
1	x	0	0	x	0
1	x	x	1	0	0
1	x	x	1	1	1
1	x	1	x	0	0
1	x	1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221a_1	14.38560
sky130_fd_sc_hs__o221a_2	15.98400
sky130_fd_sc_hs__o221a_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__o221a_1	0.00230	0.00230	0.00223	0.00242	0.00240	0.18620
sky130_fd_sc_hs__o221a_2	0.00245	0.00242	0.00240	0.00254	0.00252	0.37457
sky130_fd_sc_hs__o221a_4	0.00457	0.00415	0.00488	0.00417	0.00430	0.73229

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.00011	0.00017
sky130_fd_sc_hs__o221a_2	0.00000	0.00015	0.00021
sky130_fd_sc_hs__o221a_4	0.00000	0.00030	0.00041

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (RR)	0.40673	1.81170	10.22700
	A2->X (RR)	0.39709	1.79952	10.17790
	B1->X (RR)	0.39210	1.83122	10.23070
	B2->X (RR)	0.38463	1.81343	10.15880
	C1->X (RR)	0.36843	1.79278	9.95291
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.38836	1.60705	10.24220
	A2->X (RR)	0.38046	1.59710	10.20190
	B1->X (RR)	0.37486	1.63298	10.27590
	B2->X (RR)	0.37247	1.62114	10.22020
	C1->X (RR)	0.35275	1.60631	10.04950
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.40166	1.48871	10.34330
	A2->X (RR)	0.39705	1.48272	10.30770
	B1->X (RR)	0.38989	1.51625	10.38490
	B2->X (RR)	0.38364	1.49886	10.31370
	C1->X (RR)	0.36180	1.48367	10.13980

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	1.25699	2.39035	8.81657
	A2->X (FF)	1.18767	2.21957	8.28905
	B1->X (FF)	1.08630	2.21206	8.58588
	B2->X (FF)	1.02538	2.04894	8.06761
	C1->X (FF)	0.39704	1.45379	7.38906
sky130_fd_sc_hs__o221a_2	A1->X (FF)	1.54274	2.69353	9.25547
	A2->X (FF)	1.46497	2.51191	8.73949
	B1->X (FF)	1.33675	2.47598	9.00961
	B2->X (FF)	1.27544	2.31039	8.51865
	C1->X (FF)	0.48783	1.53721	7.69347
sky130_fd_sc_hs__o221a_4	A1->X (FF)	1.36110	2.47063	9.06050
	A2->X (FF)	1.28187	2.28566	8.53590
	B1->X (FF)	1.21750	2.31367	8.87137
	B2->X (FF)	1.13743	2.13275	8.35879
	C1->X (FF)	0.44482	1.46481	7.61014

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.00682	0.00681	0.00675
	A1	0.00307	0.00306	0.00301
	A2	0.00626	0.00628	0.00623
	A2	0.00279	0.00282	0.00277
	B1	0.00618	0.00618	0.00613
	B1	0.00306	0.00305	0.00301
	B2	0.00573	0.00572	0.00565
	B2	0.00275	0.00274	0.00267
	C1	0.00582	0.00579	0.00572
	C1	0.00306	0.00304	0.00296
sky130_fd_sc_hs__o221a_2	A1	0.00842	0.00851	0.00849
	A1	0.00436	0.00445	0.00444
	A2	0.00781	0.00794	0.00793
	A2	0.00406	0.00419	0.00418
	B1	0.00773	0.00779	0.00779
	B1	0.00436	0.00443	0.00444
	B2	0.00725	0.00732	0.00729
	B2	0.00408	0.00415	0.00413
	C1	0.00730	0.00734	0.00729
	C1	0.00438	0.00442	0.00439

sky130_fd_sc_hs__o221a_4	**A1**	0.01545	0.01566	0.01570
	A1	0.00815	0.00836	0.00844
	A2	0.01401	0.01424	0.01430
	A2	0.00751	0.00774	0.00782
	B1	0.01451	0.01468	0.01474
	B1	0.00814	0.00830	0.00839
	B2	0.01299	0.01317	0.01320
	B2	0.00754	0.00772	0.00777
	C1	0.01321	0.01332	0.01332
	C1	0.00812	0.00825	0.00825

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00274	0.00273	0.00268
	A1	0.00631	0.00629	0.00621
	A2	0.00275	0.00272	0.00267
	A2	0.00599	0.00598	0.00589
	B1	0.00231	0.00230	0.00228
	B1	0.00542	0.00541	0.00537
	B2	0.00222	0.00218	0.00225
	B2	0.00516	0.00513	0.00507
	C1	0.00183	0.00169	0.00180
	C1	0.00463	0.00452	0.00448

sky130_fd_sc_hs__o221a_2	**A1**	0.00385	0.00394	0.00394
	A1	0.00772	0.00780	0.00775
	A2	0.00386	0.00393	0.00348
	A2	0.00739	0.00748	0.00743
	B1	0.00336	0.00345	0.00346
	B1	0.00669	0.00679	0.00678
	B2	0.00329	0.00335	0.00338
	B2	0.00640	0.00648	0.00646
	C1	0.00291	0.00290	0.00338
	C1	0.00586	0.00587	0.00584
sky130_fd_sc_hs__o221a_4	**A1**	0.00714	0.00740	0.00744
	A1	0.01409	0.01436	0.01433
	A2	0.00738	0.00758	0.00765
	A2	0.01348	0.01370	0.01366
	B1	0.00622	0.00644	0.00650
	B1	0.01257	0.01279	0.01282
	B2	0.00654	0.00672	0.00678
	B2	0.01193	0.01210	0.01212
	C1	0.00580	0.00586	0.00811
	C1	0.01098	0.01104	0.01105

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	0.00075	0.00076	0.00075
	(A2 * B2 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00065	0.00065	0.00064
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00090	-0.00091	-0.00091
	(A2 * B1 * !B2 * C1 * X)	0.00075	0.00076	0.00075
	(A2 * B1 * !B2 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A2 * !B1 * !B2 * !X)	0.00065	0.00065	0.00064
	(A2 * !B1 * !B2 * !X)	-0.00090	-0.00091	-0.00091
	(!A2 * B2 * !C1 * !X)	0.00058	0.00058	0.00058
	(!A2 * B2 * !C1 * !X)	-0.00092	-0.00092	-0.00092
	(!A2 * B1 * !B2 * !C1 * !X)	0.00059	0.00058	0.00059
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00093	-0.00092	-0.00092
	(!A2 * !B1 * !B2 * C1 * !X)	0.00059	0.00060	0.00059
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00093	-0.00093	-0.00092
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00059	0.00059	0.00059
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00092	-0.00093	-0.00092

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00088	0.00088	0.00087
	(A2 * B2 * C1 * X)	-0.00078	-0.00080	-0.00079
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00076	0.00076	0.00075
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00090	-0.00092	-0.00091
	(A2 * B1 * !B2 * C1 * X)	0.00088	0.00088	0.00087
	(A2 * B1 * !B2 * C1 * X)	-0.00078	-0.00080	-0.00079
	(A2 * !B1 * !B2 * !X)	0.00076	0.00076	0.00076
	(A2 * !B1 * !B2 * !X)	-0.00090	-0.00092	-0.00091
	(!A2 * B2 * !C1 * !X)	0.00068	0.00067	0.00067
	(!A2 * B2 * !C1 * !X)	-0.00093	-0.00093	-0.00093
	(!A2 * B1 * !B2 * !C1 * !X)	0.00069	0.00068	0.00068
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00093	-0.00093	-0.00093
	(!A2 * !B1 * !B2 * C1 * !X)	0.00069	0.00070	0.00070
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00093	-0.00093	-0.00093
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00069	0.00070	0.00070
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00093	-0.00093	-0.00093

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00161	0.00162	0.00160
	(A2 * B2 * C1 * X)	-0.00155	-0.00158	-0.00157
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00146	0.00148	0.00145
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00170	-0.00172	-0.00171
	(A2 * B1 * !B2 * C1 * X)	0.00161	0.00162	0.00160
	(A2 * B1 * !B2 * C1 * X)	-0.00155	-0.00158	-0.00157
	(A2 * !B1 * !B2 * !X)	0.00146	0.00148	0.00145
	(A2 * !B1 * !B2 * !X)	-0.00170	-0.00172	-0.00171
	(!A2 * B2 * !C1 * !X)	0.00132	0.00133	0.00132
	(!A2 * B2 * !C1 * !X)	-0.00176	-0.00176	-0.00175
	(!A2 * B1 * !B2 * !C1 * !X)	0.00134	0.00134	0.00133
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00176	-0.00176	-0.00176
	(!A2 * !B1 * !B2 * C1 * !X)	0.00135	0.00135	0.00135
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00175	-0.00176	-0.00175
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00135	0.00135	0.00135
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00175	-0.00176	-0.00175

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	-0.00075	-0.00075	-0.00075
	(A2 * B2 * C1 * X)	0.00081	0.00080	0.00080
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00065	-0.00065	-0.00064
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00091	0.00091	0.00091
	(A2 * B1 * !B2 * C1 * X)	-0.00075	-0.00075	-0.00075
	(A2 * B1 * !B2 * C1 * X)	0.00081	0.00080	0.00080
	(A2 * !B1 * !B2 * !X)	-0.00065	-0.00065	-0.00064
	(A2 * !B1 * !B2 * !X)	0.00092	0.00091	0.00091
	(!A2 * B2 * !C1 * !X)	-0.00056	-0.00058	-0.00058
	(!A2 * B2 * !C1 * !X)	0.00093	0.00093	0.00093
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00057	-0.00058	-0.00059
	(!A2 * B1 * !B2 * !C1 * !X)	0.00093	0.00093	0.00093
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00058	-0.00060	-0.00059
	(!A2 * !B1 * !B2 * C1 * !X)	0.00093	0.00093	0.00093
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00058	-0.00059	-0.00059
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00093	0.00093	0.00093

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00087	-0.00088	-0.00087
	(A2 * B2 * C1 * X)	0.00080	0.00080	0.00079
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00075	-0.00076	-0.00075
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00092	0.00092	0.00091
	(A2 * B1 * !B2 * C1 * X)	-0.00087	-0.00088	-0.00087
	(A2 * B1 * !B2 * C1 * X)	0.00080	0.00080	0.00079
	(A2 * !B1 * !B2 * !X)	-0.00076	-0.00076	-0.00075
	(A2 * !B1 * !B2 * !X)	0.00092	0.00092	0.00091
	(!A2 * B2 * !C1 * !X)	-0.00065	-0.00067	-0.00067
	(!A2 * B2 * !C1 * !X)	0.00094	0.00094	0.00093
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00066	-0.00068	-0.00068
	(!A2 * B1 * !B2 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00068	-0.00070	-0.00070
	(!A2 * !B1 * !B2 * C1 * !X)	0.00093	0.00094	0.00093
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00068	-0.00070	-0.00070
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00093	0.00094	0.00093

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00159	-0.00160	-0.00160
	(A2 * B2 * C1 * X)	0.00156	0.00158	0.00157
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00145	-0.00146	-0.00145
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00171	0.00172	0.00171
	(A2 * B1 * !B2 * C1 * X)	-0.00159	-0.00160	-0.00160
	(A2 * B1 * !B2 * C1 * X)	0.00156	0.00158	0.00157
	(A2 * !B1 * !B2 * !X)	-0.00145	-0.00146	-0.00145
	(A2 * !B1 * !B2 * !X)	0.00171	0.00172	0.00171
	(!A2 * B2 * !C1 * !X)	-0.00128	-0.00133	-0.00132
	(!A2 * B2 * !C1 * !X)	0.00176	0.00177	0.00176
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00130	-0.00134	-0.00133
	(!A2 * B1 * !B2 * !C1 * !X)	0.00177	0.00177	0.00176
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00132	-0.00135	-0.00135
	(!A2 * !B1 * !B2 * C1 * !X)	0.00175	0.00177	0.00176
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00132	-0.00135	-0.00135
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00175	0.00177	0.00176

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A1 * B2 * C1 * X)**	0.00078	0.00078	0.00077
	(A1 * B2 * C1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * B2 * !C1 * !X)	0.00066	0.00067	0.00066
	(A1 * B2 * !C1 * !X)	-0.00082	-0.00083	-0.00083
	(A1 * B1 * !B2 * C1 * X)	0.00078	0.00078	0.00077
	(A1 * B1 * !B2 * C1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * B1 * !B2 * !C1 * !X)	0.00066	0.00067	0.00066
	(A1 * B1 * !B2 * !C1 * !X)	-0.00082	-0.00083	-0.00083
	(A1 * !B1 * !B2 * C1 * !X)	0.00067	0.00067	0.00066
	(A1 * !B1 * !B2 * C1 * !X)	-0.00082	-0.00083	-0.00083
	(A1 * !B1 * !B2 * !C1 * !X)	0.00066	0.00067	0.00066
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00082	-0.00083	-0.00083
	(!A1 * B2 * !C1 * !X)	0.00058	0.00059	0.00059
	(!A1 * B2 * !C1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * B1 * !B2 * !C1 * !X)	0.00059	0.00060	0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !B1 * !B2 * C1 * !X)	0.00060	0.00061	0.00060
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00085	-0.00086	-0.00085
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00060	0.00061	0.00060
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00085	-0.00086	-0.00085

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00089	0.00089	0.00088
	(A1 * B2 * C1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * B2 * !C1 * !X)	0.00078	0.00078	0.00077
	(A1 * B2 * !C1 * !X)	-0.00083	-0.00083	-0.00082
	(A1 * B1 * !B2 * C1 * X)	0.00089	0.00089	0.00088
	(A1 * B1 * !B2 * C1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * B1 * !B2 * !C1 * !X)	0.00077	0.00078	0.00077
	(A1 * B1 * !B2 * !C1 * !X)	-0.00082	-0.00083	-0.00082
	(A1 * !B1 * !B2 * C1 * !X)	0.00078	0.00077	0.00077
	(A1 * !B1 * !B2 * C1 * !X)	-0.00083	-0.00083	-0.00082
	(A1 * !B1 * !B2 * !C1 * !X)	0.00077	0.00078	0.00077
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00082	-0.00083	-0.00083
	(!A1 * B2 * !C1 * !X)	0.00069	0.00069	0.00068
	(!A1 * B2 * !C1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * B1 * !B2 * !C1 * !X)	0.00070	0.00069	0.00069
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00085	-0.00085	-0.00085
	(!A1 * !B1 * !B2 * C1 * !X)	0.00070	0.00071	0.00071
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00084	-0.00085	-0.00084
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00070	0.00071	0.00071
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00084	-0.00085	-0.00084

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00143	0.00143	0.00142
	(A1 * B2 * C1 * X)	-0.00108	-0.00107	-0.00107
	(A1 * B2 * !C1 * !X)	0.00123	0.00125	0.00123
	(A1 * B2 * !C1 * !X)	-0.00159	-0.00162	-0.00161
	(A1 * B1 * !B2 * C1 * X)	0.00143	0.00143	0.00142
	(A1 * B1 * !B2 * C1 * X)	-0.00108	-0.00107	-0.00107
	(A1 * B1 * !B2 * !C1 * !X)	0.00124	0.00125	0.00123
	(A1 * B1 * !B2 * !C1 * !X)	-0.00160	-0.00162	-0.00161
	(A1 * !B1 * !B2 * C1 * !X)	0.00123	0.00124	0.00123
	(A1 * !B1 * !B2 * C1 * !X)	-0.00159	-0.00161	-0.00161
	(A1 * !B1 * !B2 * !C1 * !X)	0.00123	0.00125	0.00123
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00160	-0.00162	-0.00161
	(!A1 * B2 * !C1 * !X)	0.00109	0.00110	0.00110
	(!A1 * B2 * !C1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * B1 * !B2 * !C1 * !X)	0.00111	0.00111	0.00111
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !B1 * !B2 * C1 * !X)	0.00112	0.00114	0.00113
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00166	-0.00167	-0.00166
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00112	0.00113	0.00113
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00166

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A1 * B2 * C1 * X)**	-0.00076	-0.00076	-0.00077
	(A1 * B2 * C1 * X)	0.00056	0.00056	0.00054
	(A1 * B2 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * B2 * !C1 * !X)	0.00083	0.00083	0.00083
	(A1 * B1 * !B2 * C1 * X)	-0.00076	-0.00076	-0.00077
	(A1 * B1 * !B2 * C1 * X)	0.00056	0.00056	0.00054
	(A1 * B1 * !B2 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * B1 * !B2 * !C1 * !X)	0.00083	0.00083	0.00083
	(A1 * !B1 * !B2 * C1 * !X)	-0.00067	-0.00067	-0.00066
	(A1 * !B1 * !B2 * C1 * !X)	0.00083	0.00083	0.00083
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * !B1 * !B2 * !C1 * !X)	0.00083	0.00083	0.00083
	(!A1 * B2 * !C1 * !X)	-0.00057	-0.00059	-0.00059
	(!A1 * B2 * !C1 * !X)	0.00086	0.00086	0.00085
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00058	-0.00060	-0.00060
	(!A1 * B1 * !B2 * !C1 * !X)	0.00086	0.00086	0.00085
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00059	-0.00061	-0.00060
	(!A1 * !B1 * !B2 * C1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00059	-0.00061	-0.00060
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00085	0.00086	0.00085

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00086	-0.00087	-0.00088
	(A1 * B2 * C1 * X)	0.00056	0.00055	0.00054
	(A1 * B2 * !C1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * B2 * !C1 * !X)	0.00083	0.00083	0.00082
	(A1 * B1 * !B2 * C1 * X)	-0.00086	-0.00087	-0.00088
	(A1 * B1 * !B2 * C1 * X)	0.00056	0.00055	0.00054
	(A1 * B1 * !B2 * !C1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * B1 * !B2 * !C1 * !X)	0.00083	0.00083	0.00082
	(A1 * !B1 * !B2 * C1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !B2 * C1 * !X)	0.00083	0.00083	0.00082
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !B2 * !C1 * !X)	0.00083	0.00083	0.00083
	(!A1 * B2 * !C1 * !X)	-0.00066	-0.00069	-0.00068
	(!A1 * B2 * !C1 * !X)	0.00085	0.00085	0.00085
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00067	-0.00069	-0.00069
	(!A1 * B1 * !B2 * !C1 * !X)	0.00085	0.00085	0.00085
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00069	-0.00071	-0.00071
	(!A1 * !B1 * !B2 * C1 * !X)	0.00084	0.00085	0.00085
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00069	-0.00071	-0.00071
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00084	0.00085	0.00085

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00139	-0.00139	-0.00142
	(A1 * B2 * C1 * X)	0.00111	0.00111	0.00108
	(A1 * B2 * !C1 * !X)	-0.00123	-0.00124	-0.00123
	(A1 * B2 * !C1 * !X)	0.00161	0.00162	0.00161
	(A1 * B1 * !B2 * C1 * X)	-0.00139	-0.00139	-0.00142
	(A1 * B1 * !B2 * C1 * X)	0.00111	0.00111	0.00108
	(A1 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00124	-0.00123
	(A1 * B1 * !B2 * !C1 * !X)	0.00162	0.00162	0.00161
	(A1 * !B1 * !B2 * C1 * !X)	-0.00123	-0.00124	-0.00123
	(A1 * !B1 * !B2 * C1 * !X)	0.00162	0.00161	0.00161
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00123	-0.00124	-0.00123
	(A1 * !B1 * !B2 * !C1 * !X)	0.00162	0.00162	0.00161
	(!A1 * B2 * !C1 * !X)	-0.00106	-0.00110	-0.00110
	(!A1 * B2 * !C1 * !X)	0.00167	0.00167	0.00166
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00107	-0.00111	-0.00111
	(!A1 * B1 * !B2 * !C1 * !X)	0.00166	0.00167	0.00166
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00110	-0.00114	-0.00113
	(!A1 * !B1 * !B2 * C1 * !X)	0.00166	0.00167	0.00166
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00110	-0.00113	-0.00113
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00166	0.00167	0.00166

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	0.00070	0.00070	0.00070
	(A2 * B2 * C1 * X)	-0.00081	-0.00082	-0.00082
	(A2 * !B2 * !C1 * !X)	0.00063	0.00063	0.00063
	(A2 * !B2 * !C1 * !X)	-0.00087	-0.00088	-0.00087
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00066	0.00067	0.00066
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00085	-0.00086	-0.00086
	(A1 * !A2 * B2 * C1 * X)	0.00070	0.00070	0.00070
	(A1 * !A2 * B2 * C1 * X)	-0.00081	-0.00082	-0.00082
	(A1 * !A2 * !B2 * !C1 * !X)	0.00062	0.00063	0.00063
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00087	-0.00088	-0.00087
	(!A1 * !A2 * B2 * C1 * !X)	0.00035	0.00035	0.00034
	(!A1 * !A2 * B2 * C1 * !X)	-0.00085	-0.00086	-0.00086
	(!A1 * !A2 * B2 * !C1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00085	-0.00086	-0.00086
	(!A1 * !A2 * !B2 * C1 * !X)	0.00035	0.00036	0.00036
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00087	-0.00087	-0.00086
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00041	0.00040	0.00041
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00083	0.00083	0.00082
	(A2 * B2 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A2 * !B2 * !C1 * !X)	0.00071	0.00072	0.00071
	(A2 * !B2 * !C1 * !X)	-0.00088	-0.00089	-0.00088
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00076	0.00077	0.00076
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00085	-0.00087	-0.00086
	(A1 * !A2 * B2 * C1 * X)	0.00083	0.00083	0.00082
	(A1 * !A2 * B2 * C1 * X)	-0.00079	-0.00080	-0.00080
	(A1 * !A2 * !B2 * !C1 * !X)	0.00071	0.00072	0.00071
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A2 * B2 * C1 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * B2 * C1 * !X)	-0.00086	-0.00087	-0.00087
	(!A1 * !A2 * B2 * !C1 * !X)	0.00044	0.00044	0.00044
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00086	-0.00087	-0.00087
	(!A1 * !A2 * !B2 * C1 * !X)	0.00040	0.00040	0.00041
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00088	-0.00087	-0.00087
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00046	0.00046	0.00046
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00089	-0.00089	-0.00089

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00179	0.00180	0.00177
	(A2 * B2 * C1 * X)	-0.00156	-0.00158	-0.00157
	(A2 * !B2 * !C1 * !X)	0.00155	0.00157	0.00156
	(A2 * !B2 * !C1 * !X)	-0.00175	-0.00176	-0.00175
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00165	0.00167	0.00165
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00169	-0.00172	-0.00171
	(A1 * !A2 * B2 * C1 * X)	0.00179	0.00180	0.00177
	(A1 * !A2 * B2 * C1 * X)	-0.00156	-0.00159	-0.00157
	(A1 * !A2 * !B2 * !C1 * !X)	0.00155	0.00156	0.00156
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00175	-0.00175	-0.00175
	(!A1 * !A2 * B2 * C1 * !X)	0.00097	0.00097	0.00096
	(!A1 * !A2 * B2 * C1 * !X)	-0.00170	-0.00174	-0.00172
	(!A1 * !A2 * B2 * !C1 * !X)	0.00105	0.00106	0.00104
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00171	-0.00173	-0.00172
	(!A1 * !A2 * !B2 * C1 * !X)	0.00098	0.00099	0.00100
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00175	-0.00175	-0.00174
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00108	0.00108	0.00108
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00176	-0.00177	-0.00176

Passive power(pJ) for B1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B2 * C1 * X)**	-0.00070	-0.00070	-0.00070
	(A2 * B2 * C1 * X)	0.00083	0.00082	0.00082
	(A2 * !B2 * !C1 * !X)	-0.00062	-0.00063	-0.00063
	(A2 * !B2 * !C1 * !X)	0.00088	0.00089	0.00087
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00066	-0.00066	-0.00066
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00085	0.00086	0.00086
	(A1 * !A2 * B2 * C1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * B2 * C1 * X)	0.00082	0.00082	0.00082
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00061	-0.00063	-0.00063
	(A1 * !A2 * !B2 * !C1 * !X)	0.00087	0.00089	0.00087
	(!A1 * !A2 * B2 * C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * B2 * C1 * !X)	0.00087	0.00087	0.00086
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * B2 * !C1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00034	-0.00035	-0.00035
	(!A1 * !A2 * !B2 * C1 * !X)	0.00088	0.00089	0.00087
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00041	-0.00040	-0.00041
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00087	0.00088	0.00088

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00083	-0.00083	-0.00082
	(A2 * B2 * C1 * X)	0.00081	0.00080	0.00080
	(A2 * !B2 * !C1 * !X)	-0.00070	-0.00072	-0.00071
	(A2 * !B2 * !C1 * !X)	0.00089	0.00089	0.00088
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00076	-0.00076	-0.00076
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * B2 * C1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * !A2 * B2 * C1 * X)	0.00081	0.00080	0.00080
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00070	-0.00072	-0.00071
	(A1 * !A2 * !B2 * !C1 * !X)	0.00089	0.00089	0.00088
	(!A1 * !A2 * B2 * C1 * !X)	-0.00038	-0.00038	-0.00039
	(!A1 * !A2 * B2 * C1 * !X)	0.00088	0.00088	0.00087
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B2 * !C1 * !X)	0.00087	0.00087	0.00087
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00038	-0.00039	-0.00039
	(!A1 * !A2 * !B2 * C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00089	0.00089	0.00089

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00177	-0.00178	-0.00177
	(A2 * B2 * C1 * X)	0.00157	0.00158	0.00157
	(A2 * !B2 * !C1 * !X)	-0.00154	-0.00157	-0.00156
	(A2 * !B2 * !C1 * !X)	0.00176	0.00176	0.00175
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00164	-0.00165	-0.00164
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00170	0.00172	0.00171
	(A1 * !A2 * B2 * C1 * X)	-0.00177	-0.00178	-0.00177
	(A1 * !A2 * B2 * C1 * X)	0.00157	0.00159	0.00157
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00153	-0.00156	-0.00156
	(A1 * !A2 * !B2 * !C1 * !X)	0.00175	0.00176	0.00175
	(!A1 * !A2 * B2 * C1 * !X)	-0.00093	-0.00095	-0.00096
	(!A1 * !A2 * B2 * C1 * !X)	0.00173	0.00176	0.00172
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00105	-0.00106	-0.00104
	(!A1 * !A2 * B2 * !C1 * !X)	0.00171	0.00173	0.00172
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00096	-0.00096	-0.00097
	(!A1 * !A2 * !B2 * C1 * !X)	0.00179	0.00179	0.00176
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00108	-0.00108	-0.00108
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00177	0.00177	0.00177

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o221a_1	**(A2 * B1 * C1 * X)**	0.00088	0.00088	0.00087
	(A2 * B1 * C1 * X)	-0.00056	-0.00055	-0.00055
	(A2 * B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(A2 * B1 * !C1 * !X)	-0.00085	-0.00086	-0.00086
	(A2 * !B1 * !C1 * !X)	0.00070	0.00071	0.00071
	(A2 * !B1 * !C1 * !X)	-0.00087	-0.00088	-0.00088
	(A1 * !A2 * B1 * C1 * X)	0.00088	0.00088	0.00087
	(A1 * !A2 * B1 * C1 * X)	-0.00056	-0.00055	-0.00055
	(A1 * !A2 * B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A2 * B1 * !C1 * !X)	-0.00085	-0.00086	-0.00086
	(A1 * !A2 * !B1 * !C1 * !X)	0.00071	0.00071	0.00071
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00088	-0.00088	-0.00088
	(!A1 * !A2 * B1 * C1 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A2 * B1 * C1 * !X)	-0.00085	-0.00086	-0.00086
	(!A1 * !A2 * B1 * !C1 * !X)	0.00044	0.00045	0.00044
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00085	-0.00086	-0.00086
	(!A1 * !A2 * !B1 * C1 * !X)	0.00041	0.00041	0.00042
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00088	-0.00087	-0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00047	0.00046	0.00046
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00088	-0.00088	-0.00088

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00096	0.00095	0.00095
	(A2 * B1 * C1 * X)	-0.00055	-0.00054	-0.00053
	(A2 * B1 * !C1 * !X)	0.00082	0.00083	0.00082
	(A2 * B1 * !C1 * !X)	-0.00083	-0.00084	-0.00084
	(A2 * !B1 * !C1 * !X)	0.00077	0.00078	0.00077
	(A2 * !B1 * !C1 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * B1 * C1 * X)	0.00095	0.00095	0.00095
	(A1 * !A2 * B1 * C1 * X)	-0.00055	-0.00054	-0.00053
	(A1 * !A2 * B1 * !C1 * !X)	0.00082	0.00083	0.00082
	(A1 * !A2 * B1 * !C1 * !X)	-0.00083	-0.00083	-0.00084
	(A1 * !A2 * !B1 * !C1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * B1 * C1 * !X)	0.00042	0.00043	0.00042
	(!A1 * !A2 * B1 * C1 * !X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A2 * B1 * !C1 * !X)	0.00047	0.00048	0.00047
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00084	-0.00085	-0.00085
	(!A1 * !A2 * !B1 * C1 * !X)	0.00044	0.00044	0.00045
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00086	-0.00086	-0.00085
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00049	0.00050	0.00049
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00147	0.00148	0.00147
	(A2 * B1 * C1 * X)	-0.00107	-0.00108	-0.00107
	(A2 * B1 * !C1 * !X)	0.00126	0.00128	0.00126
	(A2 * B1 * !C1 * !X)	-0.00162	-0.00165	-0.00164
	(A2 * !B1 * !C1 * !X)	0.00118	0.00120	0.00119
	(A2 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * B1 * C1 * X)	0.00147	0.00148	0.00147
	(A1 * !A2 * B1 * C1 * X)	-0.00107	-0.00108	-0.00107
	(A1 * !A2 * B1 * !C1 * !X)	0.00126	0.00128	0.00126
	(A1 * !A2 * B1 * !C1 * !X)	-0.00162	-0.00165	-0.00164
	(A1 * !A2 * !B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * B1 * C1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A2 * B1 * C1 * !X)	-0.00163	-0.00166	-0.00164
	(!A1 * !A2 * B1 * !C1 * !X)	0.00070	0.00071	0.00070
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00164	-0.00166	-0.00165
	(!A1 * !A2 * !B1 * C1 * !X)	0.00064	0.00064	0.00065
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00169	-0.00169	-0.00167
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00073	0.00074	0.00074
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00170	-0.00171	-0.00170

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o221a_1	**(A2 * B1 * C1 * X)**	-0.00086	-0.00086	-0.00087
	(A2 * B1 * C1 * X)	0.00057	0.00057	0.00055
	(A2 * B1 * !C1 * !X)	-0.00074	-0.00075	-0.00074
	(A2 * B1 * !C1 * !X)	0.00086	0.00086	0.00086
	(A2 * !B1 * !C1 * !X)	-0.00069	-0.00071	-0.00071
	(A2 * !B1 * !C1 * !X)	0.00087	0.00089	0.00088
	(A1 * !A2 * B1 * C1 * X)	-0.00085	-0.00086	-0.00087
	(A1 * !A2 * B1 * C1 * X)	0.00057	0.00057	0.00055
	(A1 * !A2 * B1 * !C1 * !X)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * B1 * !C1 * !X)	0.00086	0.00086	0.00086
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00069	-0.00071	-0.00071
	(A1 * !A2 * !B1 * !C1 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A2 * B1 * C1 * !X)	-0.00039	-0.00040	-0.00040
	(!A1 * !A2 * B1 * C1 * !X)	0.00087	0.00087	0.00086
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00044	-0.00045	-0.00044
	(!A1 * !A2 * B1 * !C1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !B1 * C1 * !X)	0.00089	0.00089	0.00088
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00047	-0.00046	-0.00046
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00088	0.00088	0.00088

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00093	-0.00094	-0.00095
	(A2 * B1 * C1 * X)	0.00055	0.00055	0.00054
	(A2 * B1 * !C1 * !X)	-0.00082	-0.00083	-0.00082
	(A2 * B1 * !C1 * !X)	0.00084	0.00084	0.00084
	(A2 * !B1 * !C1 * !X)	-0.00076	-0.00078	-0.00077
	(A2 * !B1 * !C1 * !X)	0.00087	0.00087	0.00086
	(A1 * !A2 * B1 * C1 * X)	-0.00093	-0.00094	-0.00095
	(A1 * !A2 * B1 * C1 * X)	0.00055	0.00055	0.00054
	(A1 * !A2 * B1 * !C1 * !X)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * B1 * !C1 * !X)	0.00084	0.00083	0.00084
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00076	-0.00078	-0.00077
	(A1 * !A2 * !B1 * !C1 * !X)	0.00087	0.00087	0.00086
	(!A1 * !A2 * B1 * C1 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * B1 * C1 * !X)	0.00086	0.00086	0.00084
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !A2 * B1 * !C1 * !X)	0.00085	0.00085	0.00085
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00042	-0.00043	-0.00043
	(!A1 * !A2 * !B1 * C1 * !X)	0.00088	0.00088	0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00087	0.00087	0.00087

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00144	-0.00145	-0.00147
	(A2 * B1 * C1 * X)	0.00111	0.00111	0.00108
	(A2 * B1 * !C1 * !X)	-0.00126	-0.00127	-0.00126
	(A2 * B1 * !C1 * !X)	0.00164	0.00165	0.00164
	(A2 * !B1 * !C1 * !X)	-0.00117	-0.00120	-0.00119
	(A2 * !B1 * !C1 * !X)	0.00170	0.00170	0.00169
	(A1 * !A2 * B1 * C1 * X)	-0.00144	-0.00145	-0.00147
	(A1 * !A2 * B1 * C1 * X)	0.00111	0.00111	0.00108
	(A1 * !A2 * B1 * !C1 * !X)	-0.00126	-0.00127	-0.00126
	(A1 * !A2 * B1 * !C1 * !X)	0.00164	0.00165	0.00164
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00116	-0.00120	-0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	0.00169	0.00170	0.00169
	(!A1 * !A2 * B1 * C1 * !X)	-0.00061	-0.00061	-0.00062
	(!A1 * !A2 * B1 * C1 * !X)	0.00166	0.00166	0.00164
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00070	-0.00071	-0.00070
	(!A1 * !A2 * B1 * !C1 * !X)	0.00166	0.00166	0.00165
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00062	-0.00062	-0.00063
	(!A1 * !A2 * !B1 * C1 * !X)	0.00171	0.00172	0.00170
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00073	-0.00074	-0.00074
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00171	0.00171	0.00170

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	(A2 * !B1 * !B2 * !X)	0.00034	0.00034	0.00032
	(A2 * !B1 * !B2 * !X)	-0.00103	-0.00103	-0.00107
	(!A2 * !B1 * !B2 * !X)	0.00034	0.00034	0.00032
	(!A2 * !B1 * !B2 * !X)	-0.00103	-0.00103	-0.00107
	(!A1 * !A2 * B2 * !X)	0.00035	0.00035	0.00030
	(!A1 * !A2 * B2 * !X)	-0.00096	-0.00097	-0.00106
	(!A1 * !A2 * B1 * !B2 * !X)	0.00035	0.00035	0.00030
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00098	-0.00098	-0.00106
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00040	0.00040	0.00037
	(A2 * !B1 * !B2 * !X)	-0.00103	-0.00104	-0.00107
	(!A2 * !B1 * !B2 * !X)	0.00040	0.00040	0.00037
	(!A2 * !B1 * !B2 * !X)	-0.00103	-0.00104	-0.00107
	(!A1 * !A2 * B2 * !X)	0.00041	0.00041	0.00036
	(!A1 * !A2 * B2 * !X)	-0.00095	-0.00096	-0.00106
	(!A1 * !A2 * B1 * !B2 * !X)	0.00041	0.00041	0.00036
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00097	-0.00098	-0.00106
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00059	0.00059	0.00054
	(A2 * !B1 * !B2 * !X)	-0.00193	-0.00194	-0.00200
	(!A2 * !B1 * !B2 * !X)	0.00059	0.00058	0.00054
	(!A2 * !B1 * !B2 * !X)	-0.00193	-0.00194	-0.00200
	(!A1 * !A2 * B2 * !X)	0.00060	0.00060	0.00050
	(!A1 * !A2 * B2 * !X)	-0.00180	-0.00182	-0.00198
	(!A1 * !A2 * B1 * !B2 * !X)	0.00060	0.00060	0.00051
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00183	-0.00184	-0.00199

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	(A2 * !B1 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(A2 * !B1 * !B2 * !X)	0.00108	0.00107	0.00107
	(!A2 * !B1 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !B2 * !X)	0.00108	0.00107	0.00107
	(!A1 * !A2 * B2 * !X)	-0.00030	-0.00030	-0.00029
	(!A1 * !A2 * B2 * !X)	0.00108	0.00107	0.00107
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * B1 * !B2 * !X)	0.00108	0.00107	0.00107
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00037	-0.00036	-0.00036
	(A2 * !B1 * !B2 * !X)	0.00109	0.00108	0.00108
	(!A2 * !B1 * !B2 * !X)	-0.00037	-0.00036	-0.00036
	(!A2 * !B1 * !B2 * !X)	0.00109	0.00108	0.00108
	(!A1 * !A2 * B2 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * B2 * !X)	0.00107	0.00108	0.00108
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00036	-0.00036	-0.00035
	(!A1 * !A2 * B1 * !B2 * !X)	0.00109	0.00108	0.00108
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00053	-0.00052	-0.00052
	(A2 * !B1 * !B2 * !X)	0.00203	0.00202	0.00201
	(!A2 * !B1 * !B2 * !X)	-0.00053	-0.00052	-0.00052
	(!A2 * !B1 * !B2 * !X)	0.00203	0.00202	0.00201
	(!A1 * !A2 * B2 * !X)	-0.00051	-0.00050	-0.00050
	(!A1 * !A2 * B2 * !X)	0.00203	0.00202	0.00201
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00051	-0.00051	-0.00050
	(!A1 * !A2 * B1 * !B2 * !X)	0.00203	0.00202	0.00201

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	B2	Y
0	0	x	x	1
x	1	0	0	1
x	1	x	1	0
x	1	1	x	0
1	x	0	0	1
1	x	x	1	0
1	x	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22ai_1	9.59040
sky130_fd_sc_hs__o22ai_2	15.98400
sky130_fd_sc_hs__o22ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__o22ai_1	0.00248	0.00249	0.00258	0.00268	0.07532
sky130_fd_sc_hs__o22ai_2	0.00463	0.00488	0.00486	0.00487	0.14614
sky130_fd_sc_hs__o22ai_4	0.00960	0.00927	0.01020	0.00962	0.29040

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22ai_1	0.00000	0.00008	0.00011
sky130_fd_sc_hs__o22ai_2	0.00000	0.00017	0.00022
sky130_fd_sc_hs__o22ai_4	0.00000	0.00033	0.00044

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (FR)	0.81572	2.92141	14.40130
	A2->Y (FR)	0.73715	2.74963	13.81450
	B1->Y (FR)	0.51738	2.61022	14.07910
	B2->Y (FR)	0.45584	2.45718	13.51060
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.75735	2.61936	14.42350
	A2->Y (FR)	0.66838	2.43206	13.82140
	B1->Y (FR)	0.46334	2.31085	14.08920
	B2->Y (FR)	0.36631	2.09806	13.48100
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.70273	2.35052	14.42270
	A2->Y (FR)	0.61932	2.17575	13.84870
	B1->Y (FR)	0.43377	2.07830	14.19000
	B2->Y (FR)	0.34719	1.88988	13.60890

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.10516	0.81381	4.77780
	A2->Y (RF)	0.09925	0.80215	4.75647
	B1->Y (RF)	0.08810	0.81596	4.86993
	B2->Y (RF)	0.08300	0.80216	4.83516
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.10153	0.77744	4.80416
	A2->Y (RF)	0.09527	0.76345	4.77881
	B1->Y (RF)	0.08314	0.77733	4.93363
	B2->Y (RF)	0.07592	0.75564	4.88105
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.09589	0.72939	4.76328
	A2->Y (RF)	0.08927	0.71355	4.74075
	B1->Y (RF)	0.08089	0.73420	4.95000
	B2->Y (RF)	0.07760	0.72937	5.01630

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00084	0.00077	0.00075
	A1	0.00434	0.00426	0.00423
	A2	0.00089	0.00080	0.00078
	A2	0.00397	0.00389	0.00386
	B1	-0.00002	-0.00009	-0.00009
	B1	0.00293	0.00286	0.00286
	B2	0.00002	-0.00005	-0.00006
	B2	0.00261	0.00253	0.00253
sky130_fd_sc_hs__o22ai_2	A1	0.00146	0.00131	0.00128
	A1	0.00830	0.00814	0.00809
	A2	0.00142	0.00124	0.00121
	A2	0.00764	0.00745	0.00740
	B1	-0.00020	-0.00031	-0.00031
	B1	0.00564	0.00553	0.00553
	B2	-0.00023	-0.00035	-0.00034
	B2	0.00489	0.00477	0.00478
sky130_fd_sc_hs__o22ai_4	A1	0.00228	0.00199	0.00195
	A1	0.01594	0.01562	0.01558
	A2	0.00228	0.00195	0.00192
	A2	0.01443	0.01408	0.01405
	B1	-0.00055	-0.00077	-0.00076
	B1	0.01111	0.01085	0.01090
	B2	-0.00049	-0.00073	-0.00071
	B2	0.00968	0.00942	0.00949

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00436	0.00433	0.00425
	A1	0.00078	0.00074	0.00069
	A2	0.00367	0.00367	0.00362
	A2	0.00047	0.00046	0.00042
	B1	0.00369	0.00365	0.00358
	B1	0.00081	0.00076	0.00070
	B2	0.00308	0.00306	0.00301
	B2	0.00053	0.00051	0.00047
sky130_fd_sc_hs__o22ai_2	A1	0.00861	0.00852	0.00834
	A1	0.00163	0.00151	0.00138
	A2	0.00731	0.00728	0.00718
	A2	0.00086	0.00081	0.00073
	B1	0.00728	0.00717	0.00701
	B1	0.00163	0.00150	0.00137
	B2	0.00581	0.00577	0.00568
	B2	0.00080	0.00073	0.00066
sky130_fd_sc_hs__o22ai_4	A1	0.01658	0.01639	0.01610
	A1	0.00269	0.00248	0.00229
	A2	0.01392	0.01384	0.01371
	A2	0.00140	0.00127	0.00118
	B1	0.01406	0.01384	0.01360
	B1	0.00272	0.00247	0.00229
	B2	0.01149	0.01137	0.01123
	B2	0.00148	0.00133	0.00125

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00085	0.00085	0.00085
	(A2 * B2 * !Y)	-0.00091	-0.00092	-0.00091
	(A2 * B1 * !B2 * !Y)	0.00085	0.00085	0.00085
	(A2 * B1 * !B2 * !Y)	-0.00091	-0.00092	-0.00091
	(A2 * !B1 * !B2 * Y)	0.00085	0.00086	0.00085
	(A2 * !B1 * !B2 * Y)	-0.00091	-0.00092	-0.00091
	(!A2 * !B1 * !B2 * Y)	0.00079	0.00079	0.00079
	(!A2 * !B1 * !B2 * Y)	-0.00094	-0.00094	-0.00094
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00158	0.00159	0.00157
	(A2 * B2 * !Y)	-0.00177	-0.00180	-0.00179
	(A2 * B1 * !B2 * !Y)	0.00158	0.00159	0.00157
	(A2 * B1 * !B2 * !Y)	-0.00177	-0.00180	-0.00179
	(A2 * !B1 * !B2 * Y)	0.00157	0.00157	0.00156
	(A2 * !B1 * !B2 * Y)	-0.00179	-0.00182	-0.00181
	(!A2 * !B1 * !B2 * Y)	0.00145	0.00146	0.00145
	(!A2 * !B1 * !B2 * Y)	-0.00186	-0.00187	-0.00187
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00318	0.00319	0.00316
	(A2 * B2 * !Y)	-0.00349	-0.00356	-0.00353
	(A2 * B1 * !B2 * !Y)	0.00318	0.00319	0.00316
	(A2 * B1 * !B2 * !Y)	-0.00349	-0.00356	-0.00353
	(A2 * !B1 * !B2 * Y)	0.00307	0.00308	0.00306
	(A2 * !B1 * !B2 * Y)	-0.00361	-0.00367	-0.00364
	(!A2 * !B1 * !B2 * Y)	0.00280	0.00283	0.00281
	(!A2 * !B1 * !B2 * Y)	-0.00376	-0.00378	-0.00377

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00085	-0.00085	-0.00085
	(A2 * B2 * !Y)	0.00092	0.00092	0.00091
	(A2 * B1 * !B2 * !Y)	-0.00085	-0.00085	-0.00085
	(A2 * B1 * !B2 * !Y)	0.00092	0.00092	0.00091
	(A2 * !B1 * !B2 * Y)	-0.00085	-0.00085	-0.00085
	(A2 * !B1 * !B2 * Y)	0.00092	0.00092	0.00091
	(!A2 * !B1 * !B2 * Y)	-0.00077	-0.00079	-0.00079
	(!A2 * !B1 * !B2 * Y)	0.00094	0.00094	0.00094
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00158	-0.00158	-0.00157
	(A2 * B2 * !Y)	0.00180	0.00180	0.00179
	(A2 * B1 * !B2 * !Y)	-0.00158	-0.00158	-0.00157
	(A2 * B1 * !B2 * !Y)	0.00180	0.00180	0.00179
	(A2 * !B1 * !B2 * Y)	-0.00157	-0.00157	-0.00156
	(A2 * !B1 * !B2 * Y)	0.00182	0.00182	0.00181
	(!A2 * !B1 * !B2 * Y)	-0.00141	-0.00146	-0.00145
	(!A2 * !B1 * !B2 * Y)	0.00186	0.00189	0.00187
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00315	-0.00317	-0.00316
	(A2 * B2 * !Y)	0.00351	0.00356	0.00353
	(A2 * B1 * !B2 * !Y)	-0.00315	-0.00317	-0.00316
	(A2 * B1 * !B2 * !Y)	0.00352	0.00356	0.00353
	(A2 * !B1 * !B2 * Y)	-0.00305	-0.00306	-0.00305
	(A2 * !B1 * !B2 * Y)	0.00364	0.00367	0.00364
	(!A2 * !B1 * !B2 * Y)	-0.00276	-0.00283	-0.00281
	(!A2 * !B1 * !B2 * Y)	0.00380	0.00381	0.00378

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00084	0.00085	0.00084
	(A1 * B2 * !Y)	-0.00060	-0.00060	-0.00060
	(A1 * B1 * !B2 * !Y)	0.00084	0.00085	0.00084
	(A1 * B1 * !B2 * !Y)	-0.00060	-0.00060	-0.00060
	(A1 * !B1 * !B2 * Y)	0.00077	0.00078	0.00077
	(A1 * !B1 * !B2 * Y)	-0.00086	-0.00087	-0.00087
	(!A1 * !B1 * !B2 * Y)	0.00071	0.00071	0.00071
	(!A1 * !B1 * !B2 * Y)	-0.00090	-0.00090	-0.00089
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00181	0.00182	0.00181
	(A1 * B2 * !Y)	-0.00118	-0.00119	-0.00118
	(A1 * B1 * !B2 * !Y)	0.00181	0.00182	0.00181
	(A1 * B1 * !B2 * !Y)	-0.00119	-0.00119	-0.00118
	(A1 * !B1 * !B2 * Y)	0.00156	0.00157	0.00156
	(A1 * !B1 * !B2 * Y)	-0.00181	-0.00183	-0.00182
	(!A1 * !B1 * !B2 * Y)	0.00145	0.00144	0.00144
	(!A1 * !B1 * !B2 * Y)	-0.00188	-0.00188	-0.00189
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00330	0.00333	0.00332
	(A1 * B2 * !Y)	-0.00230	-0.00233	-0.00231
	(A1 * B1 * !B2 * !Y)	0.00331	0.00333	0.00332
	(A1 * B1 * !B2 * !Y)	-0.00231	-0.00233	-0.00231
	(A1 * !B1 * !B2 * Y)	0.00304	0.00304	0.00300
	(A1 * !B1 * !B2 * Y)	-0.00340	-0.00342	-0.00340
	(!A1 * !B1 * !B2 * Y)	0.00275	0.00278	0.00277
	(!A1 * !B1 * !B2 * Y)	-0.00354	-0.00356	-0.00355

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00082	-0.00083	-0.00084
	(A1 * B2 * !Y)	0.00062	0.00062	0.00060
	(A1 * B1 * !B2 * !Y)	-0.00083	-0.00083	-0.00084
	(A1 * B1 * !B2 * !Y)	0.00062	0.00062	0.00060
	(A1 * !B1 * !B2 * Y)	-0.00077	-0.00077	-0.00076
	(A1 * !B1 * !B2 * Y)	0.00087	0.00087	0.00087
	(!A1 * !B1 * !B2 * Y)	-0.00070	-0.00071	-0.00071
	(!A1 * !B1 * !B2 * Y)	0.00090	0.00090	0.00090
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00176	-0.00177	-0.00181
	(A1 * B2 * !Y)	0.00124	0.00123	0.00119
	(A1 * B1 * !B2 * !Y)	-0.00176	-0.00177	-0.00181
	(A1 * B1 * !B2 * !Y)	0.00124	0.00123	0.00119
	(A1 * !B1 * !B2 * Y)	-0.00156	-0.00156	-0.00156
	(A1 * !B1 * !B2 * Y)	0.00183	0.00183	0.00182
	(!A1 * !B1 * !B2 * Y)	-0.00141	-0.00144	-0.00144
	(!A1 * !B1 * !B2 * Y)	0.00188	0.00190	0.00189
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00325	-0.00327	-0.00332
	(A1 * B2 * !Y)	0.00238	0.00238	0.00233
	(A1 * B1 * !B2 * !Y)	-0.00326	-0.00327	-0.00332
	(A1 * B1 * !B2 * !Y)	0.00239	0.00238	0.00233
	(A1 * !B1 * !B2 * Y)	-0.00301	-0.00301	-0.00300
	(A1 * !B1 * !B2 * Y)	0.00342	0.00342	0.00340
	(!A1 * !B1 * !B2 * Y)	-0.00270	-0.00278	-0.00277
	(!A1 * !B1 * !B2 * Y)	0.00355	0.00357	0.00356

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00088	0.00089	0.00088
	(A2 * B2 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * !A2 * B2 * !Y)	0.00088	0.00089	0.00088
	(A1 * !A2 * B2 * !Y)	-0.00088	-0.00089	-0.00089
	(!A1 * !A2 * B2 * Y)	0.00036	0.00036	0.00036
	(!A1 * !A2 * B2 * Y)	-0.00110	-0.00111	-0.00110
	(!A1 * !A2 * !B2 * Y)	0.00042	0.00041	0.00038
	(!A1 * !A2 * !B2 * Y)	-0.00106	-0.00107	-0.00112
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00156	0.00157	0.00156
	(A2 * B2 * !Y)	-0.00180	-0.00183	-0.00182
	(A1 * !A2 * B2 * !Y)	0.00156	0.00157	0.00156
	(A1 * !A2 * B2 * !Y)	-0.00180	-0.00184	-0.00182
	(!A1 * !A2 * B2 * Y)	0.00062	0.00062	0.00061
	(!A1 * !A2 * B2 * Y)	-0.00215	-0.00219	-0.00217
	(!A1 * !A2 * !B2 * Y)	0.00072	0.00072	0.00065
	(!A1 * !A2 * !B2 * Y)	-0.00211	-0.00213	-0.00224
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00339	0.00338	0.00335
	(A2 * B2 * !Y)	-0.00340	-0.00346	-0.00343
	(A1 * !A2 * B2 * !Y)	0.00338	0.00338	0.00335
	(A1 * !A2 * B2 * !Y)	-0.00340	-0.00347	-0.00343
	(!A1 * !A2 * B2 * Y)	0.00117	0.00117	0.00117
	(!A1 * !A2 * B2 * Y)	-0.00441	-0.00447	-0.00444
	(!A1 * !A2 * !B2 * Y)	0.00135	0.00134	0.00122
	(!A1 * !A2 * !B2 * Y)	-0.00434	-0.00436	-0.00453

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00088	-0.00088	-0.00088
	(A2 * B2 * !Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * B2 * !Y)	-0.00088	-0.00088	-0.00088
	(A1 * !A2 * B2 * !Y)	0.00089	0.00089	0.00089
	(!A1 * !A2 * B2 * Y)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * B2 * Y)	0.00111	0.00111	0.00110
	(!A1 * !A2 * !B2 * Y)	-0.00036	-0.00037	-0.00037
	(!A1 * !A2 * !B2 * Y)	0.00112	0.00114	0.00113
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00156	-0.00157	-0.00156
	(A2 * B2 * !Y)	0.00182	0.00183	0.00182
	(A1 * !A2 * B2 * !Y)	-0.00155	-0.00157	-0.00156
	(A1 * !A2 * B2 * !Y)	0.00181	0.00184	0.00182
	(!A1 * !A2 * B2 * Y)	-0.00061	-0.00062	-0.00061
	(!A1 * !A2 * B2 * Y)	0.00217	0.00219	0.00217
	(!A1 * !A2 * !B2 * Y)	-0.00063	-0.00062	-0.00062
	(!A1 * !A2 * !B2 * Y)	0.00227	0.00226	0.00225
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00337	-0.00338	-0.00335
	(A2 * B2 * !Y)	0.00345	0.00346	0.00343
	(A1 * !A2 * B2 * !Y)	-0.00336	-0.00338	-0.00335
	(A1 * !A2 * B2 * !Y)	0.00343	0.00347	0.00343
	(!A1 * !A2 * B2 * Y)	-0.00117	-0.00117	-0.00117
	(!A1 * !A2 * B2 * Y)	0.00446	0.00447	0.00444
	(!A1 * !A2 * !B2 * Y)	-0.00118	-0.00118	-0.00118
	(!A1 * !A2 * !B2 * Y)	0.00454	0.00457	0.00455

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00091	0.00092	0.00091
	(A2 * B1 * !Y)	-0.00058	-0.00058	-0.00058
	(A1 * !A2 * B1 * !Y)	0.00091	0.00092	0.00091
	(A1 * !A2 * B1 * !Y)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * B1 * Y)	0.00030	0.00030	0.00030
	(!A1 * !A2 * B1 * Y)	-0.00108	-0.00110	-0.00109
	(!A1 * !A2 * !B1 * Y)	0.00035	0.00035	0.00032
	(!A1 * !A2 * !B1 * Y)	-0.00105	-0.00106	-0.00112
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00174	0.00174	0.00173
	(A2 * B1 * !Y)	-0.00120	-0.00119	-0.00119
	(A1 * !A2 * B1 * !Y)	0.00174	0.00174	0.00173
	(A1 * !A2 * B1 * !Y)	-0.00120	-0.00120	-0.00119
	(!A1 * !A2 * B1 * Y)	0.00059	0.00059	0.00058
	(!A1 * !A2 * B1 * Y)	-0.00212	-0.00214	-0.00213
	(!A1 * !A2 * !B1 * Y)	0.00069	0.00068	0.00062
	(!A1 * !A2 * !B1 * Y)	-0.00208	-0.00209	-0.00219
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00339	0.00338	0.00336
	(A2 * B1 * !Y)	-0.00237	-0.00234	-0.00233
	(A1 * !A2 * B1 * !Y)	0.00338	0.00339	0.00336
	(A1 * !A2 * B1 * !Y)	-0.00237	-0.00235	-0.00233
	(!A1 * !A2 * B1 * Y)	0.00112	0.00112	0.00111
	(!A1 * !A2 * B1 * Y)	-0.00417	-0.00420	-0.00417
	(!A1 * !A2 * !B1 * Y)	0.00128	0.00127	0.00116
	(!A1 * !A2 * !B1 * Y)	-0.00410	-0.00411	-0.00429

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00090	-0.00090	-0.00091
	(A2 * B1 * !Y)	0.00060	0.00059	0.00058
	(A1 * !A2 * B1 * !Y)	-0.00090	-0.00090	-0.00091
	(A1 * !A2 * B1 * !Y)	0.00060	0.00059	0.00058
	(!A1 * !A2 * B1 * Y)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * B1 * Y)	0.00109	0.00110	0.00109
	(!A1 * !A2 * !B1 * Y)	-0.00031	-0.00031	-0.00030
	(!A1 * !A2 * !B1 * Y)	0.00112	0.00113	0.00112
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00168	-0.00169	-0.00173
	(A2 * B1 * !Y)	0.00124	0.00124	0.00120
	(A1 * !A2 * B1 * !Y)	-0.00167	-0.00169	-0.00173
	(A1 * !A2 * B1 * !Y)	0.00123	0.00124	0.00120
	(!A1 * !A2 * B1 * Y)	-0.00059	-0.00059	-0.00058
	(!A1 * !A2 * B1 * Y)	0.00213	0.00214	0.00213
	(!A1 * !A2 * !B1 * Y)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * !B1 * Y)	0.00220	0.00222	0.00220
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00329	-0.00332	-0.00336
	(A2 * B1 * !Y)	0.00240	0.00241	0.00234
	(A1 * !A2 * B1 * !Y)	-0.00329	-0.00332	-0.00336
	(A1 * !A2 * B1 * !Y)	0.00240	0.00241	0.00234
	(!A1 * !A2 * B1 * Y)	-0.00112	-0.00112	-0.00111
	(!A1 * !A2 * B1 * Y)	0.00418	0.00420	0.00417
	(!A1 * !A2 * !B1 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * !A2 * !B1 * Y)	0.00430	0.00435	0.00431

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	B1	B2	X
0	0	x	x	0
x	1	0	0	0
x	1	x	1	1
x	1	1	x	1
1	x	0	0	0
1	x	x	1	1
1	x	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22a_1	12.78720
sky130_fd_sc_hs__o22a_2	12.78720
sky130_fd_sc_hs__o22a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__o22a_1	0.00213	0.00226	0.00236	0.00256	0.19159
sky130_fd_sc_hs__o22a_2	0.00230	0.00238	0.00250	0.00251	0.37708
sky130_fd_sc_hs__o22a_4	0.00449	0.00419	0.00467	0.00447	0.72275

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22a_1	0.00000	0.00012	0.00015
sky130_fd_sc_hs__o22a_2	0.00000	0.00016	0.00019
sky130_fd_sc_hs__o22a_4	0.00000	0.00032	0.00038

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (RR)	0.29665	1.69082	9.94967
	A2->X (RR)	0.28795	1.67352	9.87932
	B1->X (RR)	0.28162	1.66432	9.68207
	B2->X (RR)	0.27098	1.64211	9.59918
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.28652	1.51057	10.04420
	A2->X (RR)	0.27643	1.49548	9.99013
	B1->X (RR)	0.27151	1.50163	9.84121
	B2->X (RR)	0.25815	1.47845	9.77087
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.29482	1.39191	10.09030
	A2->X (RR)	0.29548	1.37996	10.03120
	B1->X (RR)	0.27833	1.37913	9.88525
	B2->X (RR)	0.27857	1.37613	9.84671

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.97593	2.08901	8.42445
	A2->X (FF)	0.91458	1.92597	7.87877
	B1->X (FF)	0.78311	1.88673	8.11985
	B2->X (FF)	0.71584	1.72900	7.58233
sky130_fd_sc_hs__o22a_2	A1->X (FF)	1.28390	2.41910	8.93430
	A2->X (FF)	1.21732	2.24853	8.42546
	B1->X (FF)	1.05934	2.17908	8.63657
	B2->X (FF)	0.98828	2.01081	8.13275
sky130_fd_sc_hs__o22a_4	A1->X (FF)	1.21617	2.31951	8.86515
	A2->X (FF)	1.14067	2.13849	8.34932
	B1->X (FF)	1.03554	2.12876	8.62984
	B2->X (FF)	0.96714	1.95860	8.12322

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00553	0.00555	0.00551
	A1	0.00236	0.00237	0.00234
	A2	0.00498	0.00499	0.00492
	A2	0.00206	0.00207	0.00201
	B1	0.00496	0.00494	0.00488
	B1	0.00234	0.00231	0.00226
	B2	0.00464	0.00461	0.00454
	B2	0.00211	0.00208	0.00202
sky130_fd_sc_hs__o22a_2	A1	0.00712	0.00722	0.00724
	A1	0.00376	0.00386	0.00389
	A2	0.00651	0.00662	0.00661
	A2	0.00345	0.00356	0.00356
	B1	0.00650	0.00655	0.00654
	B1	0.00378	0.00385	0.00383
	B2	0.00591	0.00596	0.00592
	B2	0.00349	0.00355	0.00352
sky130_fd_sc_hs__o22a_4	A1	0.01401	0.01422	0.01428
	A1	0.00768	0.00788	0.00796
	A2	0.01261	0.01281	0.01284
	A2	0.00699	0.00719	0.00724
	B1	0.01293	0.01306	0.01308
	B1	0.00767	0.00780	0.00793
	B2	0.01155	0.01165	0.01163
	B2	0.00700	0.00712	0.00710

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00231	0.00233	0.00230
	A1	0.00537	0.00539	0.00534
	A2	0.00223	0.00222	0.00247
	A2	0.00509	0.00508	0.00502
	B1	0.00175	0.00175	0.00172
	B1	0.00443	0.00442	0.00439
	B2	0.00148	0.00146	0.00164
	B2	0.00405	0.00402	0.00399
sky130_fd_sc_hs__o22a_2	A1	0.00359	0.00372	0.00374
	A1	0.00686	0.00700	0.00699
	A2	0.00362	0.00372	0.00373
	A2	0.00657	0.00668	0.00666
	B1	0.00289	0.00299	0.00300
	B1	0.00564	0.00574	0.00574
	B2	0.00289	0.00296	0.00297
	B2	0.00532	0.00540	0.00540
sky130_fd_sc_hs__o22a_4	A1	0.00680	0.00711	0.00718
	A1	0.01292	0.01323	0.01326
	A2	0.00702	0.00726	0.00735
	A2	0.01236	0.01260	0.01263
	B1	0.00578	0.00604	0.00596
	B1	0.01112	0.01139	0.01144
	B2	0.00603	0.00620	0.00625
	B2	0.01061	0.01079	0.01083

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00068	0.00068	0.00068
	(A2 * B2 * X)	-0.00083	-0.00085	-0.00084
	(A2 * B1 * !B2 * X)	0.00068	0.00068	0.00068
	(A2 * B1 * !B2 * X)	-0.00083	-0.00085	-0.00084
	(A2 * !B1 * !B2 * !X)	0.00068	0.00068	0.00068
	(A2 * !B1 * !B2 * !X)	-0.00083	-0.00085	-0.00084
	(!A2 * !B1 * !B2 * !X)	0.00062	0.00062	0.00062
	(!A2 * !B1 * !B2 * !X)	-0.00086	-0.00087	-0.00086
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00081	0.00081	0.00081
	(A2 * B2 * X)	-0.00082	-0.00083	-0.00083
	(A2 * B1 * !B2 * X)	0.00081	0.00081	0.00081
	(A2 * B1 * !B2 * X)	-0.00082	-0.00083	-0.00083
	(A2 * !B1 * !B2 * !X)	0.00081	0.00081	0.00081
	(A2 * !B1 * !B2 * !X)	-0.00082	-0.00083	-0.00083
	(!A2 * !B1 * !B2 * !X)	0.00075	0.00076	0.00075
	(!A2 * !B1 * !B2 * !X)	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00155	0.00156	0.00154
	(A2 * B2 * X)	-0.00157	-0.00160	-0.00159
	(A2 * B1 * !B2 * X)	0.00155	0.00156	0.00154
	(A2 * B1 * !B2 * X)	-0.00157	-0.00160	-0.00159
	(A2 * !B1 * !B2 * !X)	0.00150	0.00152	0.00149
	(A2 * !B1 * !B2 * !X)	-0.00162	-0.00165	-0.00164
	(!A2 * !B1 * !B2 * !X)	0.00138	0.00138	0.00138
	(!A2 * !B1 * !B2 * !X)	-0.00169	-0.00169	-0.00169

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00068	-0.00068	-0.00068
	(A2 * B2 * X)	0.00085	0.00085	0.00084
	(A2 * B1 * !B2 * X)	-0.00068	-0.00068	-0.00068
	(A2 * B1 * !B2 * X)	0.00085	0.00085	0.00084
	(A2 * !B1 * !B2 * !X)	-0.00068	-0.00068	-0.00068
	(A2 * !B1 * !B2 * !X)	0.00085	0.00085	0.00084
	(!A2 * !B1 * !B2 * !X)	-0.00061	-0.00062	-0.00062
	(!A2 * !B1 * !B2 * !X)	0.00087	0.00087	0.00086
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00081	-0.00081	-0.00080
	(A2 * B2 * X)	0.00084	0.00083	0.00083
	(A2 * B1 * !B2 * X)	-0.00081	-0.00081	-0.00080
	(A2 * B1 * !B2 * X)	0.00084	0.00083	0.00083
	(A2 * !B1 * !B2 * !X)	-0.00081	-0.00081	-0.00080
	(A2 * !B1 * !B2 * !X)	0.00084	0.00083	0.00083
	(!A2 * !B1 * !B2 * !X)	-0.00074	-0.00076	-0.00075
	(!A2 * !B1 * !B2 * !X)	0.00086	0.00086	0.00085
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00154	-0.00154	-0.00154
	(A2 * B2 * X)	0.00159	0.00160	0.00159
	(A2 * B1 * !B2 * X)	-0.00154	-0.00154	-0.00154
	(A2 * B1 * !B2 * X)	0.00159	0.00160	0.00159
	(A2 * !B1 * !B2 * !X)	-0.00149	-0.00150	-0.00149
	(A2 * !B1 * !B2 * !X)	0.00164	0.00165	0.00164
	(!A2 * !B1 * !B2 * !X)	-0.00135	-0.00138	-0.00138
	(!A2 * !B1 * !B2 * !X)	0.00169	0.00170	0.00169

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00077	0.00077	0.00076
	(A1 * B2 * X)	-0.00055	-0.00055	-0.00055
	(A1 * B1 * !B2 * X)	0.00077	0.00077	0.00076
	(A1 * B1 * !B2 * X)	-0.00055	-0.00055	-0.00055
	(A1 * !B1 * !B2 * !X)	0.00065	0.00066	0.00065
	(A1 * !B1 * !B2 * !X)	-0.00083	-0.00084	-0.00084
	(!A1 * !B1 * !B2 * !X)	0.00059	0.00060	0.00060
	(!A1 * !B1 * !B2 * !X)	-0.00086	-0.00086	-0.00086
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00084	0.00084	0.00084
	(A1 * B2 * X)	-0.00056	-0.00056	-0.00055
	(A1 * B1 * !B2 * X)	0.00084	0.00084	0.00084
	(A1 * B1 * !B2 * X)	-0.00056	-0.00056	-0.00055
	(A1 * !B1 * !B2 * !X)	0.00077	0.00077	0.00077
	(A1 * !B1 * !B2 * !X)	-0.00079	-0.00080	-0.00080
	(!A1 * !B1 * !B2 * !X)	0.00071	0.00072	0.00071
	(!A1 * !B1 * !B2 * !X)	-0.00082	-0.00082	-0.00082
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00145	0.00144	0.00144
	(A1 * B2 * X)	-0.00110	-0.00110	-0.00109
	(A1 * B1 * !B2 * X)	0.00145	0.00144	0.00144
	(A1 * B1 * !B2 * X)	-0.00110	-0.00110	-0.00109
	(A1 * !B1 * !B2 * !X)	0.00126	0.00126	0.00126
	(A1 * !B1 * !B2 * !X)	-0.00161	-0.00163	-0.00162
	(!A1 * !B1 * !B2 * !X)	0.00115	0.00116	0.00115
	(!A1 * !B1 * !B2 * !X)	-0.00169	-0.00170	-0.00169

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00075	-0.00075	-0.00076
	(A1 * B2 * X)	0.00057	0.00057	0.00055
	(A1 * B1 * !B2 * X)	-0.00075	-0.00075	-0.00076
	(A1 * B1 * !B2 * X)	0.00057	0.00057	0.00055
	(A1 * !B1 * !B2 * !X)	-0.00065	-0.00066	-0.00065
	(A1 * !B1 * !B2 * !X)	0.00084	0.00084	0.00084
	(!A1 * !B1 * !B2 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * !B1 * !B2 * !X)	0.00087	0.00087	0.00086
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00082	-0.00082	-0.00084
	(A1 * B2 * X)	0.00057	0.00057	0.00056
	(A1 * B1 * !B2 * X)	-0.00081	-0.00082	-0.00084
	(A1 * B1 * !B2 * X)	0.00057	0.00057	0.00056
	(A1 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !B1 * !B2 * !X)	0.00080	0.00080	0.00080
	(!A1 * !B1 * !B2 * !X)	-0.00070	-0.00072	-0.00071
	(!A1 * !B1 * !B2 * !X)	0.00082	0.00082	0.00082
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00140	-0.00141	-0.00144
	(A1 * B2 * X)	0.00113	0.00113	0.00110
	(A1 * B1 * !B2 * X)	-0.00140	-0.00141	-0.00144
	(A1 * B1 * !B2 * X)	0.00113	0.00113	0.00110
	(A1 * !B1 * !B2 * !X)	-0.00126	-0.00126	-0.00126
	(A1 * !B1 * !B2 * !X)	0.00163	0.00163	0.00162
	(!A1 * !B1 * !B2 * !X)	-0.00113	-0.00116	-0.00115
	(!A1 * !B1 * !B2 * !X)	0.00170	0.00170	0.00169

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00073	0.00073	0.00073
	(A2 * B2 * X)	-0.00085	-0.00086	-0.00086
	(A1 * !A2 * B2 * X)	0.00073	0.00073	0.00073
	(A1 * !A2 * B2 * X)	-0.00085	-0.00086	-0.00086
	(!A1 * !A2 * B2 * !X)	0.00025	0.00025	0.00025
	(!A1 * !A2 * B2 * !X)	-0.00107	-0.00109	-0.00108
	(!A1 * !A2 * !B2 * !X)	0.00029	0.00029	0.00026
	(!A1 * !A2 * !B2 * !X)	-0.00105	-0.00105	-0.00110
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00085	0.00086	0.00085
	(A2 * B2 * X)	-0.00079	-0.00080	-0.00080
	(A1 * !A2 * B2 * X)	0.00085	0.00086	0.00085
	(A1 * !A2 * B2 * X)	-0.00079	-0.00080	-0.00080
	(!A1 * !A2 * B2 * !X)	0.00031	0.00031	0.00031
	(!A1 * !A2 * B2 * !X)	-0.00104	-0.00106	-0.00105
	(!A1 * !A2 * !B2 * !X)	0.00036	0.00035	0.00032
	(!A1 * !A2 * !B2 * !X)	-0.00101	-0.00101	-0.00107
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00162	0.00164	0.00162
	(A2 * B2 * X)	-0.00156	-0.00158	-0.00158
	(A1 * !A2 * B2 * X)	0.00162	0.00163	0.00162
	(A1 * !A2 * B2 * X)	-0.00156	-0.00158	-0.00158
	(!A1 * !A2 * B2 * !X)	0.00076	0.00077	0.00076
	(!A1 * !A2 * B2 * !X)	-0.00191	-0.00193	-0.00193
	(!A1 * !A2 * !B2 * !X)	0.00083	0.00083	0.00079
	(!A1 * !A2 * !B2 * !X)	-0.00188	-0.00189	-0.00197

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00073	-0.00073	-0.00072
	(A2 * B2 * X)	0.00087	0.00086	0.00086
	(A1 * !A2 * B2 * X)	-0.00073	-0.00073	-0.00072
	(A1 * !A2 * B2 * X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * B2 * !X)	-0.00025	-0.00025	-0.00025
	(!A1 * !A2 * B2 * !X)	0.00108	0.00109	0.00108
	(!A1 * !A2 * !B2 * !X)	-0.00026	-0.00026	-0.00025
	(!A1 * !A2 * !B2 * !X)	0.00111	0.00111	0.00110
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00085	-0.00085	-0.00085
	(A2 * B2 * X)	0.00081	0.00080	0.00080
	(A1 * !A2 * B2 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A2 * B2 * X)	0.00081	0.00080	0.00080
	(!A1 * !A2 * B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * B2 * !X)	0.00106	0.00106	0.00105
	(!A1 * !A2 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * !B2 * !X)	0.00108	0.00108	0.00107
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00162	-0.00163	-0.00162
	(A2 * B2 * X)	0.00159	0.00158	0.00158
	(A1 * !A2 * B2 * X)	-0.00162	-0.00162	-0.00162
	(A1 * !A2 * B2 * X)	0.00159	0.00158	0.00158
	(!A1 * !A2 * B2 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A2 * B2 * !X)	0.00194	0.00193	0.00193
	(!A1 * !A2 * !B2 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A2 * !B2 * !X)	0.00197	0.00197	0.00198

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00101	0.00101	0.00100
	(A2 * B1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * !A2 * B1 * X)	0.00101	0.00101	0.00100
	(A1 * !A2 * B1 * X)	-0.00054	-0.00054	-0.00053
	(!A1 * !A2 * B1 * !X)	0.00049	0.00049	0.00049
	(!A1 * !A2 * B1 * !X)	-0.00094	-0.00096	-0.00095
	(!A1 * !A2 * !B1 * !X)	0.00053	0.00053	0.00050
	(!A1 * !A2 * !B1 * !X)	-0.00092	-0.00093	-0.00097
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00086	0.00086	0.00086
	(A2 * B1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * B1 * X)	0.00086	0.00086	0.00086
	(A1 * !A2 * B1 * X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * B1 * !X)	0.00030	0.00030	0.00030
	(!A1 * !A2 * B1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1 * !A2 * !B1 * !X)	0.00035	0.00035	0.00031
	(!A1 * !A2 * !B1 * !X)	-0.00095	-0.00095	-0.00101
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00153	0.00153	0.00152
	(A2 * B1 * X)	-0.00110	-0.00109	-0.00108
	(A1 * !A2 * B1 * X)	0.00151	0.00153	0.00152
	(A1 * !A2 * B1 * X)	-0.00107	-0.00109	-0.00108
	(!A1 * !A2 * B1 * !X)	0.00047	0.00048	0.00048
	(!A1 * !A2 * B1 * !X)	-0.00194	-0.00197	-0.00196
	(!A1 * !A2 * !B1 * !X)	0.00055	0.00055	0.00050
	(!A1 * !A2 * !B1 * !X)	-0.00193	-0.00193	-0.00201

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00100	-0.00100	-0.00100
	(A2 * B1 * X)	0.00055	0.00055	0.00054
	(A1 * !A2 * B1 * X)	-0.00099	-0.00100	-0.00100
	(A1 * !A2 * B1 * X)	0.00055	0.00055	0.00054
	(!A1 * !A2 * B1 * !X)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * B1 * !X)	0.00096	0.00096	0.00095
	(!A1 * !A2 * !B1 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !B1 * !X)	0.00097	0.00098	0.00098
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00085	-0.00085	-0.00086
	(A2 * B1 * X)	0.00056	0.00056	0.00054
	(A1 * !A2 * B1 * X)	-0.00085	-0.00085	-0.00086
	(A1 * !A2 * B1 * X)	0.00056	0.00056	0.00054
	(!A1 * !A2 * B1 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * B1 * !X)	0.00099	0.00099	0.00098
	(!A1 * !A2 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * !B1 * !X)	0.00101	0.00101	0.00101
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00149	-0.00150	-0.00152
	(A2 * B1 * X)	0.00112	0.00112	0.00109
	(A1 * !A2 * B1 * X)	-0.00149	-0.00150	-0.00152
	(A1 * !A2 * B1 * X)	0.00112	0.00112	0.00109
	(!A1 * !A2 * B1 * !X)	-0.00047	-0.00048	-0.00048
	(!A1 * !A2 * B1 * !X)	0.00197	0.00197	0.00196
	(!A1 * !A2 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(!A1 * !A2 * !B1 * !X)	0.00201	0.00202	0.00202

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1_N	A2_N	B1	B2	Y
x	x	0	0	1
0	x	x	1	0
0	x	1	x	0
1	0	x	1	0
1	0	1	x	0
1	1	x	1	1
1	1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2ai_1	11.18880
sky130_fd_sc_hs__o2bb2ai_2	19.18080
sky130_fd_sc_hs__o2bb2ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__o2bb2ai_1	0.00202	0.00224	0.00243	0.00262	0.07602
sky130_fd_sc_hs__o2bb2ai_2	0.00465	0.00409	0.00494	0.00464	0.15223
sky130_fd_sc_hs__o2bb2ai_4	0.00947	0.00972	0.00910	0.00957	0.29036

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.00012	0.00014
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.00023	0.00028
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.00048	0.00056

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2bb2ai_1	A1_N->Y (RR)	0.27333	1.27379	5.64209
	A2_N->Y (RR)	0.26823	1.25694	5.44206
	B1->Y (FR)	0.62839	2.74120	14.27030
	B2->Y (FR)	0.56934	2.58472	13.70150
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.23245	1.13005	5.61410
	A2_N->Y (RR)	0.22321	1.10136	5.37651
	B1->Y (FR)	0.55300	2.40558	14.28130
	B2->Y (FR)	0.46984	2.23197	13.68860
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.24087	1.04467	5.52981
	A2_N->Y (RR)	0.23230	1.02682	5.29092
	B1->Y (FR)	0.55429	2.20801	14.31490
	B2->Y (FR)	0.47383	2.03066	13.73580

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2bb2ai_1	A1_N->Y (FF)	0.43211	1.43137	6.81639
	A2_N->Y (FF)	0.39353	1.38838	6.70594
	B1->Y (RF)	0.09717	0.79077	4.75403
	B2->Y (RF)	0.09044	0.77817	4.72979
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.39556	1.37368	6.75246
	A2_N->Y (FF)	0.36416	1.34153	6.63310
	B1->Y (RF)	0.08742	0.73854	4.74250
	B2->Y (RF)	0.08359	0.72544	4.72723
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.40770	1.39979	7.14601
	A2_N->Y (FF)	0.35508	1.34719	6.97464
	B1->Y (RF)	0.09251	0.71019	4.77361
	B2->Y (RF)	0.08453	0.69201	4.73776

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00411	0.00408	0.00404
	A1_N	0.00234	0.00231	0.00227
	A2_N	0.00381	0.00373	0.00367
	A2_N	0.00236	0.00228	0.00222
	B1	0.00027	0.00022	0.00021
	B1	0.00262	0.00257	0.00255
	B2	0.00027	0.00021	0.00019
	B2	0.00239	0.00231	0.00230
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00758	0.00750	0.00745
	A1_N	0.00367	0.00359	0.00352
	A2_N	0.00661	0.00648	0.00641
	A2_N	0.00384	0.00369	0.00362
	B1	0.00032	0.00021	0.00019
	B1	0.00502	0.00491	0.00489
	B2	0.00035	0.00023	0.00021
	B2	0.00420	0.00407	0.00407
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01658	0.01641	0.01636
	A1_N	0.00810	0.00796	0.00793
	A2_N	0.01473	0.01433	0.01420
	A2_N	0.00811	0.00774	0.00760
	B1	0.00046	0.00024	0.00022
	B1	0.00979	0.00954	0.00953
	B2	0.00038	0.00008	0.00008
	B2	0.00849	0.00820	0.00818

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00285	0.00274	0.00274
	A1_N	0.00462	0.00454	0.00447
	A2_N	0.00268	0.00241	0.00249
	A2_N	0.00417	0.00402	0.00398
	B1	0.00334	0.00330	0.00326
	B1	0.00098	0.00094	0.00091
	B2	0.00277	0.00277	0.00275
	B2	0.00063	0.00061	0.00060
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00505	0.00481	0.00475
	A1_N	0.00895	0.00874	0.00859
	A2_N	0.00474	0.00435	0.00443
	A2_N	0.00759	0.00735	0.00727
	B1	0.00641	0.00632	0.00625
	B1	0.00173	0.00162	0.00156
	B2	0.00501	0.00500	0.00499
	B2	0.00111	0.00107	0.00106
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01086	0.01040	0.01021
	A1_N	0.01927	0.01886	0.01853
	A2_N	0.00965	0.00913	0.00887
	A2_N	0.01645	0.01588	0.01563
	B1	0.01325	0.01304	0.01289
	B1	0.00395	0.00372	0.00360
	B2	0.01058	0.01050	0.01054
	B2	0.00234	0.00221	0.00225

Passive power(pJ) for A1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A2_N * !B1 * !B2 * Y)	0.00338	0.00332	0.00329
	(A2_N * !B1 * !B2 * Y)	0.00120	0.00113	0.00110
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00065	0.00065	0.00065
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00072	-0.00072	-0.00072
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00661	0.00645	0.00638
	(A2_N * !B1 * !B2 * Y)	0.00189	0.00173	0.00165
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00127	0.00127	0.00126
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00176	-0.00177	-0.00176
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.01449	0.01415	0.01400
	(A2_N * !B1 * !B2 * Y)	0.00437	0.00400	0.00384
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00288	0.00289	0.00286
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00372	-0.00373	-0.00371

Passive power(pJ) for A1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A2_N * !B1 * !B2 * Y)	0.00035	0.00028	0.00023
	(A2_N * !B1 * !B2 * Y)	0.00256	0.00248	0.00241
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00064	-0.00065	-0.00065
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00072	0.00072	0.00072
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00053	0.00035	0.00022
	(A2_N * !B1 * !B2 * Y)	0.00530	0.00510	0.00493
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00124	-0.00127	-0.00126
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00176	0.00178	0.00177
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00123	0.00084	0.00056
	(A2_N * !B1 * !B2 * Y)	0.01148	0.01108	0.01068
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00282	-0.00289	-0.00286
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00374	0.00375	0.00372

Passive power(pJ) for A2_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * !B1 * !B2 * Y)	0.00313	0.00303	0.00298
	(A1_N * !B1 * !B2 * Y)	0.00122	0.00112	0.00107
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00028	0.00028	0.00027
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00091	-0.00091	-0.00092
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00576	0.00558	0.00548
	(A1_N * !B1 * !B2 * Y)	0.00207	0.00188	0.00179
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00053	0.00053	0.00051
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00168	-0.00169	-0.00172
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.01290	0.01246	0.01221
	(A1_N * !B1 * !B2 * Y)	0.00437	0.00389	0.00366
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00123	0.00124	0.00118
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00432	-0.00435	-0.00444

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * !B1 * !B2 * Y)	0.00017	0.00006	0.00002
	(A1_N * !B1 * !B2 * Y)	0.00210	0.00199	0.00193
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00027	-0.00027	-0.00027
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00093	0.00093	0.00092
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00019	-0.00000	-0.00009
	(A1_N * !B1 * !B2 * Y)	0.00390	0.00372	0.00362
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00050	-0.00051	-0.00050
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00171	0.00174	0.00172
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00005	-0.00054	-0.00072
	(A1_N * !B1 * !B2 * Y)	0.00857	0.00805	0.00787
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00114	-0.00116	-0.00114
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00444	0.00449	0.00444

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * A2_N * B2 * Y)	0.00081	0.00081	0.00081
	(A1_N * A2_N * B2 * Y)	-0.00090	-0.00091	-0.00091
	(A1_N * A2_N * !B2 * Y)	0.00077	0.00076	0.00076
	(A1_N * A2_N * !B2 * Y)	-0.00093	-0.00093	-0.00093
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00081	0.00081	0.00081
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00090	-0.00091	-0.00090
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00160	0.00161	0.00160
	(A1_N * A2_N * B2 * Y)	-0.00184	-0.00187	-0.00185
	(A1_N * A2_N * !B2 * Y)	0.00153	0.00153	0.00153
	(A1_N * A2_N * !B2 * Y)	-0.00191	-0.00191	-0.00191
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00163	0.00164	0.00163
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00181	-0.00184	-0.00182
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00310	0.00311	0.00309
	(A1_N * A2_N * B2 * Y)	-0.00356	-0.00362	-0.00359
	(A1_N * A2_N * !B2 * Y)	0.00293	0.00292	0.00291
	(A1_N * A2_N * !B2 * Y)	-0.00372	-0.00372	-0.00372
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00311	0.00312	0.00309
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00355	-0.00361	-0.00358

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * A2_N * B2 * Y)	-0.00081	-0.00081	-0.00080
	(A1_N * A2_N * B2 * Y)	0.00091	0.00091	0.00091
	(A1_N * A2_N * !B2 * Y)	-0.00075	-0.00076	-0.00076
	(A1_N * A2_N * !B2 * Y)	0.00093	0.00094	0.00093
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00081	-0.00081	-0.00081
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00091	0.00091	0.00090
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00160	-0.00160	-0.00160
	(A1_N * A2_N * B2 * Y)	0.00187	0.00187	0.00185
	(A1_N * A2_N * !B2 * Y)	-0.00151	-0.00153	-0.00153
	(A1_N * A2_N * !B2 * Y)	0.00191	0.00192	0.00191
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00162	-0.00163	-0.00162
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00183	0.00184	0.00182
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00309	-0.00309	-0.00308
	(A1_N * A2_N * B2 * Y)	0.00362	0.00362	0.00359
	(A1_N * A2_N * !B2 * Y)	-0.00288	-0.00292	-0.00291
	(A1_N * A2_N * !B2 * Y)	0.00375	0.00376	0.00373
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00310	-0.00310	-0.00309
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00361	0.00361	0.00358

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * A2_N * B1 * Y)	0.00084	0.00084	0.00084
	(A1_N * A2_N * B1 * Y)	-0.00091	-0.00091	-0.00091
	(A1_N * A2_N * !B1 * Y)	0.00079	0.00081	0.00080
	(A1_N * A2_N * !B1 * Y)	-0.00093	-0.00094	-0.00094
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00091	0.00091	0.00091
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00065	-0.00065	-0.00064
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00148	0.00148	0.00148
	(A1_N * A2_N * B1 * Y)	-0.00168	-0.00172	-0.00171
	(A1_N * A2_N * !B1 * Y)	0.00142	0.00144	0.00142
	(A1_N * A2_N * !B1 * Y)	-0.00177	-0.00178	-0.00177
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00164	0.00164	0.00164
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00117	-0.00117	-0.00116
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00310	0.00313	0.00309
	(A1_N * A2_N * B1 * Y)	-0.00359	-0.00365	-0.00362
	(A1_N * A2_N * !B1 * Y)	0.00294	0.00295	0.00292
	(A1_N * A2_N * !B1 * Y)	-0.00376	-0.00378	-0.00375
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00357	0.00357	0.00355
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00240	-0.00239	-0.00238

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	(A1_N * A2_N * B1 * Y)	-0.00084	-0.00084	-0.00084
	(A1_N * A2_N * B1 * Y)	0.00092	0.00091	0.00091
	(A1_N * A2_N * !B1 * Y)	-0.00079	-0.00080	-0.00080
	(A1_N * A2_N * !B1 * Y)	0.00094	0.00094	0.00094
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00090	-0.00090	-0.00091
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00066	0.00066	0.00065
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00148	-0.00148	-0.00148
	(A1_N * A2_N * B1 * Y)	0.00171	0.00172	0.00171
	(A1_N * A2_N * !B1 * Y)	-0.00140	-0.00143	-0.00142
	(A1_N * A2_N * !B1 * Y)	0.00177	0.00178	0.00177
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00161	-0.00162	-0.00164
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00120	0.00120	0.00117
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00307	-0.00310	-0.00308
	(A1_N * A2_N * B1 * Y)	0.00360	0.00365	0.00362
	(A1_N * A2_N * !B1 * Y)	-0.00288	-0.00295	-0.00292
	(A1_N * A2_N * !B1 * Y)	0.00376	0.00378	0.00376
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00345	-0.00349	-0.00355
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00246	0.00247	0.00240

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1_N	A2_N	B1	B2	X
x	x	0	0	0
0	x	x	1	1
0	x	1	x	1
1	0	x	1	1
1	0	1	x	1
1	1	x	1	0
1	1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2a_1	14.38560
sky130_fd_sc_hs__o2bb2a_2	14.38560
sky130_fd_sc_hs__o2bb2a_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__o2bb2a_1	0.00201	0.00219	0.00215	0.00237	0.18836
sky130_fd_sc_hs__o2bb2a_2	0.00203	0.00228	0.00230	0.00243	0.36784
sky130_fd_sc_hs__o2bb2a_4	0.00201	0.00220	0.00424	0.00428	0.73605

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.00015	0.00017
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.00019	0.00022
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.00033	0.00038

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2bb2a_1	A1_N->X (FR)	0.61439	2.31240	12.94780
	A2_N->X (FR)	0.57467	2.27278	12.82400
	B1->X (RR)	0.30001	1.67586	9.86207
	B2->X (RR)	0.28662	1.65619	9.78940
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.64476	2.16393	13.09940
	A2_N->X (FR)	0.60538	2.12361	12.98440
	B1->X (RR)	0.29624	1.50252	9.99508
	B2->X (RR)	0.27865	1.48449	9.93678
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.75508	2.12837	13.39760
	A2_N->X (FR)	0.71775	2.08429	13.29580
	B1->X (RR)	0.32713	1.39277	10.12240
	B2->X (RR)	0.30757	1.36746	10.04000

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2bb2a_1	A1_N->X (RF)	0.46206	1.14621	4.00761
	A2_N->X (RF)	0.45805	1.12774	3.80256
	B1->X (FF)	0.94130	2.04129	8.27193
	B2->X (FF)	0.89030	1.88907	7.71684
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.56938	1.25285	4.18701
	A2_N->X (RF)	0.56673	1.23969	3.99032
	B1->X (FF)	1.26188	2.38977	8.80006
	B2->X (FF)	1.20278	2.22728	8.29620
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.59537	1.29297	4.46367
	A2_N->X (RF)	0.59195	1.28585	4.29864
	B1->X (FF)	1.20807	2.30449	8.76595
	B2->X (FF)	1.11532	2.10306	8.20243

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.00443	0.00444	0.00439
	A1_N	0.00610	0.00610	0.00606
	A2_N	0.00425	0.00420	0.00414
	A2_N	0.00559	0.00553	0.00547
	B1	0.00483	0.00484	0.00481
	B1	0.00262	0.00263	0.00261
	B2	0.00434	0.00432	0.00428
	B2	0.00230	0.00227	0.00224
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00612	0.00625	0.00625
	A1_N	0.00783	0.00796	0.00798
	A2_N	0.00591	0.00597	0.00597
	A2_N	0.00732	0.00739	0.00739
	B1	0.00657	0.00667	0.00669
	B1	0.00419	0.00430	0.00432
	B2	0.00604	0.00613	0.00612
	B2	0.00386	0.00395	0.00395
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01153	0.01184	0.01199
	A1_N	0.01281	0.01311	0.01332
	A2_N	0.01136	0.01155	0.01173
	A2_N	0.01231	0.01250	0.01272
	B1	0.01260	0.01279	0.01288
	B1	0.00818	0.00837	0.00848
	B2	0.01115	0.01134	0.01140
	B2	0.00732	0.00751	0.00758

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.00588	0.00575	0.00564
	A1_N	0.00420	0.00407	0.00396
	A2_N	0.00552	0.00538	0.00526
	A2_N	0.00421	0.00406	0.00394
	B1	0.00220	0.00223	0.00233
	B1	0.00438	0.00442	0.00439
	B2	0.00220	0.00219	0.00218
	B2	0.00420	0.00420	0.00415
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00739	0.00734	0.00729
	A1_N	0.00567	0.00568	0.00557
	A2_N	0.00706	0.00705	0.00694
	A2_N	0.00568	0.00567	0.00553
	B1	0.00343	0.00358	0.00360
	B1	0.00578	0.00594	0.00594
	B2	0.00343	0.00355	0.00361
	B2	0.00556	0.00568	0.00568
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01129	0.01152	0.01137
	A1_N	0.01006	0.01029	0.01014
	A2_N	0.01094	0.01103	0.01099
	A2_N	0.01007	0.01026	0.01012
	B1	0.00645	0.00677	0.00685
	B1	0.01086	0.01117	0.01122
	B2	0.00649	0.00673	0.00679
	B2	0.01023	0.01049	0.01052

Passive power(pJ) for A1_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A2_N * !B1 * !B2 * !X)	0.00304	0.00298	0.00294
	(A2_N * !B1 * !B2 * !X)	0.00087	0.00081	0.00078
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00069	0.00069	0.00069
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00069	-0.00070	-0.00069
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00322	0.00316	0.00313
	(A2_N * !B1 * !B2 * !X)	0.00099	0.00092	0.00089
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00073	0.00073	0.00073
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00068	-0.00068	-0.00068
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00378	0.00372	0.00369
	(A2_N * !B1 * !B2 * !X)	0.00156	0.00150	0.00147
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00072	0.00073	0.00072
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00066	-0.00066	-0.00066

Passive power(pJ) for A1_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A2_N * !B1 * !B2 * !X)	0.00035	0.00028	0.00023
	(A2_N * !B1 * !B2 * !X)	0.00253	0.00246	0.00239
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00068	-0.00069	-0.00069
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00069	0.00070	0.00070
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00036	0.00030	0.00025
	(A2_N * !B1 * !B2 * !X)	0.00262	0.00255	0.00247
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00071	-0.00073	-0.00073
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00068	0.00068	0.00068
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00069	0.00062	0.00055
	(A2_N * !B1 * !B2 * !X)	0.00294	0.00287	0.00277
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00071	-0.00073	-0.00072
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00066	0.00067	0.00066

Passive power(pJ) for A2_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * !B1 * !B2 * !X)	0.00281	0.00272	0.00266
	(A1_N * !B1 * !B2 * !X)	0.00097	0.00087	0.00082
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00026	0.00026	0.00026
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00089	-0.00089	-0.00090
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00303	0.00294	0.00288
	(A1_N * !B1 * !B2 * !X)	0.00109	0.00099	0.00094
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00031	0.00031	0.00030
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00091	-0.00091	-0.00092
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00356	0.00348	0.00342
	(A1_N * !B1 * !B2 * !X)	0.00167	0.00157	0.00152
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00028	0.00028	0.00027
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00088	-0.00089	-0.00090

Passive power(pJ) for A2_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * !B1 * !B2 * !X)	0.00013	0.00003	-0.00001
	(A1_N * !B1 * !B2 * !X)	0.00198	0.00188	0.00183
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00026	-0.00025	-0.00025
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00091	0.00091	0.00090
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00012	0.00002	-0.00003
	(A1_N * !B1 * !B2 * !X)	0.00208	0.00197	0.00192
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00030	-0.00030	-0.00029
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00093	0.00093	0.00092
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00048	0.00036	0.00030
	(A1_N * !B1 * !B2 * !X)	0.00242	0.00229	0.00222
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00027	-0.00027	-0.00027
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00090	0.00090	0.00090

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * A2_N * B2 * !X)	0.00070	0.00070	0.00070
	(A1_N * A2_N * B2 * !X)	-0.00081	-0.00082	-0.00081
	(A1_N * A2_N * !B2 * !X)	0.00066	0.00066	0.00066
	(A1_N * A2_N * !B2 * !X)	-0.00083	-0.00083	-0.00083
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00070	0.00070	0.00070
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00080	0.00080	0.00079
	(A1_N * A2_N * B2 * !X)	-0.00083	-0.00084	-0.00084
	(A1_N * A2_N * !B2 * !X)	0.00075	0.00076	0.00075
	(A1_N * A2_N * !B2 * !X)	-0.00086	-0.00086	-0.00086
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00080	0.00080	0.00079
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00083	-0.00084	-0.00084
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00141	0.00142	0.00141
	(A1_N * A2_N * B2 * !X)	-0.00165	-0.00168	-0.00167
	(A1_N * A2_N * !B2 * !X)	0.00133	0.00133	0.00133
	(A1_N * A2_N * !B2 * !X)	-0.00172	-0.00173	-0.00172
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00143	0.00143	0.00141
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00163	-0.00166	-0.00165

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * A2_N * B2 * !X)	-0.00070	-0.00070	-0.00069
	(A1_N * A2_N * B2 * !X)	0.00082	0.00082	0.00081
	(A1_N * A2_N * !B2 * !X)	-0.00065	-0.00066	-0.00066
	(A1_N * A2_N * !B2 * !X)	0.00084	0.00084	0.00084
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00070	-0.00070	-0.00070
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00082	0.00082	0.00081
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00080	-0.00079	-0.00079
	(A1_N * A2_N * B2 * !X)	0.00085	0.00084	0.00084
	(A1_N * A2_N * !B2 * !X)	-0.00074	-0.00076	-0.00075
	(A1_N * A2_N * !B2 * !X)	0.00086	0.00086	0.00086
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00079	-0.00079	-0.00079
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00085	0.00084	0.00084
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00141	-0.00141	-0.00140
	(A1_N * A2_N * B2 * !X)	0.00167	0.00168	0.00167
	(A1_N * A2_N * !B2 * !X)	-0.00131	-0.00133	-0.00133
	(A1_N * A2_N * !B2 * !X)	0.00173	0.00174	0.00173
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00142	-0.00142	-0.00141
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00165	0.00166	0.00165

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * A2_N * B1 * !X)	0.00075	0.00076	0.00075
	(A1_N * A2_N * B1 * !X)	-0.00082	-0.00083	-0.00083
	(A1_N * A2_N * !B1 * !X)	0.00071	0.00071	0.00071
	(A1_N * A2_N * !B1 * !X)	-0.00085	-0.00086	-0.00085
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00081	0.00081	0.00081
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00059	-0.00059	-0.00059
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00085	0.00087	0.00085
	(A1_N * A2_N * B1 * !X)	-0.00080	-0.00081	-0.00081
	(A1_N * A2_N * !B1 * !X)	0.00082	0.00083	0.00082
	(A1_N * A2_N * !B1 * !X)	-0.00083	-0.00083	-0.00083
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00087	0.00086	0.00086
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00064	-0.00063	-0.00063
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00135	0.00136	0.00136
	(A1_N * A2_N * B1 * !X)	-0.00164	-0.00165	-0.00165
	(A1_N * A2_N * !B1 * !X)	0.00130	0.00130	0.00129
	(A1_N * A2_N * !B1 * !X)	-0.00171	-0.00172	-0.00171
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00152	0.00151	0.00151
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00117	-0.00116	-0.00115

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	(A1_N * A2_N * B1 * !X)	-0.00075	-0.00075	-0.00075
	(A1_N * A2_N * B1 * !X)	0.00083	0.00083	0.00083
	(A1_N * A2_N * !B1 * !X)	-0.00070	-0.00071	-0.00071
	(A1_N * A2_N * !B1 * !X)	0.00085	0.00086	0.00085
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00079	-0.00080	-0.00081
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00061	0.00061	0.00060
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00085	-0.00086	-0.00085
	(A1_N * A2_N * B1 * !X)	0.00081	0.00081	0.00081
	(A1_N * A2_N * !B1 * !X)	-0.00081	-0.00082	-0.00082
	(A1_N * A2_N * !B1 * !X)	0.00083	0.00083	0.00083
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00084	-0.00085	-0.00086
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00064	0.00064	0.00063
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00135	-0.00136	-0.00136
	(A1_N * A2_N * B1 * !X)	0.00166	0.00165	0.00165
	(A1_N * A2_N * !B1 * !X)	-0.00127	-0.00130	-0.00129
	(A1_N * A2_N * !B1 * !X)	0.00171	0.00172	0.00171
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00145	-0.00146	-0.00151
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00121	0.00121	0.00116

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	C1	Y
0	0	0	x	x	1
0	x	1	0	x	1
0	x	1	1	0	1
0	x	1	1	1	0
x	1	x	0	x	1
x	1	x	1	0	1
x	1	x	1	1	0
1	x	x	0	x	1
1	x	x	1	0	1
1	x	x	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311ai_1	11.18880
sky130_fd_sc_hs__o311ai_2	19.18080
sky130_fd_sc_hs__o311ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__o311ai_1	0.00236	0.00250	0.00246	0.00256	0.00266	0.04398
sky130_fd_sc_hs__o311ai_2	0.00455	0.00470	0.00485	0.00487	0.00502	0.08424
sky130_fd_sc_hs__o311ai_4	0.00895	0.00904	0.00969	0.00742	0.00711	0.16902

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.00006	0.00014
sky130_fd_sc_hs__o311ai_2	0.00000	0.00012	0.00029
sky130_fd_sc_hs__o311ai_4	0.00000	0.00021	0.00050

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (FR)	1.47777	3.79185	14.59610
	A2->Y (FR)	1.43784	3.71372	14.64180
	A3->Y (FR)	1.24833	3.41967	13.83050
	B1->Y (FR)	0.26119	1.46816	8.42184
	C1->Y (FR)	0.21899	1.42518	8.37857
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	1.47927	3.51553	14.67470
	A2->Y (FR)	1.40343	3.39352	14.66620
	A3->Y (FR)	1.21745	3.10227	13.86790
	B1->Y (FR)	0.24870	1.39113	8.42086
	C1->Y (FR)	0.20065	1.34316	8.37546
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	1.29362	3.10025	14.65750
	A2->Y (FR)	1.23699	3.00051	14.69300
	A3->Y (FR)	1.03680	2.66993	13.86700
	B1->Y (FR)	0.34689	1.61107	9.95900
	C1->Y (FR)	0.24477	1.51874	9.88428

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.12993	0.79780	4.25234
	A2->Y (RF)	0.13369	0.79818	4.25996
	A3->Y (RF)	0.12142	0.77914	4.22722
	B1->Y (RF)	0.11926	0.83076	4.50965
	C1->Y (RF)	0.10613	0.81999	4.43290
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.13868	0.78393	4.30137
	A2->Y (RF)	0.13706	0.77346	4.27437
	A3->Y (RF)	0.12676	0.75597	4.24411
	B1->Y (RF)	0.12393	0.80832	4.57767
	C1->Y (RF)	0.10697	0.81069	4.61122
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.12817	0.73157	4.25905
	A2->Y (RF)	0.12657	0.72413	4.25164
	A3->Y (RF)	0.11608	0.70379	4.22051
	B1->Y (RF)	0.11595	0.79161	4.78515
	C1->Y (RF)	0.09217	0.77165	4.75588

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00063	0.00057	0.00055
	A1	0.00444	0.00437	0.00434
	A2	0.00068	0.00061	0.00058
	A2	0.00419	0.00411	0.00408
	A3	0.00067	0.00058	0.00055
	A3	0.00385	0.00376	0.00372
	B1	0.00012	0.00001	-0.00001
	B1	0.00338	0.00327	0.00324
	C1	-0.00020	-0.00030	-0.00031
	C1	0.00276	0.00265	0.00263
sky130_fd_sc_hs__o311ai_2	A1	0.00148	0.00133	0.00128
	A1	0.00913	0.00896	0.00890
	A2	0.00148	0.00133	0.00129
	A2	0.00855	0.00839	0.00831
	A3	0.00147	0.00126	0.00121
	A3	0.00790	0.00769	0.00762
	B1	0.00027	0.00006	0.00002
	B1	0.00681	0.00657	0.00653
	C1	-0.00040	-0.00060	-0.00062
	C1	0.00540	0.00519	0.00517

sky130_fd_sc_hs__o311ai_4	**A1**	0.00205	0.00182	0.00176
	A1	0.01698	0.01673	0.01664
	A2	0.00213	0.00184	0.00178
	A2	0.01579	0.01553	0.01541
	A3	0.00209	0.00169	0.00161
	A3	0.01469	0.01428	0.01418
	B1	0.00023	-0.00022	-0.00027
	B1	0.01131	0.01083	0.01079
	C1	-0.00114	-0.00140	-0.00142
	C1	0.00819	0.00793	0.00790

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.00509	0.00505	0.00495
	A1	0.00125	0.00119	0.00112
	A2	0.00460	0.00457	0.00450
	A2	0.00101	0.00097	0.00091
	A3	0.00395	0.00395	0.00392
	A3	0.00065	0.00063	0.00060
	B1	0.00453	0.00449	0.00439
	B1	0.00131	0.00126	0.00118
	C1	0.00417	0.00411	0.00402
	C1	0.00129	0.00124	0.00116

sky130_fd_sc_hs__o311ai_2	**A1**	0.01019	0.01008	0.00986
	A1	0.00247	0.00235	0.00219
	A2	0.00898	0.00891	0.00879
	A2	0.00172	0.00165	0.00154
	A3	0.00780	0.00778	0.00773
	A3	0.00110	0.00106	0.00102
	B1	0.00891	0.00883	0.00864
	B1	0.00250	0.00240	0.00225
	C1	0.00809	0.00798	0.00779
	C1	0.00249	0.00238	0.00223
sky130_fd_sc_hs__o311ai_4	**A1**	0.01821	0.01801	0.01758
	A1	0.00314	0.00290	0.00260
	A2	0.01603	0.01587	0.01561
	A2	0.00198	0.00179	0.00159
	A3	0.01343	0.01334	0.01334
	A3	0.00034	0.00022	0.00020
	B1	0.01538	0.01530	0.01501
	B1	0.00450	0.00440	0.00418
	C1	0.01348	0.01339	0.01311
	C1	0.00452	0.00440	0.00419

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A2 * B1 * !C1 * Y)**	0.00080	0.00080	0.00079
	(A2 * B1 * !C1 * Y)	-0.00090	-0.00091	-0.00090
	(A2 * A3 * B1 * C1 * !Y)	0.00080	0.00080	0.00079
	(A2 * A3 * B1 * C1 * !Y)	-0.00090	-0.00091	-0.00090
	(A2 * !B1 * Y)	0.00080	0.00080	0.00079
	(A2 * !B1 * Y)	-0.00090	-0.00091	-0.00090
	(A2 * !A3 * B1 * C1 * !Y)	0.00080	0.00080	0.00079
	(A2 * !A3 * B1 * C1 * !Y)	-0.00090	-0.00091	-0.00090
	(!A2 * A3 * B1 * C1 * !Y)	0.00080	0.00080	0.00079
	(!A2 * A3 * B1 * C1 * !Y)	-0.00085	-0.00087	-0.00086
	(!A2 * A3 * B1 * !C1 * Y)	0.00080	0.00080	0.00079
	(!A2 * A3 * B1 * !C1 * Y)	-0.00085	-0.00087	-0.00086
	(!A2 * A3 * !B1 * Y)	0.00080	0.00080	0.00079
	(!A2 * A3 * !B1 * Y)	-0.00085	-0.00087	-0.00086
	(!A2 * !A3 * B1 * !C1 * Y)	0.00073	0.00072	0.00072
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00093	-0.00093	-0.00093
	(!A2 * !A3 * !B1 * C1 * Y)	0.00074	0.00074	0.00074
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00092	-0.00093	-0.00093
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00074	0.00074	0.00074
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00092	-0.00093	-0.00093

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00155	0.00156	0.00155
	(A2 * B1 * !C1 * Y)	-0.00177	-0.00180	-0.00179
	(A2 * A3 * B1 * C1 * !Y)	0.00156	0.00156	0.00155
	(A2 * A3 * B1 * C1 * !Y)	-0.00176	-0.00179	-0.00178
	(A2 * !B1 * Y)	0.00155	0.00156	0.00155
	(A2 * !B1 * Y)	-0.00177	-0.00180	-0.00179
	(A2 * !A3 * B1 * C1 * !Y)	0.00156	0.00156	0.00155
	(A2 * !A3 * B1 * C1 * !Y)	-0.00176	-0.00179	-0.00178
	(!A2 * A3 * B1 * C1 * !Y)	0.00156	0.00156	0.00155
	(!A2 * A3 * B1 * C1 * !Y)	-0.00167	-0.00170	-0.00169
	(!A2 * A3 * B1 * !C1 * Y)	0.00155	0.00155	0.00154
	(!A2 * A3 * B1 * !C1 * Y)	-0.00168	-0.00171	-0.00170
	(!A2 * A3 * !B1 * Y)	0.00155	0.00155	0.00154
	(!A2 * A3 * !B1 * Y)	-0.00168	-0.00171	-0.00170
	(!A2 * !A3 * B1 * !C1 * Y)	0.00139	0.00140	0.00139
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00186	-0.00186	-0.00186
	(!A2 * !A3 * !B1 * C1 * Y)	0.00142	0.00143	0.00142
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00185	-0.00186	-0.00186
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00142	0.00142	0.00142
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00185	-0.00186	-0.00186

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00312	0.00312	0.00309
	(A2 * B1 * !C1 * Y)	-0.00352	-0.00359	-0.00356
	(A2 * A3 * B1 * C1 * !Y)	0.00312	0.00312	0.00309
	(A2 * A3 * B1 * C1 * !Y)	-0.00352	-0.00359	-0.00356
	(A2 * !B1 * Y)	0.00312	0.00312	0.00309
	(A2 * !B1 * Y)	-0.00352	-0.00359	-0.00356
	(A2 * !A3 * B1 * C1 * !Y)	0.00312	0.00312	0.00309
	(A2 * !A3 * B1 * C1 * !Y)	-0.00352	-0.00358	-0.00356
	(!A2 * A3 * B1 * C1 * !Y)	0.00312	0.00312	0.00309
	(!A2 * A3 * B1 * C1 * !Y)	-0.00335	-0.00341	-0.00339
	(!A2 * A3 * B1 * !C1 * Y)	0.00311	0.00311	0.00309
	(!A2 * A3 * B1 * !C1 * Y)	-0.00336	-0.00342	-0.00340
	(!A2 * A3 * !B1 * Y)	0.00311	0.00311	0.00309
	(!A2 * A3 * !B1 * Y)	-0.00336	-0.00342	-0.00340
	(!A2 * !A3 * B1 * !C1 * Y)	0.00279	0.00278	0.00277
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00372	-0.00372	-0.00371
	(!A2 * !A3 * !B1 * C1 * Y)	0.00282	0.00286	0.00283
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00369	-0.00373	-0.00371
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00282	0.00286	0.00283
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00369	-0.00373	-0.00371

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A2 * B1 * !C1 * Y)**	-0.00080	-0.00080	-0.00079
	(A2 * B1 * !C1 * Y)	0.00092	0.00091	0.00090
	(A2 * A3 * B1 * C1 * !Y)	-0.00080	-0.00079	-0.00079
	(A2 * A3 * B1 * C1 * !Y)	0.00091	0.00091	0.00090
	(A2 * !B1 * Y)	-0.00080	-0.00079	-0.00079
	(A2 * !B1 * Y)	0.00091	0.00091	0.00090
	(A2 * !A3 * B1 * C1 * !Y)	-0.00080	-0.00079	-0.00079
	(A2 * !A3 * B1 * C1 * !Y)	0.00091	0.00091	0.00090
	(!A2 * A3 * B1 * C1 * !Y)	-0.00079	-0.00079	-0.00079
	(!A2 * A3 * B1 * C1 * !Y)	0.00086	0.00087	0.00086
	(!A2 * A3 * B1 * !C1 * Y)	-0.00079	-0.00079	-0.00079
	(!A2 * A3 * B1 * !C1 * Y)	0.00086	0.00087	0.00086
	(!A2 * A3 * !B1 * Y)	-0.00079	-0.00079	-0.00079
	(!A2 * A3 * !B1 * Y)	0.00086	0.00087	0.00086
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00070	-0.00072	-0.00072
	(!A2 * !A3 * B1 * !C1 * Y)	0.00093	0.00094	0.00093
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00072	-0.00074	-0.00074
	(!A2 * !A3 * !B1 * C1 * Y)	0.00092	0.00094	0.00093
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00072	-0.00074	-0.00074
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00092	0.00094	0.00093

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00155	-0.00155	-0.00154
	(A2 * B1 * !C1 * Y)	0.00180	0.00180	0.00179
	(A2 * A3 * B1 * C1 * !Y)	-0.00155	-0.00155	-0.00155
	(A2 * A3 * B1 * C1 * !Y)	0.00179	0.00179	0.00178
	(A2 * !B1 * Y)	-0.00155	-0.00155	-0.00154
	(A2 * !B1 * Y)	0.00180	0.00180	0.00179
	(A2 * !A3 * B1 * C1 * !Y)	-0.00155	-0.00155	-0.00155
	(A2 * !A3 * B1 * C1 * !Y)	0.00179	0.00179	0.00178
	(!A2 * A3 * B1 * C1 * !Y)	-0.00155	-0.00155	-0.00155
	(!A2 * A3 * B1 * C1 * !Y)	0.00170	0.00170	0.00169
	(!A2 * A3 * B1 * !C1 * Y)	-0.00155	-0.00155	-0.00154
	(!A2 * A3 * B1 * !C1 * Y)	0.00171	0.00171	0.00170
	(!A2 * A3 * !B1 * Y)	-0.00155	-0.00155	-0.00154
	(!A2 * A3 * !B1 * Y)	0.00171	0.00171	0.00170
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00134	-0.00140	-0.00139
	(!A2 * !A3 * B1 * !C1 * Y)	0.00187	0.00188	0.00186
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00138	-0.00143	-0.00142
	(!A2 * !A3 * !B1 * C1 * Y)	0.00185	0.00187	0.00186
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00138	-0.00142	-0.00142
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00185	0.00187	0.00186

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00309	-0.00310	-0.00309
	(A2 * B1 * !C1 * Y)	0.00358	0.00359	0.00356
	(A2 * A3 * B1 * C1 * !Y)	-0.00309	-0.00310	-0.00309
	(A2 * A3 * B1 * C1 * !Y)	0.00357	0.00359	0.00356
	(A2 * !B1 * Y)	-0.00309	-0.00310	-0.00309
	(A2 * !B1 * Y)	0.00357	0.00359	0.00356
	(A2 * !A3 * B1 * C1 * !Y)	-0.00309	-0.00310	-0.00309
	(A2 * !A3 * B1 * C1 * !Y)	0.00357	0.00358	0.00356
	(!A2 * A3 * B1 * C1 * !Y)	-0.00310	-0.00310	-0.00309
	(!A2 * A3 * B1 * C1 * !Y)	0.00340	0.00341	0.00339
	(!A2 * A3 * B1 * !C1 * Y)	-0.00309	-0.00310	-0.00308
	(!A2 * A3 * B1 * !C1 * Y)	0.00342	0.00342	0.00340
	(!A2 * A3 * !B1 * Y)	-0.00309	-0.00310	-0.00308
	(!A2 * A3 * !B1 * Y)	0.00342	0.00342	0.00340
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00269	-0.00278	-0.00277
	(!A2 * !A3 * B1 * !C1 * Y)	0.00373	0.00377	0.00372
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00277	-0.00286	-0.00283
	(!A2 * !A3 * !B1 * C1 * Y)	0.00373	0.00377	0.00372
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00277	-0.00286	-0.00283
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00373	0.00377	0.00372

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A1 * A3 * B1 * C1 * !Y)**	0.00078	0.00079	0.00079
	(A1 * A3 * B1 * C1 * !Y)	-0.00069	-0.00069	-0.00068
	(A1 * A3 * B1 * !C1 * Y)	0.00075	0.00076	0.00075
	(A1 * A3 * B1 * !C1 * Y)	-0.00076	-0.00077	-0.00076
	(A1 * A3 * !B1 * Y)	0.00075	0.00076	0.00075
	(A1 * A3 * !B1 * Y)	-0.00077	-0.00077	-0.00076
	(A1 * !A3 * B1 * C1 * !Y)	0.00080	0.00080	0.00079
	(A1 * !A3 * B1 * C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * B1 * !C1 * Y)	0.00075	0.00076	0.00075
	(A1 * !A3 * B1 * !C1 * Y)	-0.00091	-0.00092	-0.00092
	(A1 * !A3 * !B1 * C1 * Y)	0.00075	0.00076	0.00075
	(A1 * !A3 * !B1 * C1 * Y)	-0.00091	-0.00092	-0.00092
	(A1 * !A3 * !B1 * !C1 * Y)	0.00075	0.00075	0.00075
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00091	-0.00092	-0.00092
	(!A1 * A3 * B1 * C1 * !Y)	0.00079	0.00079	0.00079
	(!A1 * A3 * B1 * C1 * !Y)	-0.00087	-0.00088	-0.00088
	(!A1 * A3 * B1 * !C1 * Y)	0.00075	0.00075	0.00075
	(!A1 * A3 * B1 * !C1 * Y)	-0.00091	-0.00092	-0.00092
	(!A1 * A3 * !B1 * Y)	0.00076	0.00075	0.00075
	(!A1 * A3 * !B1 * Y)	-0.00091	-0.00092	-0.00092
	(!A1 * !A3 * B1 * !C1 * Y)	0.00068	0.00068	0.00068
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !A3 * !B1 * C1 * Y)	0.00069	0.00070	0.00069
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00069	0.00070	0.00069
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00094	-0.00095	-0.00094

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00158	0.00159	0.00158
	(A1 * A3 * B1 * C1 * !Y)	-0.00143	-0.00142	-0.00141
	(A1 * A3 * B1 * !C1 * Y)	0.00158	0.00157	0.00156
	(A1 * A3 * B1 * !C1 * Y)	-0.00152	-0.00153	-0.00152
	(A1 * A3 * !B1 * Y)	0.00158	0.00157	0.00156
	(A1 * A3 * !B1 * Y)	-0.00151	-0.00153	-0.00152
	(A1 * !A3 * B1 * C1 * !Y)	0.00159	0.00158	0.00157
	(A1 * !A3 * B1 * C1 * !Y)	-0.00138	-0.00138	-0.00137
	(A1 * !A3 * B1 * !C1 * Y)	0.00156	0.00158	0.00156
	(A1 * !A3 * B1 * !C1 * Y)	-0.00179	-0.00182	-0.00181
	(A1 * !A3 * !B1 * C1 * Y)	0.00156	0.00158	0.00156
	(A1 * !A3 * !B1 * C1 * Y)	-0.00179	-0.00182	-0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	0.00158	0.00158	0.00156
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00181	-0.00182	-0.00181
	(!A1 * A3 * B1 * C1 * !Y)	0.00158	0.00159	0.00157
	(!A1 * A3 * B1 * C1 * !Y)	-0.00180	-0.00183	-0.00182
	(!A1 * A3 * B1 * !C1 * Y)	0.00156	0.00158	0.00156
	(!A1 * A3 * B1 * !C1 * Y)	-0.00182	-0.00185	-0.00184
	(!A1 * A3 * !B1 * Y)	0.00156	0.00158	0.00156
	(!A1 * A3 * !B1 * Y)	-0.00182	-0.00185	-0.00184
	(!A1 * !A3 * B1 * !C1 * Y)	0.00140	0.00141	0.00139
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00189	-0.00191	-0.00189
	(!A1 * !A3 * !B1 * C1 * Y)	0.00143	0.00142	0.00142
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00189	-0.00189	-0.00189
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00142	0.00143	0.00142
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00189	-0.00190	-0.00189

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00311	0.00313	0.00311
	(A1 * A3 * B1 * C1 * !Y)	-0.00271	-0.00274	-0.00273
	(A1 * A3 * B1 * !C1 * Y)	0.00309	0.00308	0.00306
	(A1 * A3 * B1 * !C1 * Y)	-0.00296	-0.00299	-0.00297
	(A1 * A3 * !B1 * Y)	0.00309	0.00308	0.00306
	(A1 * A3 * !B1 * Y)	-0.00296	-0.00299	-0.00297
	(A1 * !A3 * B1 * C1 * !Y)	0.00316	0.00312	0.00310
	(A1 * !A3 * B1 * C1 * !Y)	-0.00269	-0.00267	-0.00266
	(A1 * !A3 * B1 * !C1 * Y)	0.00309	0.00309	0.00305
	(A1 * !A3 * B1 * !C1 * Y)	-0.00354	-0.00356	-0.00354
	(A1 * !A3 * !B1 * C1 * Y)	0.00309	0.00309	0.00305
	(A1 * !A3 * !B1 * C1 * Y)	-0.00354	-0.00356	-0.00354
	(A1 * !A3 * !B1 * !C1 * Y)	0.00309	0.00309	0.00305
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00354	-0.00356	-0.00355
	(!A1 * A3 * B1 * C1 * !Y)	0.00315	0.00314	0.00310
	(!A1 * A3 * B1 * C1 * !Y)	-0.00354	-0.00357	-0.00354
	(!A1 * A3 * B1 * !C1 * Y)	0.00308	0.00309	0.00305
	(!A1 * A3 * B1 * !C1 * Y)	-0.00358	-0.00363	-0.00361
	(!A1 * A3 * !B1 * Y)	0.00309	0.00309	0.00305
	(!A1 * A3 * !B1 * Y)	-0.00358	-0.00363	-0.00361
	(!A1 * !A3 * B1 * !C1 * Y)	0.00276	0.00277	0.00273
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00374	-0.00375	-0.00372
	(!A1 * !A3 * !B1 * C1 * Y)	0.00278	0.00280	0.00279
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00371	-0.00373	-0.00372
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00282	0.00280	0.00279
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00373	-0.00373	-0.00372

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A1 * A3 * B1 * C1 * !Y)**	-0.00078	-0.00079	-0.00079
	(A1 * A3 * B1 * C1 * !Y)	0.00069	0.00069	0.00068
	(A1 * A3 * B1 * !C1 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * A3 * B1 * !C1 * Y)	0.00076	0.00077	0.00076
	(A1 * A3 * !B1 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * A3 * !B1 * Y)	0.00077	0.00077	0.00076
	(A1 * !A3 * B1 * C1 * !Y)	-0.00079	-0.00079	-0.00079
	(A1 * !A3 * B1 * C1 * !Y)	0.00068	0.00068	0.00068
	(A1 * !A3 * B1 * !C1 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A3 * B1 * !C1 * Y)	0.00092	0.00092	0.00092
	(A1 * !A3 * !B1 * C1 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A3 * !B1 * C1 * Y)	0.00092	0.00092	0.00092
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A3 * !B1 * !C1 * Y)	0.00092	0.00092	0.00092
	(!A1 * A3 * B1 * C1 * !Y)	-0.00079	-0.00079	-0.00079
	(!A1 * A3 * B1 * C1 * !Y)	0.00088	0.00088	0.00088
	(!A1 * A3 * B1 * !C1 * Y)	-0.00075	-0.00075	-0.00075
	(!A1 * A3 * B1 * !C1 * Y)	0.00092	0.00092	0.00092
	(!A1 * A3 * !B1 * Y)	-0.00075	-0.00075	-0.00075
	(!A1 * A3 * !B1 * Y)	0.00092	0.00092	0.00092
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00066	-0.00068	-0.00068
	(!A1 * !A3 * B1 * !C1 * Y)	0.00095	0.00095	0.00095
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00068	-0.00070	-0.00069
	(!A1 * !A3 * !B1 * C1 * Y)	0.00094	0.00095	0.00095
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00068	-0.00070	-0.00069
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00094	0.00095	0.00095

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00158	-0.00158	-0.00157
	(A1 * A3 * B1 * C1 * !Y)	0.00143	0.00142	0.00141
	(A1 * A3 * B1 * !C1 * Y)	-0.00155	-0.00156	-0.00155
	(A1 * A3 * B1 * !C1 * Y)	0.00152	0.00153	0.00152
	(A1 * A3 * !B1 * Y)	-0.00155	-0.00156	-0.00155
	(A1 * A3 * !B1 * Y)	0.00151	0.00153	0.00152
	(A1 * !A3 * B1 * C1 * !Y)	-0.00156	-0.00157	-0.00157
	(A1 * !A3 * B1 * C1 * !Y)	0.00139	0.00140	0.00140
	(A1 * !A3 * B1 * !C1 * Y)	-0.00156	-0.00156	-0.00156
	(A1 * !A3 * B1 * !C1 * Y)	0.00182	0.00182	0.00181
	(A1 * !A3 * !B1 * C1 * Y)	-0.00156	-0.00156	-0.00156
	(A1 * !A3 * !B1 * C1 * Y)	0.00182	0.00182	0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00156	-0.00156	-0.00156
	(A1 * !A3 * !B1 * !C1 * Y)	0.00182	0.00182	0.00181
	(!A1 * A3 * B1 * C1 * !Y)	-0.00157	-0.00158	-0.00157
	(!A1 * A3 * B1 * C1 * !Y)	0.00183	0.00183	0.00182
	(!A1 * A3 * B1 * !C1 * Y)	-0.00155	-0.00156	-0.00156
	(!A1 * A3 * B1 * !C1 * Y)	0.00182	0.00185	0.00184
	(!A1 * A3 * !B1 * Y)	-0.00156	-0.00156	-0.00156
	(!A1 * A3 * !B1 * Y)	0.00185	0.00185	0.00184
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00135	-0.00141	-0.00139
	(!A1 * !A3 * B1 * !C1 * Y)	0.00190	0.00191	0.00190
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00139	-0.00142	-0.00142
	(!A1 * !A3 * !B1 * C1 * Y)	0.00189	0.00191	0.00190
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00139	-0.00143	-0.00142
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00189	0.00191	0.00190

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00308	-0.00311	-0.00310
	(A1 * A3 * B1 * C1 * !Y)	0.00271	0.00274	0.00273
	(A1 * A3 * B1 * !C1 * Y)	-0.00303	-0.00306	-0.00305
	(A1 * A3 * B1 * !C1 * Y)	0.00296	0.00299	0.00297
	(A1 * A3 * !B1 * Y)	-0.00303	-0.00306	-0.00305
	(A1 * A3 * !B1 * Y)	0.00296	0.00299	0.00297
	(A1 * !A3 * B1 * C1 * !Y)	-0.00309	-0.00310	-0.00310
	(A1 * !A3 * B1 * C1 * !Y)	0.00269	0.00270	0.00270
	(A1 * !A3 * B1 * !C1 * Y)	-0.00306	-0.00306	-0.00305
	(A1 * !A3 * B1 * !C1 * Y)	0.00356	0.00356	0.00354
	(A1 * !A3 * !B1 * C1 * Y)	-0.00306	-0.00306	-0.00305
	(A1 * !A3 * !B1 * C1 * Y)	0.00357	0.00356	0.00354
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00306	-0.00306	-0.00305
	(A1 * !A3 * !B1 * !C1 * Y)	0.00357	0.00356	0.00355
	(!A1 * A3 * B1 * C1 * !Y)	-0.00311	-0.00312	-0.00310
	(!A1 * A3 * B1 * C1 * !Y)	0.00355	0.00357	0.00354
	(!A1 * A3 * B1 * !C1 * Y)	-0.00303	-0.00305	-0.00304
	(!A1 * A3 * B1 * !C1 * Y)	0.00358	0.00363	0.00361
	(!A1 * A3 * !B1 * Y)	-0.00303	-0.00305	-0.00304
	(!A1 * A3 * !B1 * Y)	0.00358	0.00363	0.00361
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00265	-0.00277	-0.00273
	(!A1 * !A3 * B1 * !C1 * Y)	0.00374	0.00375	0.00373
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00272	-0.00280	-0.00279
	(!A1 * !A3 * !B1 * C1 * Y)	0.00373	0.00375	0.00373
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00272	-0.00280	-0.00279
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00373	0.00375	0.00373

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A2 * B1 * C1 * !Y)**	0.00086	0.00086	0.00086
	(A2 * B1 * C1 * !Y)	-0.00059	-0.00059	-0.00058
	(A2 * B1 * !C1 * Y)	0.00077	0.00078	0.00077
	(A2 * B1 * !C1 * Y)	-0.00086	-0.00087	-0.00087
	(A2 * !B1 * C1 * Y)	0.00077	0.00078	0.00077
	(A2 * !B1 * C1 * Y)	-0.00086	-0.00087	-0.00087
	(A2 * !B1 * !C1 * Y)	0.00077	0.00078	0.00077
	(A2 * !B1 * !C1 * Y)	-0.00086	-0.00087	-0.00087
	(A1 * !A2 * B1 * C1 * !Y)	0.00086	0.00086	0.00086
	(A1 * !A2 * B1 * C1 * !Y)	-0.00059	-0.00058	-0.00058
	(A1 * !A2 * B1 * !C1 * Y)	0.00078	0.00077	0.00077
	(A1 * !A2 * B1 * !C1 * Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * !B1 * C1 * Y)	0.00078	0.00077	0.00077
	(A1 * !A2 * !B1 * C1 * Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * !B1 * !C1 * Y)	0.00078	0.00077	0.00077
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * B1 * !C1 * Y)	0.00069	0.00069	0.00069
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00090	-0.00090	-0.00089
	(!A1 * !A2 * !B1 * C1 * Y)	0.00071	0.00072	0.00071
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00089	-0.00090	-0.00089
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00089	-0.00090	-0.00090

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00176	0.00177	0.00177
	(A2 * B1 * C1 * !Y)	-0.00119	-0.00120	-0.00119
	(A2 * B1 * !C1 * Y)	0.00154	0.00153	0.00154
	(A2 * B1 * !C1 * Y)	-0.00180	-0.00182	-0.00182
	(A2 * !B1 * C1 * Y)	0.00154	0.00153	0.00154
	(A2 * !B1 * C1 * Y)	-0.00180	-0.00182	-0.00182
	(A2 * !B1 * !C1 * Y)	0.00155	0.00153	0.00154
	(A2 * !B1 * !C1 * Y)	-0.00181	-0.00183	-0.00182
	(A1 * !A2 * B1 * C1 * !Y)	0.00176	0.00177	0.00177
	(A1 * !A2 * B1 * C1 * !Y)	-0.00119	-0.00120	-0.00119
	(A1 * !A2 * B1 * !C1 * Y)	0.00153	0.00154	0.00153
	(A1 * !A2 * B1 * !C1 * Y)	-0.00170	-0.00173	-0.00172
	(A1 * !A2 * !B1 * C1 * Y)	0.00153	0.00154	0.00153
	(A1 * !A2 * !B1 * C1 * Y)	-0.00170	-0.00173	-0.00172
	(A1 * !A2 * !B1 * !C1 * Y)	0.00153	0.00154	0.00154
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00171	-0.00173	-0.00172
	(!A1 * !A2 * B1 * !C1 * Y)	0.00139	0.00140	0.00138
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00188	-0.00189	-0.00187
	(!A1 * !A2 * !B1 * C1 * Y)	0.00140	0.00141	0.00141
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00186	-0.00187	-0.00187
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00140	0.00141	0.00141
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00187	-0.00188	-0.00187

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00359	0.00363	0.00359
	(A2 * B1 * C1 * !Y)	-0.00238	-0.00240	-0.00238
	(A2 * B1 * !C1 * Y)	0.00294	0.00297	0.00294
	(A2 * B1 * !C1 * Y)	-0.00378	-0.00383	-0.00381
	(A2 * !B1 * C1 * Y)	0.00294	0.00297	0.00294
	(A2 * !B1 * C1 * Y)	-0.00379	-0.00383	-0.00381
	(A2 * !B1 * !C1 * Y)	0.00294	0.00298	0.00294
	(A2 * !B1 * !C1 * Y)	-0.00379	-0.00384	-0.00382
	(A1 * !A2 * B1 * C1 * !Y)	0.00359	0.00363	0.00359
	(A1 * !A2 * B1 * C1 * !Y)	-0.00237	-0.00240	-0.00237
	(A1 * !A2 * B1 * !C1 * Y)	0.00295	0.00296	0.00294
	(A1 * !A2 * B1 * !C1 * Y)	-0.00357	-0.00360	-0.00357
	(A1 * !A2 * !B1 * C1 * Y)	0.00295	0.00296	0.00294
	(A1 * !A2 * !B1 * C1 * Y)	-0.00357	-0.00361	-0.00357
	(A1 * !A2 * !B1 * !C1 * Y)	0.00292	0.00295	0.00294
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00355	-0.00361	-0.00359
	(!A1 * !A2 * B1 * !C1 * Y)	0.00266	0.00264	0.00265
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00394	-0.00393	-0.00394
	(!A1 * !A2 * !B1 * C1 * Y)	0.00271	0.00271	0.00271
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00394	-0.00394	-0.00394
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00271	0.00271	0.00271
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00394	-0.00394	-0.00394

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A2 * B1 * C1 * !Y)**	-0.00084	-0.00085	-0.00086
	(A2 * B1 * C1 * !Y)	0.00060	0.00060	0.00059
	(A2 * B1 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * B1 * !C1 * Y)	0.00087	0.00087	0.00087
	(A2 * !B1 * C1 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * C1 * Y)	0.00087	0.00087	0.00087
	(A2 * !B1 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * !C1 * Y)	0.00087	0.00087	0.00087
	(A1 * !A2 * B1 * C1 * !Y)	-0.00076	-0.00077	-0.00085
	(A1 * !A2 * B1 * C1 * !Y)	0.00065	0.00065	0.00059
	(A1 * !A2 * B1 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * B1 * !C1 * Y)	0.00082	0.00082	0.00082
	(A1 * !A2 * !B1 * C1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !B1 * C1 * Y)	0.00082	0.00082	0.00082
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !C1 * Y)	0.00082	0.00082	0.00082
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00067	-0.00069	-0.00069
	(!A1 * !A2 * B1 * !C1 * Y)	0.00090	0.00090	0.00090
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00069	-0.00072	-0.00071
	(!A1 * !A2 * !B1 * C1 * Y)	0.00089	0.00090	0.00090
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00069	-0.00071	-0.00071
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00089	0.00090	0.00090

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00174	-0.00175	-0.00177
	(A2 * B1 * C1 * !Y)	0.00123	0.00123	0.00120
	(A2 * B1 * !C1 * Y)	-0.00153	-0.00153	-0.00153
	(A2 * B1 * !C1 * Y)	0.00181	0.00183	0.00182
	(A2 * !B1 * C1 * Y)	-0.00154	-0.00153	-0.00153
	(A2 * !B1 * C1 * Y)	0.00182	0.00183	0.00182
	(A2 * !B1 * !C1 * Y)	-0.00154	-0.00153	-0.00153
	(A2 * !B1 * !C1 * Y)	0.00182	0.00183	0.00182
	(A1 * !A2 * B1 * C1 * !Y)	-0.00155	-0.00156	-0.00173
	(A1 * !A2 * B1 * C1 * !Y)	0.00136	0.00135	0.00122
	(A1 * !A2 * B1 * !C1 * Y)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * B1 * !C1 * Y)	0.00172	0.00173	0.00172
	(A1 * !A2 * !B1 * C1 * Y)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * !B1 * C1 * Y)	0.00172	0.00173	0.00172
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * !B1 * !C1 * Y)	0.00173	0.00173	0.00172
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00133	-0.00140	-0.00138
	(!A1 * !A2 * B1 * !C1 * Y)	0.00188	0.00189	0.00187
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00137	-0.00141	-0.00141
	(!A1 * !A2 * !B1 * C1 * Y)	0.00187	0.00189	0.00187
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00137	-0.00141	-0.00141
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00187	0.00189	0.00187

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00353	-0.00354	-0.00359
	(A2 * B1 * C1 * !Y)	0.00246	0.00245	0.00239
	(A2 * B1 * !C1 * Y)	-0.00294	-0.00295	-0.00293
	(A2 * B1 * !C1 * Y)	0.00382	0.00383	0.00381
	(A2 * !B1 * C1 * Y)	-0.00294	-0.00295	-0.00293
	(A2 * !B1 * C1 * Y)	0.00382	0.00383	0.00381
	(A2 * !B1 * !C1 * Y)	-0.00294	-0.00295	-0.00293
	(A2 * !B1 * !C1 * Y)	0.00383	0.00384	0.00382
	(A1 * !A2 * B1 * C1 * !Y)	-0.00317	-0.00320	-0.00354
	(A1 * !A2 * B1 * C1 * !Y)	0.00268	0.00267	0.00242
	(A1 * !A2 * B1 * !C1 * Y)	-0.00294	-0.00296	-0.00293
	(A1 * !A2 * B1 * !C1 * Y)	0.00358	0.00360	0.00357
	(A1 * !A2 * !B1 * C1 * Y)	-0.00294	-0.00296	-0.00293
	(A1 * !A2 * !B1 * C1 * Y)	0.00358	0.00361	0.00357
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00292	-0.00294	-0.00293
	(A1 * !A2 * !B1 * !C1 * Y)	0.00360	0.00361	0.00359
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00257	-0.00264	-0.00265
	(!A1 * !A2 * B1 * !C1 * Y)	0.00395	0.00396	0.00394
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00264	-0.00271	-0.00271
	(!A1 * !A2 * !B1 * C1 * Y)	0.00394	0.00396	0.00394
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00264	-0.00271	-0.00271
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00394	0.00396	0.00394

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00070	0.00071	0.00070
	(A3 * !C1 * Y)	-0.00096	-0.00097	-0.00096
	(A2 * !A3 * !C1 * Y)	0.00071	0.00071	0.00070
	(A2 * !A3 * !C1 * Y)	-0.00096	-0.00097	-0.00096
	(A1 * !A2 * !A3 * !C1 * Y)	0.00071	0.00071	0.00070
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00096	-0.00097	-0.00096
	(!A1 * !A2 * !A3 * C1 * Y)	0.00039	0.00040	0.00040
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00096	-0.00097	-0.00096
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00044	0.00045	0.00044
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00096	-0.00097	-0.00097
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00148	0.00149	0.00147
	(A3 * !C1 * Y)	-0.00190	-0.00190	-0.00189
	(A2 * !A3 * !C1 * Y)	0.00147	0.00148	0.00147
	(A2 * !A3 * !C1 * Y)	-0.00189	-0.00190	-0.00189
	(A1 * !A2 * !A3 * !C1 * Y)	0.00147	0.00148	0.00147
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00189	-0.00190	-0.00189
	(!A1 * !A2 * !A3 * C1 * Y)	0.00082	0.00082	0.00083
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00188	-0.00189	-0.00188
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00093	0.00093	0.00093
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00190	-0.00190	-0.00190
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00274	0.00275	0.00273
	(A3 * !C1 * Y)	-0.00220	-0.00219	-0.00220
	(A2 * !A3 * !C1 * Y)	0.00272	0.00272	0.00273
	(A2 * !A3 * !C1 * Y)	-0.00220	-0.00220	-0.00220
	(A1 * !A2 * !A3 * !C1 * Y)	0.00271	0.00274	0.00272
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00219	-0.00220	-0.00220
	(!A1 * !A2 * !A3 * C1 * Y)	0.00150	0.00151	0.00151
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00221	-0.00221	-0.00219
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00168	0.00170	0.00169
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00223	-0.00225	-0.00224

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00069	-0.00071	-0.00070
	(A3 * !C1 * Y)	0.00096	0.00097	0.00097
	(A2 * !A3 * !C1 * Y)	-0.00069	-0.00071	-0.00070
	(A2 * !A3 * !C1 * Y)	0.00096	0.00097	0.00097
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00069	-0.00071	-0.00070
	(A1 * !A2 * !A3 * !C1 * Y)	0.00096	0.00097	0.00096
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00038	-0.00037	-0.00038
	(!A1 * !A2 * !A3 * C1 * Y)	0.00100	0.00099	0.00097
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00044	-0.00045	-0.00044
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00097	0.00098	0.00097
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00146	-0.00149	-0.00147
	(A3 * !C1 * Y)	0.00191	0.00191	0.00189
	(A2 * !A3 * !C1 * Y)	-0.00145	-0.00148	-0.00147
	(A2 * !A3 * !C1 * Y)	0.00189	0.00191	0.00189
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00144	-0.00148	-0.00147
	(A1 * !A2 * !A3 * !C1 * Y)	0.00189	0.00191	0.00189
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00077	-0.00078	-0.00080
	(!A1 * !A2 * !A3 * C1 * Y)	0.00194	0.00195	0.00191
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00093	-0.00093	-0.00093
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00191	0.00192	0.00191

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00268	-0.00275	-0.00273
	(A3 * !C1 * Y)	0.00220	0.00219	0.00220
	(A2 * !A3 * !C1 * Y)	-0.00267	-0.00272	-0.00273
	(A2 * !A3 * !C1 * Y)	0.00220	0.00222	0.00220
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00266	-0.00274	-0.00272
	(A1 * !A2 * !A3 * !C1 * Y)	0.00220	0.00221	0.00220
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00139	-0.00141	-0.00144
	(!A1 * !A2 * !A3 * C1 * Y)	0.00231	0.00232	0.00224
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00168	-0.00170	-0.00169
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00226	0.00226	0.00225

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00034	0.00035	0.00034
	(A3 * !B1 * Y)	-0.00113	-0.00114	-0.00116
	(A2 * !A3 * !B1 * Y)	0.00035	0.00034	0.00034
	(A2 * !A3 * !B1 * Y)	-0.00114	-0.00114	-0.00116
	(!A2 * !A3 * !B1 * Y)	0.00035	0.00035	0.00034
	(!A2 * !A3 * !B1 * Y)	-0.00114	-0.00115	-0.00116
	(!A1 * !A2 * !A3 * B1 * Y)	0.00037	0.00037	0.00034
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00107	-0.00108	-0.00115
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00068	0.00068	0.00065
	(A3 * !B1 * Y)	-0.00223	-0.00223	-0.00227
	(A2 * !A3 * !B1 * Y)	0.00068	0.00067	0.00065
	(A2 * !A3 * !B1 * Y)	-0.00222	-0.00223	-0.00227
	(!A2 * !A3 * !B1 * Y)	0.00067	0.00068	0.00065
	(!A2 * !A3 * !B1 * Y)	-0.00222	-0.00224	-0.00227
	(!A1 * !A2 * !A3 * B1 * Y)	0.00072	0.00072	0.00063
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00208	-0.00209	-0.00225
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00127	0.00126	0.00121
	(A3 * !B1 * Y)	-0.00247	-0.00249	-0.00257
	(A2 * !A3 * !B1 * Y)	0.00126	0.00127	0.00121
	(A2 * !A3 * !B1 * Y)	-0.00247	-0.00250	-0.00257
	(!A2 * !A3 * !B1 * Y)	0.00126	0.00127	0.00121
	(!A2 * !A3 * !B1 * Y)	-0.00247	-0.00249	-0.00257
	(!A1 * !A2 * !A3 * B1 * Y)	0.00134	0.00135	0.00119
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00219	-0.00224	-0.00253

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00033	-0.00033	-0.00033
	(A3 * !B1 * Y)	0.00115	0.00117	0.00116
	(A2 * !A3 * !B1 * Y)	-0.00033	-0.00033	-0.00033
	(A2 * !A3 * !B1 * Y)	0.00115	0.00117	0.00116
	(!A2 * !A3 * !B1 * Y)	-0.00033	-0.00033	-0.00033
	(!A2 * !A3 * !B1 * Y)	0.00115	0.00116	0.00116
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00032	-0.00033	-0.00032
	(!A1 * !A2 * !A3 * B1 * Y)	0.00115	0.00116	0.00116
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00063	-0.00064	-0.00063
	(A3 * !B1 * Y)	0.00226	0.00230	0.00227
	(A2 * !A3 * !B1 * Y)	-0.00063	-0.00064	-0.00063
	(A2 * !A3 * !B1 * Y)	0.00227	0.00230	0.00227
	(!A2 * !A3 * !B1 * Y)	-0.00063	-0.00064	-0.00063
	(!A2 * !A3 * !B1 * Y)	0.00227	0.00230	0.00227
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00062	-0.00062	-0.00061
	(!A1 * !A2 * !A3 * B1 * Y)	0.00227	0.00228	0.00227
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00117	-0.00120	-0.00118
	(A3 * !B1 * Y)	0.00255	0.00260	0.00257
	(A2 * !A3 * !B1 * Y)	-0.00118	-0.00119	-0.00118
	(A2 * !A3 * !B1 * Y)	0.00256	0.00258	0.00257
	(!A2 * !A3 * !B1 * Y)	-0.00118	-0.00119	-0.00118
	(!A2 * !A3 * !B1 * Y)	0.00256	0.00258	0.00257
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00115	-0.00116	-0.00115
	(!A1 * !A2 * !A3 * B1 * Y)	0.00256	0.00257	0.00256

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	C1	X
0	0	0	x	x	0
0	x	1	0	x	0
0	x	1	1	0	0
0	x	1	1	1	1
x	1	x	0	x	0
x	1	x	1	0	0
x	1	x	1	1	1
1	x	x	0	x	0
1	x	x	1	0	0
1	x	x	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311a_1	14.38560
sky130_fd_sc_hs__o311a_2	14.38560
sky130_fd_sc_hs__o311a_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__o311a_1	0.00228	0.00274	0.00237	0.00232	0.00241	0.18909
sky130_fd_sc_hs__o311a_2	0.00253	0.00253	0.00255	0.00254	0.00254	0.37704
sky130_fd_sc_hs__o311a_4	0.00412	0.00455	0.00425	0.00525	0.00454	0.74397

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.00010	0.00018
sky130_fd_sc_hs__o311a_2	0.00000	0.00014	0.00022
sky130_fd_sc_hs__o311a_4	0.00000	0.00028	0.00044

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (RR)	0.39148	1.79572	10.21270
	A2->X (RR)	0.38786	1.79416	10.19110
	A3->X (RR)	0.37217	1.76567	10.09890
	B1->X (RR)	0.37253	1.80071	10.16690
	C1->X (RR)	0.36045	1.78323	9.95930
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.38520	1.59917	10.22380
	A2->X (RR)	0.37634	1.58626	10.17870
	A3->X (RR)	0.34869	1.55855	10.11640
	B1->X (RR)	0.37321	1.62935	10.27000
	C1->X (RR)	0.35840	1.61610	10.09390
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.40695	1.49435	10.35700
	A2->X (RR)	0.39205	1.47580	10.30850
	A3->X (RR)	0.37621	1.45761	10.24720
	B1->X (RR)	0.39744	1.52754	10.40960
	C1->X (RR)	0.37372	1.49825	10.18240

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	2.15620	3.33603	9.59057
	A2->X (FF)	2.12117	3.25671	9.61405
	A3->X (FF)	1.84429	2.87935	8.80030
	B1->X (FF)	0.43408	1.48356	7.46245
	C1->X (FF)	0.39910	1.44864	7.38237
sky130_fd_sc_hs__o311a_2	A1->X (FF)	2.45997	3.68939	10.15090
	A2->X (FF)	2.37655	3.57372	10.15040
	A3->X (FF)	2.21910	3.30636	9.48648
	B1->X (FF)	0.54919	1.59575	7.81674
	C1->X (FF)	0.50413	1.55146	7.72699
sky130_fd_sc_hs__o311a_4	A1->X (FF)	2.48060	3.66008	10.11470
	A2->X (FF)	2.43333	3.56938	10.12500
	A3->X (FF)	2.18596	3.20206	9.30047
	B1->X (FF)	0.50645	1.51910	7.72976
	C1->X (FF)	0.45450	1.47071	7.62111

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.00694	0.00693	0.00687
	A1	0.00320	0.00319	0.00313
	A2	0.00649	0.00651	0.00643
	A2	0.00291	0.00292	0.00285
	A3	0.00560	0.00563	0.00557
	A3	0.00240	0.00242	0.00236
	B1	0.00636	0.00635	0.00629
	B1	0.00321	0.00320	0.00314
	C1	0.00606	0.00603	0.00595
	C1	0.00320	0.00317	0.00310
sky130_fd_sc_hs__o311a_2	A1	0.00827	0.00832	0.00827
	A1	0.00425	0.00429	0.00426
	A2	0.00763	0.00776	0.00775
	A2	0.00391	0.00403	0.00403
	A3	0.00705	0.00715	0.00715
	A3	0.00361	0.00371	0.00372
	B1	0.00768	0.00772	0.00769
	B1	0.00435	0.00439	0.00437
	C1	0.00730	0.00733	0.00727
	C1	0.00434	0.00436	0.00432

sky130_fd_sc_hs__o311a_4	**A1**	0.01548	0.01570	0.01580
	A1	0.00861	0.00882	0.00897
	A2	0.01463	0.01487	0.01494
	A2	0.00801	0.00825	0.00835
	A3	0.01298	0.01323	0.01326
	A3	0.00699	0.00724	0.00727
	B1	0.01483	0.01498	0.01506
	B1	0.00861	0.00875	0.00887
	C1	0.01375	0.01386	0.01390
	C1	0.00861	0.00873	0.00879

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00250	0.00249	0.00246
	A1	0.00617	0.00616	0.00610
	A2	0.00251	0.00249	0.00213
	A2	0.00600	0.00598	0.00591
	A3	0.00252	0.00252	0.00248
	A3	0.00560	0.00560	0.00553
	B1	0.00189	0.00180	0.00202
	B1	0.00506	0.00499	0.00494
	C1	0.00167	0.00154	0.00155
	C1	0.00459	0.00450	0.00445

sky130_fd_sc_hs__o311a_2	**A1**	0.00362	0.00371	0.00357
	A1	0.00756	0.00765	0.00768
	A2	0.00363	0.00374	0.00362
	A2	0.00725	0.00735	0.00738
	A3	0.00362	0.00371	0.00375
	A3	0.00693	0.00701	0.00701
	B1	0.00333	0.00335	0.00405
	B1	0.00667	0.00669	0.00666
	C1	0.00306	0.00305	0.00364
	C1	0.00608	0.00608	0.00605
sky130_fd_sc_hs__o311a_4	**A1**	0.00745	0.00773	0.00724
	A1	0.01416	0.01443	0.01458
	A2	0.00734	0.00759	0.00715
	A2	0.01375	0.01398	0.01411
	A3	0.00745	0.00764	0.00777
	A3	0.01315	0.01335	0.01341
	B1	0.00648	0.00652	0.00764
	B1	0.01276	0.01279	0.01272
	C1	0.00598	0.00603	0.00752
	C1	0.01124	0.01129	0.01130

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A2 * B1 * !C1 * !X)**	0.00069	0.00070	0.00069
	(A2 * B1 * !C1 * !X)	-0.00090	-0.00091	-0.00091
	(A2 * A3 * B1 * C1 * X)	0.00082	0.00082	0.00081
	(A2 * A3 * B1 * C1 * X)	-0.00078	-0.00079	-0.00078
	(A2 * !B1 * !X)	0.00069	0.00070	0.00069
	(A2 * !B1 * !X)	-0.00090	-0.00091	-0.00091
	(A2 * !A3 * B1 * C1 * X)	0.00082	0.00082	0.00081
	(A2 * !A3 * B1 * C1 * X)	-0.00078	-0.00079	-0.00078
	(!A2 * A3 * B1 * C1 * X)	0.00082	0.00081	0.00081
	(!A2 * A3 * B1 * C1 * X)	-0.00074	-0.00076	-0.00075
	(!A2 * A3 * B1 * !C1 * !X)	0.00069	0.00069	0.00069
	(!A2 * A3 * B1 * !C1 * !X)	-0.00086	-0.00088	-0.00087
	(!A2 * A3 * !B1 * !X)	0.00070	0.00069	0.00069
	(!A2 * A3 * !B1 * !X)	-0.00086	-0.00088	-0.00087
	(!A2 * !A3 * B1 * !C1 * !X)	0.00065	0.00064	0.00064
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00093	-0.00092	-0.00092
	(!A2 * !A3 * !B1 * C1 * !X)	0.00066	0.00066	0.00066
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00093	-0.00093	-0.00092
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00066	0.00066	0.00066
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00093	-0.00093	-0.00092

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00074	0.00074	0.00074
	(A2 * B1 * !C1 * !X)	-0.00098	-0.00100	-0.00099
	(A2 * A3 * B1 * C1 * X)	0.00084	0.00085	0.00084
	(A2 * A3 * B1 * C1 * X)	-0.00088	-0.00090	-0.00089
	(A2 * !B1 * !X)	0.00074	0.00074	0.00074
	(A2 * !B1 * !X)	-0.00098	-0.00100	-0.00099
	(A2 * !A3 * B1 * C1 * X)	0.00084	0.00085	0.00084
	(A2 * !A3 * B1 * C1 * X)	-0.00088	-0.00090	-0.00089
	(!A2 * A3 * B1 * C1 * X)	0.00084	0.00085	0.00084
	(!A2 * A3 * B1 * C1 * X)	-0.00083	-0.00085	-0.00084
	(!A2 * A3 * B1 * !C1 * !X)	0.00074	0.00074	0.00074
	(!A2 * A3 * B1 * !C1 * !X)	-0.00094	-0.00095	-0.00095
	(!A2 * A3 * !B1 * !X)	0.00074	0.00074	0.00074
	(!A2 * A3 * !B1 * !X)	-0.00094	-0.00095	-0.00095
	(!A2 * !A3 * B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00102	-0.00102	-0.00102
	(!A2 * !A3 * !B1 * C1 * !X)	0.00069	0.00069	0.00068
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00102	-0.00103	-0.00102
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00069	0.00069	0.00068
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00102	-0.00103	-0.00102

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00126	0.00126	0.00125
	(A2 * B1 * !C1 * !X)	-0.00164	-0.00166	-0.00165
	(A2 * A3 * B1 * C1 * X)	0.00126	0.00126	0.00125
	(A2 * A3 * B1 * C1 * X)	-0.00164	-0.00166	-0.00165
	(A2 * !B1 * !X)	0.00126	0.00126	0.00125
	(A2 * !B1 * !X)	-0.00164	-0.00166	-0.00165
	(A2 * !A3 * B1 * C1 * X)	0.00125	0.00126	0.00125
	(A2 * !A3 * B1 * C1 * X)	-0.00163	-0.00166	-0.00165
	(!A2 * A3 * B1 * C1 * X)	0.00125	0.00126	0.00125
	(!A2 * A3 * B1 * C1 * X)	-0.00155	-0.00158	-0.00157
	(!A2 * A3 * B1 * !C1 * !X)	0.00125	0.00126	0.00125
	(!A2 * A3 * B1 * !C1 * !X)	-0.00156	-0.00158	-0.00157
	(!A2 * A3 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A2 * A3 * !B1 * !X)	-0.00155	-0.00158	-0.00157
	(!A2 * !A3 * B1 * !C1 * !X)	0.00114	0.00114	0.00114
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00170	-0.00170	-0.00170
	(!A2 * !A3 * !B1 * C1 * !X)	0.00117	0.00117	0.00116
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00170	-0.00170	-0.00169
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00117	0.00117	0.00116
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00170	-0.00170	-0.00170

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A2 * B1 * !C1 * !X)**	-0.00069	-0.00069	-0.00069
	(A2 * B1 * !C1 * !X)	0.00091	0.00091	0.00091
	(A2 * A3 * B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A2 * A3 * B1 * C1 * X)	0.00079	0.00079	0.00078
	(A2 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(A2 * !B1 * !X)	0.00091	0.00091	0.00091
	(A2 * !A3 * B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A2 * !A3 * B1 * C1 * X)	0.00079	0.00079	0.00078
	(!A2 * A3 * B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(!A2 * A3 * B1 * C1 * X)	0.00075	0.00076	0.00075
	(!A2 * A3 * B1 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(!A2 * A3 * B1 * !C1 * !X)	0.00087	0.00088	0.00087
	(!A2 * A3 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(!A2 * A3 * !B1 * !X)	0.00087	0.00088	0.00087
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00063	-0.00064	-0.00064
	(!A2 * !A3 * B1 * !C1 * !X)	0.00093	0.00093	0.00093
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00065	-0.00066	-0.00066
	(!A2 * !A3 * !B1 * C1 * !X)	0.00093	0.00093	0.00093
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00065	-0.00066	-0.00066
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00093	0.00093	0.00093

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00074	-0.00074	-0.00074
	(A2 * B1 * !C1 * !X)	0.00100	0.00100	0.00099
	(A2 * A3 * B1 * C1 * X)	-0.00084	-0.00084	-0.00084
	(A2 * A3 * B1 * C1 * X)	0.00089	0.00090	0.00089
	(A2 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(A2 * !B1 * !X)	0.00100	0.00100	0.00099
	(A2 * !A3 * B1 * C1 * X)	-0.00084	-0.00084	-0.00084
	(A2 * !A3 * B1 * C1 * X)	0.00090	0.00090	0.00089
	(!A2 * A3 * B1 * C1 * X)	-0.00084	-0.00084	-0.00084
	(!A2 * A3 * B1 * C1 * X)	0.00084	0.00085	0.00084
	(!A2 * A3 * B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(!A2 * A3 * B1 * !C1 * !X)	0.00095	0.00095	0.00095
	(!A2 * A3 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A2 * A3 * !B1 * !X)	0.00095	0.00095	0.00095
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00065	-0.00067	-0.00067
	(!A2 * !A3 * B1 * !C1 * !X)	0.00102	0.00103	0.00102
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00067	-0.00069	-0.00068
	(!A2 * !A3 * !B1 * C1 * !X)	0.00102	0.00103	0.00102
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00067	-0.00069	-0.00068
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00102	0.00103	0.00102

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00125	-0.00125	-0.00124
	(A2 * B1 * !C1 * !X)	0.00165	0.00166	0.00165
	(A2 * A3 * B1 * C1 * X)	-0.00125	-0.00125	-0.00124
	(A2 * A3 * B1 * C1 * X)	0.00165	0.00166	0.00165
	(A2 * !B1 * !X)	-0.00125	-0.00125	-0.00124
	(A2 * !B1 * !X)	0.00165	0.00166	0.00165
	(A2 * !A3 * B1 * C1 * X)	-0.00125	-0.00125	-0.00124
	(A2 * !A3 * B1 * C1 * X)	0.00165	0.00166	0.00165
	(!A2 * A3 * B1 * C1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * A3 * B1 * C1 * X)	0.00157	0.00158	0.00157
	(!A2 * A3 * B1 * !C1 * !X)	-0.00125	-0.00125	-0.00124
	(!A2 * A3 * B1 * !C1 * !X)	0.00158	0.00158	0.00157
	(!A2 * A3 * !B1 * !X)	-0.00125	-0.00125	-0.00124
	(!A2 * A3 * !B1 * !X)	0.00158	0.00158	0.00157
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00110	-0.00114	-0.00114
	(!A2 * !A3 * B1 * !C1 * !X)	0.00170	0.00171	0.00170
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00114	-0.00117	-0.00116
	(!A2 * !A3 * !B1 * C1 * !X)	0.00171	0.00171	0.00170
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00114	-0.00117	-0.00116
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00171	0.00171	0.00170

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A1 * A3 * B1 * C1 * X)**	0.00084	0.00084	0.00084
	(A1 * A3 * B1 * C1 * X)	-0.00065	-0.00065	-0.00064
	(A1 * A3 * B1 * !C1 * !X)	0.00070	0.00070	0.00069
	(A1 * A3 * B1 * !C1 * !X)	-0.00084	-0.00085	-0.00084
	(A1 * A3 * !B1 * !X)	0.00070	0.00070	0.00069
	(A1 * A3 * !B1 * !X)	-0.00085	-0.00085	-0.00084
	(A1 * !A3 * B1 * C1 * X)	0.00085	0.00084	0.00084
	(A1 * !A3 * B1 * C1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A3 * B1 * !C1 * !X)	0.00069	0.00070	0.00069
	(A1 * !A3 * B1 * !C1 * !X)	-0.00096	-0.00097	-0.00097
	(A1 * !A3 * !B1 * C1 * !X)	0.00069	0.00070	0.00069
	(A1 * !A3 * !B1 * C1 * !X)	-0.00096	-0.00097	-0.00097
	(A1 * !A3 * !B1 * !C1 * !X)	0.00069	0.00070	0.00069
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00096	-0.00097	-0.00097
	(!A1 * A3 * B1 * C1 * X)	0.00084	0.00085	0.00084
	(!A1 * A3 * B1 * C1 * X)	-0.00081	-0.00082	-0.00082
	(!A1 * A3 * B1 * !C1 * !X)	0.00069	0.00070	0.00069
	(!A1 * A3 * B1 * !C1 * !X)	-0.00096	-0.00097	-0.00096
	(!A1 * A3 * !B1 * !X)	0.00069	0.00070	0.00069
	(!A1 * A3 * !B1 * !X)	-0.00096	-0.00097	-0.00096
	(!A1 * !A3 * B1 * !C1 * !X)	0.00065	0.00064	0.00064
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(!A1 * !A3 * !B1 * C1 * !X)	0.00065	0.00066	0.00066
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00098	-0.00099	-0.00099
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00065	0.00066	0.00066
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00099	-0.00099	-0.00099

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00077	0.00078	0.00077
	(A1 * A3 * B1 * C1 * X)	-0.00072	-0.00072	-0.00071
	(A1 * A3 * B1 * !C1 * !X)	0.00074	0.00074	0.00074
	(A1 * A3 * B1 * !C1 * !X)	-0.00079	-0.00079	-0.00078
	(A1 * A3 * !B1 * !X)	0.00074	0.00074	0.00074
	(A1 * A3 * !B1 * !X)	-0.00079	-0.00079	-0.00078
	(A1 * !A3 * B1 * C1 * X)	0.00078	0.00078	0.00077
	(A1 * !A3 * B1 * C1 * X)	-0.00070	-0.00069	-0.00069
	(A1 * !A3 * B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A3 * B1 * !C1 * !X)	-0.00093	-0.00094	-0.00094
	(A1 * !A3 * !B1 * C1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A3 * !B1 * C1 * !X)	-0.00093	-0.00094	-0.00094
	(A1 * !A3 * !B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00093	-0.00094	-0.00094
	(!A1 * A3 * B1 * C1 * X)	0.00077	0.00077	0.00077
	(!A1 * A3 * B1 * C1 * X)	-0.00090	-0.00091	-0.00091
	(!A1 * A3 * B1 * !C1 * !X)	0.00074	0.00074	0.00074
	(!A1 * A3 * B1 * !C1 * !X)	-0.00093	-0.00094	-0.00094
	(!A1 * A3 * !B1 * !X)	0.00074	0.00074	0.00074
	(!A1 * A3 * !B1 * !X)	-0.00093	-0.00094	-0.00094
	(!A1 * !A3 * B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00097	-0.00097	-0.00097
	(!A1 * !A3 * !B1 * C1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00097	-0.00097	-0.00097
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00097	-0.00097	-0.00097

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00145	0.00146	0.00145
	(A1 * A3 * B1 * C1 * X)	-0.00130	-0.00130	-0.00129
	(A1 * A3 * B1 * !C1 * !X)	0.00147	0.00146	0.00145
	(A1 * A3 * B1 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(A1 * A3 * !B1 * !X)	0.00147	0.00146	0.00145
	(A1 * A3 * !B1 * !X)	-0.00139	-0.00140	-0.00139
	(A1 * !A3 * B1 * C1 * X)	0.00148	0.00146	0.00145
	(A1 * !A3 * B1 * C1 * X)	-0.00127	-0.00126	-0.00126
	(A1 * !A3 * B1 * !C1 * !X)	0.00145	0.00147	0.00145
	(A1 * !A3 * B1 * !C1 * !X)	-0.00162	-0.00164	-0.00163
	(A1 * !A3 * !B1 * C1 * !X)	0.00145	0.00147	0.00145
	(A1 * !A3 * !B1 * C1 * !X)	-0.00162	-0.00164	-0.00163
	(A1 * !A3 * !B1 * !C1 * !X)	0.00145	0.00147	0.00145
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00162	-0.00164	-0.00164
	(!A1 * A3 * B1 * C1 * X)	0.00145	0.00147	0.00145
	(!A1 * A3 * B1 * C1 * X)	-0.00162	-0.00164	-0.00163
	(!A1 * A3 * B1 * !C1 * !X)	0.00145	0.00147	0.00145
	(!A1 * A3 * B1 * !C1 * !X)	-0.00162	-0.00165	-0.00164
	(!A1 * A3 * !B1 * !X)	0.00145	0.00147	0.00145
	(!A1 * A3 * !B1 * !X)	-0.00162	-0.00165	-0.00164
	(!A1 * !A3 * B1 * !C1 * !X)	0.00131	0.00132	0.00131
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00169	-0.00169	-0.00168
	(!A1 * !A3 * !B1 * C1 * !X)	0.00134	0.00135	0.00134
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00134	0.00135	0.00134
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00168	-0.00169	-0.00168

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A1 * A3 * B1 * C1 * X)**	-0.00084	-0.00084	-0.00084
	(A1 * A3 * B1 * C1 * X)	0.00065	0.00065	0.00064
	(A1 * A3 * B1 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * A3 * B1 * !C1 * !X)	0.00084	0.00085	0.00084
	(A1 * A3 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * A3 * !B1 * !X)	0.00085	0.00085	0.00084
	(A1 * !A3 * B1 * C1 * X)	-0.00084	-0.00084	-0.00084
	(A1 * !A3 * B1 * C1 * X)	0.00064	0.00064	0.00064
	(A1 * !A3 * B1 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * B1 * !C1 * !X)	0.00097	0.00097	0.00097
	(A1 * !A3 * !B1 * C1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * !B1 * C1 * !X)	0.00097	0.00097	0.00097
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * !B1 * !C1 * !X)	0.00097	0.00097	0.00097
	(!A1 * A3 * B1 * C1 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * A3 * B1 * C1 * X)	0.00082	0.00082	0.00082
	(!A1 * A3 * B1 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * A3 * B1 * !C1 * !X)	0.00097	0.00097	0.00096
	(!A1 * A3 * !B1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * A3 * !B1 * !X)	0.00097	0.00097	0.00096
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00063	-0.00064	-0.00064
	(!A1 * !A3 * B1 * !C1 * !X)	0.00099	0.00099	0.00099
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00065	-0.00066	-0.00066
	(!A1 * !A3 * !B1 * C1 * !X)	0.00099	0.00099	0.00099
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00065	-0.00066	-0.00066
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00099	0.00099	0.00099

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00077	-0.00077	-0.00077
	(A1 * A3 * B1 * C1 * X)	0.00072	0.00072	0.00071
	(A1 * A3 * B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * A3 * B1 * !C1 * !X)	0.00079	0.00079	0.00078
	(A1 * A3 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * A3 * !B1 * !X)	0.00079	0.00079	0.00078
	(A1 * !A3 * B1 * C1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A3 * B1 * C1 * X)	0.00071	0.00070	0.00070
	(A1 * !A3 * B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A3 * B1 * !C1 * !X)	0.00094	0.00094	0.00094
	(A1 * !A3 * !B1 * C1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A3 * !B1 * C1 * !X)	0.00094	0.00094	0.00094
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A3 * !B1 * !C1 * !X)	0.00094	0.00094	0.00094
	(!A1 * A3 * B1 * C1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * A3 * B1 * C1 * X)	0.00091	0.00091	0.00091
	(!A1 * A3 * B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * A3 * B1 * !C1 * !X)	0.00094	0.00094	0.00094
	(!A1 * A3 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * A3 * !B1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00065	-0.00067	-0.00067
	(!A1 * !A3 * B1 * !C1 * !X)	0.00097	0.00097	0.00097
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00067	-0.00069	-0.00068
	(!A1 * !A3 * !B1 * C1 * !X)	0.00097	0.00098	0.00097
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00067	-0.00069	-0.00068
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00097	0.00098	0.00097

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00145	-0.00145	-0.00145
	(A1 * A3 * B1 * C1 * X)	0.00130	0.00130	0.00129
	(A1 * A3 * B1 * !C1 * !X)	-0.00144	-0.00145	-0.00145
	(A1 * A3 * B1 * !C1 * !X)	0.00139	0.00140	0.00139
	(A1 * A3 * !B1 * !X)	-0.00144	-0.00145	-0.00145
	(A1 * A3 * !B1 * !X)	0.00139	0.00140	0.00139
	(A1 * !A3 * B1 * C1 * X)	-0.00145	-0.00145	-0.00145
	(A1 * !A3 * B1 * C1 * X)	0.00127	0.00127	0.00128
	(A1 * !A3 * B1 * !C1 * !X)	-0.00145	-0.00145	-0.00145
	(A1 * !A3 * B1 * !C1 * !X)	0.00164	0.00164	0.00163
	(A1 * !A3 * !B1 * C1 * !X)	-0.00145	-0.00145	-0.00145
	(A1 * !A3 * !B1 * C1 * !X)	0.00164	0.00164	0.00163
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00145	-0.00145	-0.00145
	(A1 * !A3 * !B1 * !C1 * !X)	0.00164	0.00164	0.00164
	(!A1 * A3 * B1 * C1 * X)	-0.00145	-0.00145	-0.00145
	(!A1 * A3 * B1 * C1 * X)	0.00164	0.00164	0.00163
	(!A1 * A3 * B1 * !C1 * !X)	-0.00145	-0.00145	-0.00145
	(!A1 * A3 * B1 * !C1 * !X)	0.00164	0.00165	0.00164
	(!A1 * A3 * !B1 * !X)	-0.00145	-0.00145	-0.00145
	(!A1 * A3 * !B1 * !X)	0.00164	0.00165	0.00164
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00127	-0.00132	-0.00131
	(!A1 * !A3 * B1 * !C1 * !X)	0.00169	0.00169	0.00169
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00130	-0.00135	-0.00134
	(!A1 * !A3 * !B1 * C1 * !X)	0.00168	0.00169	0.00169
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00131	-0.00135	-0.00134
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00168	0.00170	0.00169

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A2 * B1 * C1 * X)**	0.00079	0.00078	0.00078
	(A2 * B1 * C1 * X)	-0.00058	-0.00057	-0.00057
	(A2 * B1 * !C1 * !X)	0.00068	0.00069	0.00068
	(A2 * B1 * !C1 * !X)	-0.00084	-0.00085	-0.00084
	(A2 * !B1 * C1 * !X)	0.00068	0.00069	0.00068
	(A2 * !B1 * C1 * !X)	-0.00084	-0.00085	-0.00084
	(A2 * !B1 * !C1 * !X)	0.00068	0.00069	0.00068
	(A2 * !B1 * !C1 * !X)	-0.00084	-0.00085	-0.00085
	(A1 * !A2 * B1 * C1 * X)	0.00079	0.00078	0.00078
	(A1 * !A2 * B1 * C1 * X)	-0.00058	-0.00057	-0.00057
	(A1 * !A2 * B1 * !C1 * !X)	0.00069	0.00069	0.00068
	(A1 * !A2 * B1 * !C1 * !X)	-0.00080	-0.00081	-0.00080
	(A1 * !A2 * !B1 * C1 * !X)	0.00069	0.00069	0.00068
	(A1 * !A2 * !B1 * C1 * !X)	-0.00080	-0.00081	-0.00080
	(A1 * !A2 * !B1 * !C1 * !X)	0.00069	0.00068	0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00080	-0.00081	-0.00081
	(!A1 * !A2 * B1 * !C1 * !X)	0.00064	0.00063	0.00063
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * !B1 * C1 * !X)	0.00065	0.00065	0.00065
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00065	0.00065	0.00065
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00087	-0.00087

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00087	0.00087	0.00086
	(A2 * B1 * C1 * X)	-0.00059	-0.00059	-0.00059
	(A2 * B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(A2 * B1 * !C1 * !X)	-0.00090	-0.00091	-0.00091
	(A2 * !B1 * C1 * !X)	0.00074	0.00075	0.00074
	(A2 * !B1 * C1 * !X)	-0.00090	-0.00091	-0.00091
	(A2 * !B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(A2 * !B1 * !C1 * !X)	-0.00090	-0.00092	-0.00091
	(A1 * !A2 * B1 * C1 * X)	0.00087	0.00087	0.00086
	(A1 * !A2 * B1 * C1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * B1 * !C1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A2 * B1 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * !B1 * C1 * !X)	0.00074	0.00075	0.00074
	(A1 * !A2 * !B1 * C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * !B1 * !C1 * !X)	0.00074	0.00074	0.00074
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * B1 * !C1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00094	-0.00094	-0.00094
	(!A1 * !A2 * !B1 * C1 * !X)	0.00069	0.00069	0.00068
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00094	-0.00095	-0.00094
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00069	0.00069	0.00068
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00094	-0.00095	-0.00094

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00149	0.00148	0.00148
	(A2 * B1 * C1 * X)	-0.00114	-0.00113	-0.00113
	(A2 * B1 * !C1 * !X)	0.00127	0.00128	0.00127
	(A2 * B1 * !C1 * !X)	-0.00168	-0.00170	-0.00169
	(A2 * !B1 * C1 * !X)	0.00127	0.00128	0.00127
	(A2 * !B1 * C1 * !X)	-0.00168	-0.00170	-0.00169
	(A2 * !B1 * !C1 * !X)	0.00127	0.00129	0.00127
	(A2 * !B1 * !C1 * !X)	-0.00168	-0.00170	-0.00169
	(A1 * !A2 * B1 * C1 * X)	0.00150	0.00148	0.00148
	(A1 * !A2 * B1 * C1 * X)	-0.00115	-0.00113	-0.00113
	(A1 * !A2 * B1 * !C1 * !X)	0.00128	0.00129	0.00127
	(A1 * !A2 * B1 * !C1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * !B1 * C1 * !X)	0.00128	0.00129	0.00127
	(A1 * !A2 * !B1 * C1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * !B1 * !C1 * !X)	0.00129	0.00126	0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00161	-0.00161	-0.00161
	(!A1 * !A2 * B1 * !C1 * !X)	0.00116	0.00115	0.00116
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00174	-0.00173	-0.00174
	(!A1 * !A2 * !B1 * C1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00174	-0.00174	-0.00174
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00119	0.00119	0.00118
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00174	-0.00174	-0.00174

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A2 * B1 * C1 * X)**	-0.00075	-0.00075	-0.00078
	(A2 * B1 * C1 * X)	0.00061	0.00060	0.00058
	(A2 * B1 * !C1 * !X)	-0.00068	-0.00069	-0.00068
	(A2 * B1 * !C1 * !X)	0.00085	0.00085	0.00084
	(A2 * !B1 * C1 * !X)	-0.00068	-0.00069	-0.00068
	(A2 * !B1 * C1 * !X)	0.00085	0.00085	0.00084
	(A2 * !B1 * !C1 * !X)	-0.00068	-0.00069	-0.00068
	(A2 * !B1 * !C1 * !X)	0.00085	0.00085	0.00085
	(A1 * !A2 * B1 * C1 * X)	-0.00068	-0.00068	-0.00076
	(A1 * !A2 * B1 * C1 * X)	0.00066	0.00065	0.00059
	(A1 * !A2 * B1 * !C1 * !X)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * B1 * !C1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * C1 * !X)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * !B1 * C1 * !X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00068	-0.00068	-0.00068
	(A1 * !A2 * !B1 * !C1 * !X)	0.00081	0.00081	0.00081
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00062	-0.00063	-0.00063
	(!A1 * !A2 * B1 * !C1 * !X)	0.00086	0.00087	0.00087
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00064	-0.00065	-0.00065
	(!A1 * !A2 * !B1 * C1 * !X)	0.00087	0.00087	0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00064	-0.00065	-0.00065
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00087	0.00087	0.00087

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00086	-0.00086	-0.00086
	(A2 * B1 * C1 * X)	0.00060	0.00060	0.00059
	(A2 * B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(A2 * B1 * !C1 * !X)	0.00091	0.00091	0.00091
	(A2 * !B1 * C1 * !X)	-0.00074	-0.00074	-0.00074
	(A2 * !B1 * C1 * !X)	0.00091	0.00091	0.00091
	(A2 * !B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(A2 * !B1 * !C1 * !X)	0.00091	0.00092	0.00091
	(A1 * !A2 * B1 * C1 * X)	-0.00077	-0.00078	-0.00085
	(A1 * !A2 * B1 * C1 * X)	0.00065	0.00065	0.00060
	(A1 * !A2 * B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * B1 * !C1 * !X)	0.00086	0.00086	0.00086
	(A1 * !A2 * !B1 * C1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * !B1 * C1 * !X)	0.00086	0.00086	0.00086
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * !B1 * !C1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00065	-0.00067	-0.00067
	(!A1 * !A2 * B1 * !C1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00067	-0.00069	-0.00068
	(!A1 * !A2 * !B1 * C1 * !X)	0.00094	0.00095	0.00094
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00067	-0.00069	-0.00068
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00094	0.00095	0.00094

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00143	-0.00143	-0.00148
	(A2 * B1 * C1 * X)	0.00120	0.00119	0.00114
	(A2 * B1 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(A2 * B1 * !C1 * !X)	0.00170	0.00170	0.00169
	(A2 * !B1 * C1 * !X)	-0.00127	-0.00128	-0.00127
	(A2 * !B1 * C1 * !X)	0.00170	0.00170	0.00169
	(A2 * !B1 * !C1 * !X)	-0.00127	-0.00127	-0.00127
	(A2 * !B1 * !C1 * !X)	0.00170	0.00170	0.00169
	(A1 * !A2 * B1 * C1 * X)	-0.00127	-0.00128	-0.00145
	(A1 * !A2 * B1 * C1 * X)	0.00129	0.00129	0.00116
	(A1 * !A2 * B1 * !C1 * !X)	-0.00127	-0.00127	-0.00127
	(A1 * !A2 * B1 * !C1 * !X)	0.00161	0.00161	0.00160
	(A1 * !A2 * !B1 * C1 * !X)	-0.00127	-0.00127	-0.00127
	(A1 * !A2 * !B1 * C1 * !X)	0.00161	0.00161	0.00160
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00127	-0.00126	-0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	0.00161	0.00161	0.00161
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00112	-0.00115	-0.00116
	(!A1 * !A2 * B1 * !C1 * !X)	0.00174	0.00175	0.00174
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00116	-0.00119	-0.00118
	(!A1 * !A2 * !B1 * C1 * !X)	0.00174	0.00175	0.00174
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00116	-0.00119	-0.00118
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00174	0.00175	0.00174

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00061	0.00061	0.00061
	(A3 * !C1 * !X)	-0.00088	-0.00089	-0.00088
	(A2 * !A3 * !C1 * !X)	0.00060	0.00061	0.00061
	(A2 * !A3 * !C1 * !X)	-0.00088	-0.00089	-0.00088
	(A1 * !A2 * !A3 * !C1 * !X)	0.00061	0.00061	0.00061
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A2 * !A3 * C1 * !X)	0.00039	0.00039	0.00037
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00043	0.00043	0.00043
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00088	-0.00089	-0.00088
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00068	0.00069	0.00068
	(A3 * !C1 * !X)	-0.00092	-0.00092	-0.00092
	(A2 * !A3 * !C1 * !X)	0.00068	0.00069	0.00068
	(A2 * !A3 * !C1 * !X)	-0.00091	-0.00092	-0.00092
	(A1 * !A2 * !A3 * !C1 * !X)	0.00068	0.00068	0.00068
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00092	-0.00092	-0.00092
	(!A1 * !A2 * !A3 * C1 * !X)	0.00037	0.00038	0.00038
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00093	-0.00093	-0.00092
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00042	0.00043	0.00042
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00093	-0.00094	-0.00093
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00135	0.00135	0.00134
	(A3 * !C1 * !X)	-0.00200	-0.00200	-0.00199
	(A2 * !A3 * !C1 * !X)	0.00134	0.00135	0.00134
	(A2 * !A3 * !C1 * !X)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * !A3 * !C1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00199	-0.00200	-0.00199
	(!A1 * !A2 * !A3 * C1 * !X)	0.00083	0.00083	0.00082
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00199	-0.00199	-0.00198
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00092	0.00092	0.00091
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00200	-0.00201	-0.00200

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00060	-0.00061	-0.00061
	(A3 * !C1 * !X)	0.00088	0.00089	0.00089
	(A2 * !A3 * !C1 * !X)	-0.00060	-0.00061	-0.00061
	(A2 * !A3 * !C1 * !X)	0.00089	0.00089	0.00089
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00059	-0.00061	-0.00061
	(A1 * !A2 * !A3 * !C1 * !X)	0.00088	0.00089	0.00089
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * !A3 * C1 * !X)	0.00091	0.00091	0.00089
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00088	0.00089	0.00089
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00067	-0.00069	-0.00068
	(A3 * !C1 * !X)	0.00092	0.00093	0.00092
	(A2 * !A3 * !C1 * !X)	-0.00067	-0.00069	-0.00068
	(A2 * !A3 * !C1 * !X)	0.00092	0.00093	0.00092
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00067	-0.00068	-0.00068
	(A1 * !A2 * !A3 * !C1 * !X)	0.00092	0.00093	0.00092
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00036	-0.00035	-0.00036
	(!A1 * !A2 * !A3 * C1 * !X)	0.00096	0.00095	0.00093
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00094	0.00094	0.00094

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00133	-0.00135	-0.00134
	(A3 * !C1 * !X)	0.00200	0.00201	0.00199
	(A2 * !A3 * !C1 * !X)	-0.00133	-0.00135	-0.00134
	(A2 * !A3 * !C1 * !X)	0.00200	0.00201	0.00199
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00132	-0.00135	-0.00134
	(A1 * !A2 * !A3 * !C1 * !X)	0.00200	0.00201	0.00199
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00078	-0.00077	-0.00079
	(!A1 * !A2 * !A3 * C1 * !X)	0.00207	0.00205	0.00201
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00092	-0.00092	-0.00091
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00200	0.00201	0.00200

Passive power(pJ) for C1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00030	0.00030	0.00029
	(A3 * !B1 * !X)	-0.00104	-0.00105	-0.00105
	(A2 * !A3 * !B1 * !X)	0.00030	0.00030	0.00029
	(A2 * !A3 * !B1 * !X)	-0.00104	-0.00105	-0.00105
	(!A2 * !A3 * !B1 * !X)	0.00030	0.00030	0.00029
	(!A2 * !A3 * !B1 * !X)	-0.00104	-0.00105	-0.00105
	(!A1 * !A2 * !A3 * B1 * !X)	0.00036	0.00036	0.00031
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00096	-0.00097	-0.00104
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00035	0.00034	0.00033
	(A3 * !B1 * !X)	-0.00106	-0.00106	-0.00107
	(A2 * !A3 * !B1 * !X)	0.00034	0.00034	0.00033
	(A2 * !A3 * !B1 * !X)	-0.00106	-0.00106	-0.00107
	(!A2 * !A3 * !B1 * !X)	0.00034	0.00034	0.00033
	(!A2 * !A3 * !B1 * !X)	-0.00105	-0.00106	-0.00107
	(!A1 * !A2 * !A3 * B1 * !X)	0.00037	0.00037	0.00033
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00099	-0.00100	-0.00107
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00062	0.00062	0.00059
	(A3 * !B1 * !X)	-0.00194	-0.00195	-0.00200
	(A2 * !A3 * !B1 * !X)	0.00063	0.00062	0.00059
	(A2 * !A3 * !B1 * !X)	-0.00195	-0.00196	-0.00200
	(!A2 * !A3 * !B1 * !X)	0.00062	0.00062	0.00059
	(!A2 * !A3 * !B1 * !X)	-0.00195	-0.00196	-0.00200
	(!A1 * !A2 * !A3 * B1 * !X)	0.00067	0.00067	0.00058
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00182	-0.00183	-0.00197

Passive power(pJ) for C1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(A3 * !B1 * !X)	0.00106	0.00106	0.00105
	(A2 * !A3 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(A2 * !A3 * !B1 * !X)	0.00106	0.00106	0.00105
	(!A2 * !A3 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !A3 * !B1 * !X)	0.00106	0.00106	0.00105
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00029	-0.00029	-0.00028
	(!A1 * !A2 * !A3 * B1 * !X)	0.00106	0.00106	0.00105
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00033	-0.00033	-0.00033
	(A3 * !B1 * !X)	0.00108	0.00107	0.00107
	(A2 * !A3 * !B1 * !X)	-0.00033	-0.00033	-0.00033
	(A2 * !A3 * !B1 * !X)	0.00108	0.00107	0.00107
	(!A2 * !A3 * !B1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * !A3 * !B1 * !X)	0.00108	0.00107	0.00107
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00033	-0.00032	-0.00032
	(!A1 * !A2 * !A3 * B1 * !X)	0.00108	0.00107	0.00107
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00059	-0.00058	-0.00058
	(A3 * !B1 * !X)	0.00202	0.00201	0.00200
	(A2 * !A3 * !B1 * !X)	-0.00057	-0.00058	-0.00058
	(A2 * !A3 * !B1 * !X)	0.00198	0.00201	0.00200
	(!A2 * !A3 * !B1 * !X)	-0.00059	-0.00058	-0.00058
	(!A2 * !A3 * !B1 * !X)	0.00202	0.00201	0.00200
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00056	-0.00056	-0.00055
	(!A1 * !A2 * !A3 * B1 * !X)	0.00200	0.00201	0.00200

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	A3	B1	Y
0	0	0	x	1
0	x	1	0	1
0	x	1	1	0
x	1	x	0	1
x	1	x	1	0
1	x	x	0	1
1	x	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31ai_1	9.59040
sky130_fd_sc_hs__o31ai_2	15.98400
sky130_fd_sc_hs__o31ai_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__o31ai_1	0.00233	0.00278	0.00275	0.00250	0.04497
sky130_fd_sc_hs__o31ai_2	0.00471	0.00465	0.00500	0.00499	0.08681
sky130_fd_sc_hs__o31ai_4	0.00904	0.00910	0.00971	0.00737	0.17188

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.00006	0.00010
sky130_fd_sc_hs__o31ai_2	0.00000	0.00012	0.00021
sky130_fd_sc_hs__o31ai_4	0.00000	0.00020	0.00042

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (FR)	1.22979	3.55735	14.48580
	A2->Y (FR)	1.22468	3.50821	14.55800
	A3->Y (FR)	1.03905	3.21789	13.75100
	B1->Y (FR)	0.20135	1.41291	8.39362
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	1.19241	3.24310	14.57590
	A2->Y (FR)	1.11028	3.11423	14.55850
	A3->Y (FR)	0.93386	2.81108	13.77380
	B1->Y (FR)	0.17166	1.32488	8.40540
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	1.06657	2.87908	14.58020
	A2->Y (FR)	0.99429	2.76217	14.57680
	A3->Y (FR)	0.80523	2.45645	13.79560
	B1->Y (FR)	0.22451	1.50732	9.95013

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.09350	0.74580	4.16386
	A2->Y (RF)	0.09773	0.74399	4.15163
	A3->Y (RF)	0.09072	0.72892	4.12273
	B1->Y (RF)	0.08209	0.74906	4.17535
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.09356	0.72456	4.20796
	A2->Y (RF)	0.09396	0.71546	4.18259
	A3->Y (RF)	0.08935	0.70151	4.15758
	B1->Y (RF)	0.07670	0.71835	4.23518
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.09032	0.68570	4.19914
	A2->Y (RF)	0.08977	0.67619	4.17259
	A3->Y (RF)	0.08235	0.65436	4.12077
	B1->Y (RF)	0.07395	0.70279	4.41780

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00037	0.00032	0.00030
	A1	0.00379	0.00373	0.00371
	A2	0.00040	0.00031	0.00030
	A2	0.00369	0.00361	0.00358
	A3	0.00038	0.00029	0.00027
	A3	0.00334	0.00325	0.00322
	B1	-0.00012	-0.00019	-0.00020
	B1	0.00277	0.00269	0.00268
sky130_fd_sc_hs__o31ai_2	A1	0.00065	0.00050	0.00047
	A1	0.00748	0.00732	0.00728
	A2	0.00067	0.00053	0.00049
	A2	0.00680	0.00665	0.00660
	A3	0.00062	0.00043	0.00039
	A3	0.00622	0.00600	0.00597
	B1	-0.00072	-0.00085	-0.00086
	B1	0.00485	0.00472	0.00470
sky130_fd_sc_hs__o31ai_4	A1	0.00100	0.00073	0.00069
	A1	0.01417	0.01389	0.01383
	A2	0.00100	0.00072	0.00068
	A2	0.01296	0.01266	0.01259
	A3	0.00088	0.00056	0.00050
	A3	0.01170	0.01133	0.01129
	B1	-0.00137	-0.00157	-0.00156
	B1	0.00766	0.00745	0.00743

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00432	0.00427	0.00417
	A1	0.00091	0.00085	0.00078
	A2	0.00394	0.00390	0.00383
	A2	0.00061	0.00056	0.00050
	A3	0.00330	0.00330	0.00326
	A3	0.00027	0.00025	0.00022
	B1	0.00370	0.00365	0.00356
	B1	0.00089	0.00084	0.00077
sky130_fd_sc_hs__o31ai_2	A1	0.00864	0.00853	0.00831
	A1	0.00185	0.00173	0.00156
	A2	0.00736	0.00730	0.00718
	A2	0.00114	0.00106	0.00096
	A3	0.00623	0.00620	0.00616
	A3	0.00048	0.00043	0.00040
	B1	0.00724	0.00714	0.00694
	B1	0.00188	0.00175	0.00161
sky130_fd_sc_hs__o31ai_4	A1	0.01569	0.01547	0.01503
	A1	0.00258	0.00232	0.00202
	A2	0.01330	0.01315	0.01293
	A2	0.00121	0.00102	0.00084
	A3	0.01090	0.01084	0.01083
	A3	-0.00017	-0.00030	-0.00030
	B1	0.01257	0.01246	0.01217
	B1	0.00393	0.00382	0.00360

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o31ai_1	**(A2 * A3 * B1 * !Y)**	0.00080	0.00080	0.00079
	(A2 * A3 * B1 * !Y)	-0.00087	-0.00088	-0.00088
	(A2 * !B1 * Y)	0.00080	0.00080	0.00079
	(A2 * !B1 * Y)	-0.00087	-0.00088	-0.00088
	(A2 * !A3 * B1 * !Y)	0.00080	0.00080	0.00079
	(A2 * !A3 * B1 * !Y)	-0.00087	-0.00088	-0.00088
	(!A2 * A3 * B1 * !Y)	0.00080	0.00080	0.00079
	(!A2 * A3 * B1 * !Y)	-0.00082	-0.00084	-0.00083
	(!A2 * A3 * !B1 * Y)	0.00080	0.00080	0.00079
	(!A2 * A3 * !B1 * Y)	-0.00082	-0.00084	-0.00083
	(!A2 * !A3 * !B1 * Y)	0.00074	0.00074	0.00074
	(!A2 * !A3 * !B1 * Y)	-0.00091	-0.00091	-0.00090
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00161	0.00162	0.00160
	(A2 * A3 * B1 * !Y)	-0.00178	-0.00182	-0.00181
	(A2 * !B1 * Y)	0.00160	0.00161	0.00160
	(A2 * !B1 * Y)	-0.00179	-0.00183	-0.00181
	(A2 * !A3 * B1 * !Y)	0.00161	0.00162	0.00160
	(A2 * !A3 * B1 * !Y)	-0.00178	-0.00182	-0.00181
	(!A2 * A3 * B1 * !Y)	0.00161	0.00162	0.00160
	(!A2 * A3 * B1 * !Y)	-0.00169	-0.00172	-0.00171
	(!A2 * A3 * !B1 * Y)	0.00161	0.00161	0.00160
	(!A2 * A3 * !B1 * Y)	-0.00170	-0.00173	-0.00172
	(!A2 * !A3 * !B1 * Y)	0.00147	0.00147	0.00146
	(!A2 * !A3 * !B1 * Y)	-0.00188	-0.00190	-0.00189

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00311	0.00311	0.00308
	(A2 * A3 * B1 * !Y)	-0.00354	-0.00361	-0.00358
	(A2 * !B1 * Y)	0.00309	0.00310	0.00308
	(A2 * !B1 * Y)	-0.00355	-0.00362	-0.00358
	(A2 * !A3 * B1 * !Y)	0.00310	0.00311	0.00308
	(A2 * !A3 * B1 * !Y)	-0.00354	-0.00361	-0.00358
	(!A2 * A3 * B1 * !Y)	0.00311	0.00310	0.00308
	(!A2 * A3 * B1 * !Y)	-0.00336	-0.00344	-0.00339
	(!A2 * A3 * !B1 * Y)	0.00310	0.00309	0.00308
	(!A2 * A3 * !B1 * Y)	-0.00337	-0.00345	-0.00340
	(!A2 * !A3 * !B1 * Y)	0.00280	0.00283	0.00281
	(!A2 * !A3 * !B1 * Y)	-0.00372	-0.00375	-0.00373

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * A3 * B1 * !Y)**	-0.00080	-0.00079	-0.00079
	(A2 * A3 * B1 * !Y)	0.00089	0.00088	0.00088
	(A2 * !B1 * Y)	-0.00080	-0.00079	-0.00079
	(A2 * !B1 * Y)	0.00089	0.00088	0.00088
	(A2 * !A3 * B1 * !Y)	-0.00080	-0.00079	-0.00079
	(A2 * !A3 * B1 * !Y)	0.00089	0.00088	0.00088
	(!A2 * A3 * B1 * !Y)	-0.00079	-0.00079	-0.00079
	(!A2 * A3 * B1 * !Y)	0.00083	0.00084	0.00083
	(!A2 * A3 * !B1 * Y)	-0.00079	-0.00079	-0.00079
	(!A2 * A3 * !B1 * Y)	0.00083	0.00084	0.00083
	(!A2 * !A3 * !B1 * Y)	-0.00073	-0.00074	-0.00074
	(!A2 * !A3 * !B1 * Y)	0.00091	0.00091	0.00090

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00161	-0.00161	-0.00160
	(A2 * A3 * B1 * !Y)	0.00182	0.00182	0.00181
	(A2 * !B1 * Y)	-0.00160	-0.00160	-0.00160
	(A2 * !B1 * Y)	0.00182	0.00183	0.00181
	(A2 * !A3 * B1 * !Y)	-0.00161	-0.00161	-0.00160
	(A2 * !A3 * B1 * !Y)	0.00182	0.00182	0.00181
	(!A2 * A3 * B1 * !Y)	-0.00161	-0.00161	-0.00160
	(!A2 * A3 * B1 * !Y)	0.00172	0.00172	0.00171
	(!A2 * A3 * !B1 * Y)	-0.00160	-0.00160	-0.00160
	(!A2 * A3 * !B1 * Y)	0.00173	0.00173	0.00172
	(!A2 * !A3 * !B1 * Y)	-0.00142	-0.00147	-0.00146
	(!A2 * !A3 * !B1 * Y)	0.00188	0.00192	0.00189
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00309	-0.00310	-0.00308
	(A2 * A3 * B1 * !Y)	0.00360	0.00361	0.00358
	(A2 * !B1 * Y)	-0.00308	-0.00309	-0.00307
	(A2 * !B1 * Y)	0.00361	0.00362	0.00358
	(A2 * !A3 * B1 * !Y)	-0.00306	-0.00310	-0.00308
	(A2 * !A3 * B1 * !Y)	0.00355	0.00361	0.00358
	(!A2 * A3 * B1 * !Y)	-0.00309	-0.00310	-0.00308
	(!A2 * A3 * B1 * !Y)	0.00341	0.00344	0.00339
	(!A2 * A3 * !B1 * Y)	-0.00308	-0.00309	-0.00307
	(!A2 * A3 * !B1 * Y)	0.00343	0.00345	0.00340
	(!A2 * !A3 * !B1 * Y)	-0.00276	-0.00283	-0.00281
	(!A2 * !A3 * !B1 * Y)	0.00376	0.00377	0.00374

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31ai_1	**(A1 * A3 * B1 * !Y)**	0.00091	0.00092	0.00091
	(A1 * A3 * B1 * !Y)	-0.00072	-0.00072	-0.00071
	(A1 * A3 * !B1 * Y)	0.00079	0.00079	0.00079
	(A1 * A3 * !B1 * Y)	-0.00089	-0.00089	-0.00088
	(A1 * !A3 * B1 * !Y)	0.00091	0.00092	0.00091
	(A1 * !A3 * B1 * !Y)	-0.00069	-0.00070	-0.00070
	(A1 * !A3 * !B1 * Y)	0.00079	0.00080	0.00079
	(A1 * !A3 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * A3 * B1 * !Y)	0.00091	0.00091	0.00091
	(!A1 * A3 * B1 * !Y)	-0.00090	-0.00091	-0.00091
	(!A1 * A3 * !B1 * Y)	0.00079	0.00078	0.00079
	(!A1 * A3 * !B1 * Y)	-0.00103	-0.00104	-0.00104
	(!A1 * !A3 * !B1 * Y)	0.00072	0.00072	0.00072
	(!A1 * !A3 * !B1 * Y)	-0.00106	-0.00107	-0.00107
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00158	0.00159	0.00158
	(A1 * A3 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(A1 * A3 * !B1 * Y)	0.00156	0.00156	0.00155
	(A1 * A3 * !B1 * Y)	-0.00151	-0.00152	-0.00151
	(A1 * !A3 * B1 * !Y)	0.00158	0.00159	0.00158
	(A1 * !A3 * B1 * !Y)	-0.00134	-0.00135	-0.00135
	(A1 * !A3 * !B1 * Y)	0.00156	0.00157	0.00155
	(A1 * !A3 * !B1 * Y)	-0.00178	-0.00180	-0.00179
	(!A1 * A3 * B1 * !Y)	0.00158	0.00160	0.00157
	(!A1 * A3 * B1 * !Y)	-0.00177	-0.00180	-0.00179
	(!A1 * A3 * !B1 * Y)	0.00155	0.00157	0.00155
	(!A1 * A3 * !B1 * Y)	-0.00180	-0.00183	-0.00182
	(!A1 * !A3 * !B1 * Y)	0.00142	0.00142	0.00142
	(!A1 * !A3 * !B1 * Y)	-0.00188	-0.00188	-0.00188

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00313	0.00315	0.00313
	(A1 * A3 * B1 * !Y)	-0.00278	-0.00278	-0.00277
	(A1 * A3 * !B1 * Y)	0.00309	0.00310	0.00306
	(A1 * A3 * !B1 * Y)	-0.00301	-0.00303	-0.00301
	(A1 * !A3 * B1 * !Y)	0.00314	0.00315	0.00312
	(A1 * !A3 * B1 * !Y)	-0.00269	-0.00269	-0.00269
	(A1 * !A3 * !B1 * Y)	0.00305	0.00310	0.00306
	(A1 * !A3 * !B1 * Y)	-0.00355	-0.00361	-0.00359
	(!A1 * A3 * B1 * !Y)	0.00312	0.00312	0.00312
	(!A1 * A3 * B1 * !Y)	-0.00351	-0.00359	-0.00356
	(!A1 * A3 * !B1 * Y)	0.00305	0.00306	0.00306
	(!A1 * A3 * !B1 * Y)	-0.00359	-0.00366	-0.00363
	(!A1 * !A3 * !B1 * Y)	0.00280	0.00281	0.00280
	(!A1 * !A3 * !B1 * Y)	-0.00376	-0.00377	-0.00376

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31ai_1	**(A1 * A3 * B1 * !Y)**	-0.00091	-0.00091	-0.00091
	(A1 * A3 * B1 * !Y)	0.00072	0.00072	0.00071
	(A1 * A3 * !B1 * Y)	-0.00079	-0.00079	-0.00078
	(A1 * A3 * !B1 * Y)	0.00089	0.00089	0.00088
	(A1 * !A3 * B1 * !Y)	-0.00091	-0.00091	-0.00091
	(A1 * !A3 * B1 * !Y)	0.00071	0.00071	0.00071
	(A1 * !A3 * !B1 * Y)	-0.00079	-0.00079	-0.00078
	(A1 * !A3 * !B1 * Y)	0.00104	0.00104	0.00103
	(!A1 * A3 * B1 * !Y)	-0.00091	-0.00091	-0.00091
	(!A1 * A3 * B1 * !Y)	0.00091	0.00091	0.00091
	(!A1 * A3 * !B1 * Y)	-0.00079	-0.00078	-0.00078
	(!A1 * A3 * !B1 * Y)	0.00104	0.00104	0.00104
	(!A1 * !A3 * !B1 * Y)	-0.00070	-0.00072	-0.00072
	(!A1 * !A3 * !B1 * Y)	0.00107	0.00107	0.00107
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00158	-0.00158	-0.00158
	(A1 * A3 * B1 * !Y)	0.00139	0.00140	0.00139
	(A1 * A3 * !B1 * Y)	-0.00154	-0.00155	-0.00154
	(A1 * A3 * !B1 * Y)	0.00151	0.00152	0.00151
	(A1 * !A3 * B1 * !Y)	-0.00158	-0.00158	-0.00157
	(A1 * !A3 * B1 * !Y)	0.00137	0.00137	0.00137
	(A1 * !A3 * !B1 * Y)	-0.00154	-0.00155	-0.00154
	(A1 * !A3 * !B1 * Y)	0.00178	0.00180	0.00179
	(!A1 * A3 * B1 * !Y)	-0.00157	-0.00158	-0.00157
	(!A1 * A3 * B1 * !Y)	0.00178	0.00180	0.00179
	(!A1 * A3 * !B1 * Y)	-0.00154	-0.00155	-0.00154
	(!A1 * A3 * !B1 * Y)	0.00181	0.00183	0.00182
	(!A1 * !A3 * !B1 * Y)	-0.00139	-0.00142	-0.00142
	(!A1 * !A3 * !B1 * Y)	0.00189	0.00189	0.00188

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00313	-0.00313	-0.00312
	(A1 * A3 * B1 * !Y)	0.00278	0.00278	0.00277
	(A1 * A3 * !B1 * Y)	-0.00305	-0.00306	-0.00305
	(A1 * A3 * !B1 * Y)	0.00301	0.00303	0.00301
	(A1 * !A3 * B1 * !Y)	-0.00312	-0.00313	-0.00311
	(A1 * !A3 * B1 * !Y)	0.00274	0.00274	0.00273
	(A1 * !A3 * !B1 * Y)	-0.00305	-0.00307	-0.00305
	(A1 * !A3 * !B1 * Y)	0.00359	0.00361	0.00359
	(!A1 * A3 * B1 * !Y)	-0.00312	-0.00312	-0.00312
	(!A1 * A3 * B1 * !Y)	0.00356	0.00359	0.00356
	(!A1 * A3 * !B1 * Y)	-0.00305	-0.00306	-0.00305
	(!A1 * A3 * !B1 * Y)	0.00363	0.00366	0.00363
	(!A1 * !A3 * !B1 * Y)	-0.00274	-0.00281	-0.00280
	(!A1 * !A3 * !B1 * Y)	0.00377	0.00379	0.00376

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00099	0.00099	0.00098
	(A2 * B1 * !Y)	-0.00060	-0.00060	-0.00059
	(A2 * !B1 * Y)	0.00075	0.00076	0.00075
	(A2 * !B1 * Y)	-0.00101	-0.00103	-0.00102
	(A1 * !A2 * B1 * !Y)	0.00099	0.00099	0.00098
	(A1 * !A2 * B1 * !Y)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * !B1 * Y)	0.00076	0.00075	0.00075
	(A1 * !A2 * !B1 * Y)	-0.00097	-0.00098	-0.00097
	(!A1 * !A2 * !B1 * Y)	0.00070	0.00070	0.00069
	(!A1 * !A2 * !B1 * Y)	-0.00105	-0.00105	-0.00105

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00184	0.00184	0.00183
	(A2 * B1 * !Y)	-0.00119	-0.00119	-0.00118
	(A2 * !B1 * Y)	0.00151	0.00153	0.00151
	(A2 * !B1 * Y)	-0.00188	-0.00191	-0.00190
	(A1 * !A2 * B1 * !Y)	0.00184	0.00184	0.00183
	(A1 * !A2 * B1 * !Y)	-0.00119	-0.00118	-0.00118
	(A1 * !A2 * !B1 * Y)	0.00150	0.00151	0.00151
	(A1 * !A2 * !B1 * Y)	-0.00178	-0.00181	-0.00180
	(!A1 * !A2 * !B1 * Y)	0.00139	0.00139	0.00139
	(!A1 * !A2 * !B1 * Y)	-0.00196	-0.00196	-0.00196
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00361	0.00360	0.00359
	(A2 * B1 * !Y)	-0.00237	-0.00236	-0.00235
	(A2 * !B1 * Y)	0.00296	0.00295	0.00296
	(A2 * !B1 * Y)	-0.00373	-0.00374	-0.00376
	(A1 * !A2 * B1 * !Y)	0.00360	0.00362	0.00359
	(A1 * !A2 * B1 * !Y)	-0.00236	-0.00237	-0.00234
	(A1 * !A2 * !B1 * Y)	0.00295	0.00297	0.00295
	(A1 * !A2 * !B1 * Y)	-0.00352	-0.00357	-0.00353
	(!A1 * !A2 * !B1 * Y)	0.00271	0.00276	0.00273
	(!A1 * !A2 * !B1 * Y)	-0.00388	-0.00388	-0.00389

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00097	-0.00098	-0.00098
	(A2 * B1 * !Y)	0.00061	0.00061	0.00060
	(A2 * !B1 * Y)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * Y)	0.00102	0.00103	0.00102
	(A1 * !A2 * B1 * !Y)	-0.00090	-0.00090	-0.00097
	(A1 * !A2 * B1 * !Y)	0.00066	0.00066	0.00060
	(A1 * !A2 * !B1 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * !B1 * Y)	0.00097	0.00098	0.00097
	(!A1 * !A2 * !B1 * Y)	-0.00068	-0.00070	-0.00069
	(!A1 * !A2 * !B1 * Y)	0.00105	0.00106	0.00105
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00182	-0.00182	-0.00183
	(A2 * B1 * !Y)	0.00122	0.00121	0.00119
	(A2 * !B1 * Y)	-0.00151	-0.00151	-0.00150
	(A2 * !B1 * Y)	0.00191	0.00191	0.00190
	(A1 * !A2 * B1 * !Y)	-0.00162	-0.00164	-0.00180
	(A1 * !A2 * B1 * !Y)	0.00133	0.00133	0.00121
	(A1 * !A2 * !B1 * Y)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * !B1 * Y)	0.00180	0.00181	0.00180
	(!A1 * !A2 * !B1 * Y)	-0.00136	-0.00139	-0.00139
	(!A1 * !A2 * !B1 * Y)	0.00196	0.00198	0.00196
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00353	-0.00356	-0.00359
	(A2 * B1 * !Y)	0.00240	0.00241	0.00236
	(A2 * !B1 * Y)	-0.00294	-0.00294	-0.00295
	(A2 * !B1 * Y)	0.00374	0.00374	0.00376
	(A1 * !A2 * B1 * !Y)	-0.00316	-0.00320	-0.00352
	(A1 * !A2 * B1 * !Y)	0.00266	0.00265	0.00240
	(A1 * !A2 * !B1 * Y)	-0.00295	-0.00297	-0.00295
	(A1 * !A2 * !B1 * Y)	0.00355	0.00357	0.00353
	(!A1 * !A2 * !B1 * Y)	-0.00267	-0.00275	-0.00273
	(!A1 * !A2 * !B1 * Y)	0.00390	0.00388	0.00389

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	(!A1 * !A2 * !A3 * Y)	0.00036	0.00036	0.00033
	(!A1 * !A2 * !A3 * Y)	-0.00106	-0.00106	-0.00111
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00071	0.00071	0.00065
	(!A1 * !A2 * !A3 * Y)	-0.00210	-0.00211	-0.00221
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00128	0.00127	0.00117
	(!A1 * !A2 * !A3 * Y)	-0.00244	-0.00246	-0.00265

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	(!A1 * !A2 * !A3 * Y)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * !A3 * Y)	0.00111	0.00112	0.00111
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00063	-0.00063	-0.00062
	(!A1 * !A2 * !A3 * Y)	0.00222	0.00223	0.00222
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00114	-0.00114	-0.00113
	(!A1 * !A2 * !A3 * Y)	0.00267	0.00267	0.00266

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A1	A2	A3	B1	X
0	0	0	x	0
0	x	1	0	0
0	x	1	1	1
x	1	x	0	0
x	1	x	1	1
1	x	x	0	0
1	x	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31a_1	11.18880
sky130_fd_sc_hs__o31a_2	12.78720
sky130_fd_sc_hs__o31a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__o31a_1	0.00231	0.00226	0.00228	0.00213	0.18607
sky130_fd_sc_hs__o31a_2	0.00246	0.00238	0.00243	0.00258	0.35465
sky130_fd_sc_hs__o31a_4	0.00411	0.00443	0.00446	0.00449	0.72039

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.00010	0.00014
sky130_fd_sc_hs__o31a_2	0.00000	0.00014	0.00019
sky130_fd_sc_hs__o31a_4	0.00000	0.00027	0.00037

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (RR)	0.29424	1.69571	9.94438
	A2->X (RR)	0.29071	1.68708	9.89494
	A3->X (RR)	0.27636	1.66461	9.81618
	B1->X (RR)	0.27865	1.66942	9.67454
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.28483	1.51746	9.98993
	A2->X (RR)	0.28320	1.51228	9.95524
	A3->X (RR)	0.26730	1.49369	9.89619
	B1->X (RR)	0.27070	1.50996	9.79643
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.29184	1.38032	10.03280
	A2->X (RR)	0.28360	1.36728	9.98275
	A3->X (RR)	0.27249	1.35268	9.92216
	B1->X (RR)	0.27599	1.37193	9.82262

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	1.66688	2.79986	8.96125
	A2->X (FF)	1.59358	2.69691	8.96579
	A3->X (FF)	1.42819	2.42154	8.23739
	B1->X (FF)	0.38432	1.41408	7.16819
sky130_fd_sc_hs__o31a_2	A1->X (FF)	2.21910	3.40374	9.68755
	A2->X (FF)	2.14650	3.29830	9.70570
	A3->X (FF)	1.98342	3.01838	8.98562
	B1->X (FF)	0.45400	1.48844	7.51333
sky130_fd_sc_hs__o31a_4	A1->X (FF)	2.08111	3.22385	9.59179
	A2->X (FF)	2.02150	3.12937	9.58771
	A3->X (FF)	1.81592	2.79441	8.82570
	B1->X (FF)	0.41787	1.42584	7.47792

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00557	0.00555	0.00549
	A1	0.00248	0.00245	0.00240
	A2	0.00504	0.00505	0.00499
	A2	0.00223	0.00224	0.00219
	A3	0.00447	0.00447	0.00441
	A3	0.00190	0.00189	0.00183
	B1	0.00497	0.00493	0.00487
	B1	0.00259	0.00256	0.00251
sky130_fd_sc_hs__o31a_2	A1	0.00722	0.00727	0.00726
	A1	0.00391	0.00396	0.00395
	A2	0.00666	0.00675	0.00675
	A2	0.00366	0.00376	0.00376
	A3	0.00612	0.00621	0.00619
	A3	0.00332	0.00341	0.00339
	B1	0.00662	0.00664	0.00660
	B1	0.00388	0.00391	0.00387
sky130_fd_sc_hs__o31a_4	A1	0.01345	0.01362	0.01370
	A1	0.00759	0.00776	0.00786
	A2	0.01267	0.01286	0.01290
	A2	0.00702	0.00721	0.00726
	A3	0.01110	0.01128	0.01133
	A3	0.00608	0.00626	0.00632
	B1	0.01238	0.01245	0.01248
	B1	0.00757	0.00765	0.00770

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00215	0.00214	0.00212
	A1	0.00521	0.00520	0.00516
	A2	0.00215	0.00217	0.00213
	A2	0.00489	0.00491	0.00487
	A3	0.00214	0.00215	0.00212
	A3	0.00464	0.00464	0.00459
	B1	0.00174	0.00167	0.00171
	B1	0.00415	0.00408	0.00405
sky130_fd_sc_hs__o31a_2	A1	0.00338	0.00347	0.00273
	A1	0.00664	0.00673	0.00673
	A2	0.00339	0.00350	0.00279
	A2	0.00632	0.00643	0.00643
	A3	0.00337	0.00345	0.00347
	A3	0.00607	0.00616	0.00615
	B1	0.00285	0.00286	0.00317
	B1	0.00564	0.00566	0.00564
sky130_fd_sc_hs__o31a_4	A1	0.00661	0.00690	0.00708
	A1	0.01245	0.01273	0.01287
	A2	0.00637	0.00665	0.00681
	A2	0.01193	0.01221	0.01232
	A3	0.00659	0.00679	0.00690
	A3	0.01142	0.01164	0.01170
	B1	0.00575	0.00574	0.00666
	B1	0.01069	0.01074	0.01075

Passive power(pJ) for A1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__o31a_1	**(A2 * A3 * B1 * X)**	0.00076	0.00077	0.00076
	(A2 * A3 * B1 * X)	-0.00077	-0.00079	-0.00078
	(A2 * !B1 * !X)	0.00065	0.00065	0.00064
	(A2 * !B1 * !X)	-0.00089	-0.00091	-0.00090
	(A2 * !A3 * B1 * X)	0.00076	0.00077	0.00076
	(A2 * !A3 * B1 * X)	-0.00077	-0.00079	-0.00078
	(!A2 * A3 * B1 * X)	0.00076	0.00076	0.00076
	(!A2 * A3 * B1 * X)	-0.00073	-0.00075	-0.00074
	(!A2 * A3 * !B1 * !X)	0.00065	0.00065	0.00064
	(!A2 * A3 * !B1 * !X)	-0.00085	-0.00087	-0.00086
	(!A2 * !A3 * !B1 * !X)	0.00060	0.00060	0.00060
	(!A2 * !A3 * !B1 * !X)	-0.00092	-0.00092	-0.00092
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00085	0.00085	0.00084
	(A2 * A3 * B1 * X)	-0.00081	-0.00083	-0.00082
	(A2 * !B1 * !X)	0.00078	0.00079	0.00078
	(A2 * !B1 * !X)	-0.00088	-0.00089	-0.00088
	(A2 * !A3 * B1 * X)	0.00085	0.00085	0.00084
	(A2 * !A3 * B1 * X)	-0.00081	-0.00083	-0.00082
	(!A2 * A3 * B1 * X)	0.00085	0.00085	0.00084
	(!A2 * A3 * B1 * X)	-0.00077	-0.00079	-0.00078
	(!A2 * A3 * !B1 * !X)	0.00078	0.00078	0.00078
	(!A2 * A3 * !B1 * !X)	-0.00084	-0.00085	-0.00085
	(!A2 * !A3 * !B1 * !X)	0.00073	0.00073	0.00073
	(!A2 * !A3 * !B1 * !X)	-0.00091	-0.00091	-0.00090

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00127	0.00127	0.00126
	(A2 * A3 * B1 * X)	-0.00163	-0.00165	-0.00164
	(A2 * !B1 * !X)	0.00127	0.00127	0.00126
	(A2 * !B1 * !X)	-0.00163	-0.00165	-0.00164
	(A2 * !A3 * B1 * X)	0.00127	0.00127	0.00126
	(A2 * !A3 * B1 * X)	-0.00162	-0.00165	-0.00164
	(!A2 * A3 * B1 * X)	0.00127	0.00127	0.00126
	(!A2 * A3 * B1 * X)	-0.00153	-0.00156	-0.00155
	(!A2 * A3 * !B1 * !X)	0.00127	0.00127	0.00126
	(!A2 * A3 * !B1 * !X)	-0.00153	-0.00156	-0.00155
	(!A2 * !A3 * !B1 * !X)	0.00117	0.00117	0.00116
	(!A2 * !A3 * !B1 * !X)	-0.00170	-0.00171	-0.00171

Passive power(pJ) for A1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * A3 * B1 * X)**	-0.00076	-0.00076	-0.00076
	(A2 * A3 * B1 * X)	0.00079	0.00079	0.00078
	(A2 * !B1 * !X)	-0.00065	-0.00064	-0.00064
	(A2 * !B1 * !X)	0.00091	0.00091	0.00090
	(A2 * !A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(A2 * !A3 * B1 * X)	0.00079	0.00079	0.00078
	(!A2 * A3 * B1 * X)	-0.00076	-0.00076	-0.00076
	(!A2 * A3 * B1 * X)	0.00074	0.00075	0.00074
	(!A2 * A3 * !B1 * !X)	-0.00064	-0.00064	-0.00064
	(!A2 * A3 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A2 * !A3 * !B1 * !X)	-0.00058	-0.00060	-0.00060
	(!A2 * !A3 * !B1 * !X)	0.00093	0.00093	0.00092

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00085	-0.00084	-0.00084
	(A2 * A3 * B1 * X)	0.00083	0.00083	0.00082
	(A2 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A2 * !B1 * !X)	0.00089	0.00089	0.00088
	(A2 * !A3 * B1 * X)	-0.00085	-0.00084	-0.00084
	(A2 * !A3 * B1 * X)	0.00083	0.00083	0.00082
	(!A2 * A3 * B1 * X)	-0.00084	-0.00084	-0.00084
	(!A2 * A3 * B1 * X)	0.00078	0.00079	0.00078
	(!A2 * A3 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(!A2 * A3 * !B1 * !X)	0.00085	0.00085	0.00085
	(!A2 * !A3 * !B1 * !X)	-0.00072	-0.00073	-0.00073
	(!A2 * !A3 * !B1 * !X)	0.00091	0.00091	0.00091
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00126	-0.00126	-0.00126
	(A2 * A3 * B1 * X)	0.00165	0.00165	0.00164
	(A2 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(A2 * !B1 * !X)	0.00166	0.00165	0.00164
	(A2 * !A3 * B1 * X)	-0.00126	-0.00126	-0.00126
	(A2 * !A3 * B1 * X)	0.00165	0.00165	0.00164
	(!A2 * A3 * B1 * X)	-0.00126	-0.00126	-0.00126
	(!A2 * A3 * B1 * X)	0.00155	0.00156	0.00155
	(!A2 * A3 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(!A2 * A3 * !B1 * !X)	0.00156	0.00156	0.00155
	(!A2 * !A3 * !B1 * !X)	-0.00113	-0.00117	-0.00116
	(!A2 * !A3 * !B1 * !X)	0.00170	0.00172	0.00171

Passive power(pJ) for A2 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31a_1	**(A1 * A3 * B1 * X)**	0.00071	0.00071	0.00070
	(A1 * A3 * B1 * X)	-0.00060	-0.00060	-0.00059
	(A1 * A3 * !B1 * !X)	0.00067	0.00067	0.00066
	(A1 * A3 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * B1 * X)	0.00071	0.00071	0.00070
	(A1 * !A3 * B1 * X)	-0.00058	-0.00058	-0.00058
	(A1 * !A3 * !B1 * !X)	0.00067	0.00067	0.00067
	(A1 * !A3 * !B1 * !X)	-0.00079	-0.00080	-0.00080
	(!A1 * A3 * B1 * X)	0.00070	0.00070	0.00070
	(!A1 * A3 * B1 * X)	-0.00076	-0.00077	-0.00077
	(!A1 * A3 * !B1 * !X)	0.00067	0.00066	0.00067
	(!A1 * A3 * !B1 * !X)	-0.00080	-0.00081	-0.00080
	(!A1 * !A3 * !B1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A3 * !B1 * !X)	-0.00082	-0.00083	-0.00083
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00078	0.00079	0.00078
	(A1 * A3 * B1 * X)	-0.00061	-0.00061	-0.00061
	(A1 * A3 * !B1 * !X)	0.00075	0.00075	0.00075
	(A1 * A3 * !B1 * !X)	-0.00068	-0.00068	-0.00068
	(A1 * !A3 * B1 * X)	0.00079	0.00079	0.00078
	(A1 * !A3 * B1 * X)	-0.00060	-0.00059	-0.00059
	(A1 * !A3 * !B1 * !X)	0.00075	0.00076	0.00075
	(A1 * !A3 * !B1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * A3 * B1 * X)	0.00078	0.00078	0.00078
	(!A1 * A3 * B1 * X)	-0.00077	-0.00079	-0.00078
	(!A1 * A3 * !B1 * !X)	0.00075	0.00074	0.00075
	(!A1 * A3 * !B1 * !X)	-0.00081	-0.00082	-0.00082
	(!A1 * !A3 * !B1 * !X)	0.00069	0.00070	0.00070
	(!A1 * !A3 * !B1 * !X)	-0.00083	-0.00084	-0.00084

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00153	0.00153	0.00152
	(A1 * A3 * B1 * X)	-0.00126	-0.00126	-0.00126
	(A1 * A3 * !B1 * !X)	0.00151	0.00152	0.00152
	(A1 * A3 * !B1 * !X)	-0.00134	-0.00135	-0.00134
	(A1 * !A3 * B1 * X)	0.00152	0.00152	0.00152
	(A1 * !A3 * B1 * X)	-0.00122	-0.00122	-0.00122
	(A1 * !A3 * !B1 * !X)	0.00152	0.00152	0.00151
	(A1 * !A3 * !B1 * !X)	-0.00162	-0.00164	-0.00163
	(!A1 * A3 * B1 * X)	0.00154	0.00153	0.00152
	(!A1 * A3 * B1 * X)	-0.00158	-0.00160	-0.00159
	(!A1 * A3 * !B1 * !X)	0.00153	0.00152	0.00151
	(!A1 * A3 * !B1 * !X)	-0.00159	-0.00161	-0.00160
	(!A1 * !A3 * !B1 * !X)	0.00142	0.00142	0.00142
	(!A1 * !A3 * !B1 * !X)	-0.00169	-0.00169	-0.00169

Passive power(pJ) for A2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31a_1	**(A1 * A3 * B1 * X)**	-0.00070	-0.00070	-0.00070
	(A1 * A3 * B1 * X)	0.00060	0.00060	0.00059
	(A1 * A3 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(A1 * A3 * !B1 * !X)	0.00067	0.00067	0.00067
	(A1 * !A3 * B1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A3 * B1 * X)	0.00059	0.00059	0.00058
	(A1 * !A3 * !B1 * !X)	-0.00067	-0.00067	-0.00066
	(A1 * !A3 * !B1 * !X)	0.00080	0.00080	0.00080
	(!A1 * A3 * B1 * X)	-0.00070	-0.00070	-0.00070
	(!A1 * A3 * B1 * X)	0.00077	0.00077	0.00077
	(!A1 * A3 * !B1 * !X)	-0.00067	-0.00066	-0.00066
	(!A1 * A3 * !B1 * !X)	0.00081	0.00081	0.00080
	(!A1 * !A3 * !B1 * !X)	-0.00060	-0.00062	-0.00061
	(!A1 * !A3 * !B1 * !X)	0.00082	0.00083	0.00083
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00078	-0.00078	-0.00078
	(A1 * A3 * B1 * X)	0.00061	0.00061	0.00061
	(A1 * A3 * !B1 * !X)	-0.00074	-0.00075	-0.00075
	(A1 * A3 * !B1 * !X)	0.00068	0.00068	0.00068
	(A1 * !A3 * B1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * !A3 * B1 * X)	0.00060	0.00060	0.00060
	(A1 * !A3 * !B1 * !X)	-0.00075	-0.00075	-0.00075
	(A1 * !A3 * !B1 * !X)	0.00082	0.00081	0.00081
	(!A1 * A3 * B1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * A3 * B1 * X)	0.00079	0.00079	0.00078
	(!A1 * A3 * !B1 * !X)	-0.00075	-0.00074	-0.00075
	(!A1 * A3 * !B1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !A3 * !B1 * !X)	-0.00068	-0.00070	-0.00070
	(!A1 * !A3 * !B1 * !X)	0.00083	0.00084	0.00084

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00152	-0.00152	-0.00152
	(A1 * A3 * B1 * X)	0.00126	0.00126	0.00126
	(A1 * A3 * !B1 * !X)	-0.00151	-0.00152	-0.00151
	(A1 * A3 * !B1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A3 * B1 * X)	-0.00152	-0.00152	-0.00152
	(A1 * !A3 * B1 * X)	0.00125	0.00125	0.00124
	(A1 * !A3 * !B1 * !X)	-0.00151	-0.00152	-0.00151
	(A1 * !A3 * !B1 * !X)	0.00163	0.00164	0.00163
	(!A1 * A3 * B1 * X)	-0.00152	-0.00153	-0.00152
	(!A1 * A3 * B1 * X)	0.00159	0.00160	0.00159
	(!A1 * A3 * !B1 * !X)	-0.00151	-0.00152	-0.00151
	(!A1 * A3 * !B1 * !X)	0.00160	0.00161	0.00160
	(!A1 * !A3 * !B1 * !X)	-0.00139	-0.00142	-0.00142
	(!A1 * !A3 * !B1 * !X)	0.00169	0.00170	0.00169

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00077	0.00077	0.00076
	(A2 * B1 * X)	-0.00054	-0.00054	-0.00053
	(A2 * !B1 * !X)	0.00066	0.00067	0.00066
	(A2 * !B1 * !X)	-0.00081	-0.00082	-0.00082
	(A1 * !A2 * B1 * X)	0.00077	0.00077	0.00076
	(A1 * !A2 * B1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * !A2 * !B1 * !X)	0.00066	0.00067	0.00066
	(A1 * !A2 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A2 * !B1 * !X)	0.00061	0.00061	0.00060
	(!A1 * !A2 * !B1 * !X)	-0.00084	-0.00085	-0.00084

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00090	0.00090	0.00089
	(A2 * B1 * X)	-0.00054	-0.00054	-0.00053
	(A2 * !B1 * !X)	0.00078	0.00078	0.00077
	(A2 * !B1 * !X)	-0.00084	-0.00084	-0.00083
	(A1 * !A2 * B1 * X)	0.00090	0.00090	0.00089
	(A1 * !A2 * B1 * X)	-0.00054	-0.00054	-0.00053
	(A1 * !A2 * !B1 * !X)	0.00078	0.00078	0.00077
	(A1 * !A2 * !B1 * !X)	-0.00078	-0.00079	-0.00079
	(!A1 * !A2 * !B1 * !X)	0.00072	0.00073	0.00072
	(!A1 * !A2 * !B1 * !X)	-0.00085	-0.00086	-0.00085
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00153	0.00153	0.00152
	(A2 * B1 * X)	-0.00118	-0.00118	-0.00117
	(A2 * !B1 * !X)	0.00135	0.00137	0.00136
	(A2 * !B1 * !X)	-0.00166	-0.00169	-0.00169
	(A1 * !A2 * B1 * X)	0.00153	0.00153	0.00152
	(A1 * !A2 * B1 * X)	-0.00118	-0.00118	-0.00117
	(A1 * !A2 * !B1 * !X)	0.00136	0.00137	0.00136
	(A1 * !A2 * !B1 * !X)	-0.00159	-0.00160	-0.00160
	(!A1 * !A2 * !B1 * !X)	0.00124	0.00125	0.00124
	(!A1 * !A2 * !B1 * !X)	-0.00178	-0.00179	-0.00178

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00075	-0.00075	-0.00076
	(A2 * B1 * X)	0.00055	0.00055	0.00054
	(A2 * !B1 * !X)	-0.00066	-0.00066	-0.00066
	(A2 * !B1 * !X)	0.00082	0.00082	0.00082
	(A1 * !A2 * B1 * X)	-0.00068	-0.00069	-0.00075
	(A1 * !A2 * B1 * X)	0.00059	0.00059	0.00054
	(A1 * !A2 * !B1 * !X)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * !B1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A2 * !B1 * !X)	-0.00059	-0.00061	-0.00060
	(!A1 * !A2 * !B1 * !X)	0.00084	0.00085	0.00084
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00088	-0.00088	-0.00089
	(A2 * B1 * X)	0.00056	0.00055	0.00054
	(A2 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(A2 * !B1 * !X)	0.00084	0.00084	0.00083
	(A1 * !A2 * B1 * X)	-0.00081	-0.00082	-0.00088
	(A1 * !A2 * B1 * X)	0.00059	0.00059	0.00054
	(A1 * !A2 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !A2 * !B1 * !X)	-0.00070	-0.00073	-0.00072
	(!A1 * !A2 * !B1 * !X)	0.00085	0.00086	0.00086
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00151	-0.00151	-0.00152
	(A2 * B1 * X)	0.00120	0.00119	0.00118
	(A2 * !B1 * !X)	-0.00135	-0.00136	-0.00136
	(A2 * !B1 * !X)	0.00169	0.00169	0.00169
	(A1 * !A2 * B1 * X)	-0.00133	-0.00134	-0.00149
	(A1 * !A2 * B1 * X)	0.00130	0.00130	0.00119
	(A1 * !A2 * !B1 * !X)	-0.00136	-0.00136	-0.00135
	(A1 * !A2 * !B1 * !X)	0.00160	0.00160	0.00160
	(!A1 * !A2 * !B1 * !X)	-0.00120	-0.00125	-0.00124
	(!A1 * !A2 * !B1 * !X)	0.00178	0.00179	0.00179

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	(!A1 * !A2 * !A3 * !X)	0.00030	0.00030	0.00028
	(!A1 * !A2 * !A3 * !X)	-0.00084	-0.00084	-0.00088
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00039	0.00039	0.00036
	(!A1 * !A2 * !A3 * !X)	-0.00106	-0.00107	-0.00111
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00058	0.00057	0.00052
	(!A1 * !A2 * !A3 * !X)	-0.00199	-0.00199	-0.00208

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	(!A1 * !A2 * !A3 * !X)	-0.00027	-0.00027	-0.00027
	(!A1 * !A2 * !A3 * !X)	0.00089	0.00089	0.00088
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00035	-0.00035	-0.00034
	(!A1 * !A2 * !A3 * !X)	0.00112	0.00112	0.00111
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00051	-0.00050	-0.00050
	(!A1 * !A2 * !A3 * !X)	0.00211	0.00210	0.00209

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	B2	Y
0	0	0	x	x	1
0	x	1	0	0	1
0	x	1	x	1	0
0	x	1	1	x	0
x	1	x	0	0	1
x	1	x	x	1	0
x	1	x	1	x	0
1	x	x	0	0	1
1	x	x	x	1	0
1	x	x	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32ai_1	11.18880
sky130_fd_sc_hs__o32ai_2	20.77920
sky130_fd_sc_hs__o32ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__o32ai_1	0.00233	0.00259	0.00255	0.00253	0.00266	0.04461
sky130_fd_sc_hs__o32ai_2	0.00489	0.00459	0.00511	0.00482	0.00496	0.08644
sky130_fd_sc_hs__o32ai_4	0.00921	0.00930	0.00961	0.00986	0.00967	0.16852

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.00008	0.00013
sky130_fd_sc_hs__o32ai_2	0.00000	0.00017	0.00027
sky130_fd_sc_hs__o32ai_4	0.00000	0.00034	0.00054

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (FR)	1.46701	3.78979	14.68260
	A2->Y (FR)	1.41717	3.70105	14.71120
	A3->Y (FR)	1.23072	3.40808	13.90390
	B1->Y (FR)	0.51670	2.25940	11.18470
	B2->Y (FR)	0.45525	2.08557	10.64840
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	1.43914	3.47685	14.75270
	A2->Y (FR)	1.36697	3.36550	14.73500
	A3->Y (FR)	1.16195	3.01265	13.93210
	B1->Y (FR)	0.48090	2.07897	11.32120
	B2->Y (FR)	0.38899	1.88028	10.73950
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	1.38944	3.18303	14.72620
	A2->Y (FR)	1.32822	3.08181	14.71660
	A3->Y (FR)	1.11826	2.73235	13.92050
	B1->Y (FR)	0.46005	1.89931	11.29090
	B2->Y (FR)	0.36746	1.71194	10.72690

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.10337	0.76673	4.19463
	A2->Y (RF)	0.10722	0.76883	4.20600
	A3->Y (RF)	0.10061	0.75534	4.17897
	B1->Y (RF)	0.08668	0.76348	4.19090
	B2->Y (RF)	0.08128	0.74960	4.15597
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.10154	0.73733	4.19135
	A2->Y (RF)	0.10544	0.74256	4.22638
	A3->Y (RF)	0.09893	0.72842	4.19756
	B1->Y (RF)	0.08274	0.73206	4.23111
	B2->Y (RF)	0.07758	0.71806	4.21788
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.11120	0.72357	4.23450
	A2->Y (RF)	0.10813	0.71427	4.20858
	A3->Y (RF)	0.09800	0.69559	4.16873
	B1->Y (RF)	0.09224	0.74221	4.44087
	B2->Y (RF)	0.08688	0.73506	4.48334

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00087	0.00080	0.00078
	A1	0.00467	0.00460	0.00457
	A2	0.00093	0.00085	0.00083
	A2	0.00447	0.00439	0.00435
	A3	0.00093	0.00083	0.00080
	A3	0.00410	0.00401	0.00397
	B1	-0.00001	-0.00008	-0.00009
	B1	0.00319	0.00311	0.00310
	B2	0.00002	-0.00006	-0.00007
	B2	0.00290	0.00281	0.00281
sky130_fd_sc_hs__o32ai_2	A1	0.00149	0.00133	0.00129
	A1	0.00951	0.00934	0.00928
	A2	0.00159	0.00142	0.00137
	A2	0.00873	0.00856	0.00834
	A3	0.00152	0.00129	0.00124
	A3	0.00821	0.00798	0.00793
	B1	-0.00019	-0.00031	-0.00032
	B1	0.00628	0.00614	0.00613
	B2	-0.00027	-0.00041	-0.00043
	B2	0.00568	0.00552	0.00553

sky130_fd_sc_hs__o32ai_4	**A1**	0.00302	0.00272	0.00265
	A1	0.01867	0.01835	0.01826
	A2	0.00305	0.00273	0.00264
	A2	0.01744	0.01711	0.01668
	A3	0.00302	0.00261	0.00253
	A3	0.01615	0.01570	0.01560
	B1	-0.00042	-0.00072	-0.00073
	B1	0.01269	0.01239	0.01237
	B2	-0.00048	-0.00077	-0.00081
	B2	0.01135	0.01103	0.01103

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.00497	0.00492	0.00479
	A1	0.00114	0.00108	0.00098
	A2	0.00442	0.00439	0.00429
	A2	0.00080	0.00077	0.00069
	A3	0.00377	0.00377	0.00371
	A3	0.00048	0.00047	0.00041
	B1	0.00424	0.00419	0.00407
	B1	0.00115	0.00109	0.00100
	B2	0.00365	0.00362	0.00351
	B2	0.00086	0.00082	0.00073

sky130_fd_sc_hs__o32ai_2	**A1**	0.01022	0.01012	0.00981
	A1	0.00217	0.00204	0.00182
	A2	0.00896	0.00890	0.00867
	A2	0.00166	0.00157	0.00140
	A3	0.00775	0.00774	0.00761
	A3	0.00083	0.00080	0.00069
	B1	0.00846	0.00833	0.00807
	B1	0.00226	0.00213	0.00192
	B2	0.00725	0.00720	0.00698
	B2	0.00151	0.00143	0.00127
sky130_fd_sc_hs__o32ai_4	**A1**	0.01988	0.01967	0.01909
	A1	0.00414	0.00389	0.00349
	A2	0.01763	0.01748	0.01706
	A2	0.00289	0.00273	0.00243
	A3	0.01501	0.01495	0.01473
	A3	0.00143	0.00134	0.00118
	B1	0.01685	0.01659	0.01609
	B1	0.00423	0.00396	0.00360
	B2	0.01430	0.01418	0.01378
	B2	0.00289	0.00271	0.00243

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A2 * A3 * B2 * !Y)**	0.00081	0.00081	0.00081
	(A2 * A3 * B2 * !Y)	-0.00088	-0.00090	-0.00089
	(A2 * A3 * B1 * !B2 * !Y)	0.00081	0.00081	0.00081
	(A2 * A3 * B1 * !B2 * !Y)	-0.00088	-0.00090	-0.00089
	(A2 * !B1 * !B2 * Y)	0.00081	0.00081	0.00081
	(A2 * !B1 * !B2 * Y)	-0.00088	-0.00090	-0.00089
	(A2 * !A3 * B2 * !Y)	0.00081	0.00081	0.00081
	(A2 * !A3 * B2 * !Y)	-0.00088	-0.00090	-0.00089
	(A2 * !A3 * B1 * !B2 * !Y)	0.00081	0.00081	0.00081
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00088	-0.00090	-0.00089
	(!A2 * A3 * B2 * !Y)	0.00081	0.00081	0.00081
	(!A2 * A3 * B2 * !Y)	-0.00084	-0.00085	-0.00085
	(!A2 * A3 * B1 * !B2 * !Y)	0.00081	0.00081	0.00081
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00084	-0.00085	-0.00085
	(!A2 * A3 * !B1 * !B2 * Y)	0.00081	0.00081	0.00081
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00084	-0.00085	-0.00085
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00076	0.00076	0.00075
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00092	-0.00092	-0.00091

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00168	0.00169	0.00167
	(A2 * A3 * B2 * !Y)	-0.00183	-0.00187	-0.00186
	(A2 * A3 * B1 * !B2 * !Y)	0.00168	0.00169	0.00167
	(A2 * A3 * B1 * !B2 * !Y)	-0.00183	-0.00187	-0.00186
	(A2 * !B1 * !B2 * Y)	0.00168	0.00169	0.00167
	(A2 * !B1 * !B2 * Y)	-0.00183	-0.00187	-0.00186
	(A2 * !A3 * B2 * !Y)	0.00168	0.00169	0.00167
	(A2 * !A3 * B2 * !Y)	-0.00183	-0.00187	-0.00186
	(A2 * !A3 * B1 * !B2 * !Y)	0.00168	0.00169	0.00167
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00183	-0.00187	-0.00186
	(!A2 * A3 * B2 * !Y)	0.00169	0.00169	0.00168
	(!A2 * A3 * B2 * !Y)	-0.00175	-0.00178	-0.00177
	(!A2 * A3 * B1 * !B2 * !Y)	0.00169	0.00169	0.00168
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00175	-0.00178	-0.00177
	(!A2 * A3 * !B1 * !B2 * Y)	0.00168	0.00168	0.00167
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00176	-0.00179	-0.00178
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00153	0.00153	0.00153
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00195	-0.00195	-0.00194

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00316	0.00316	0.00314
	(A2 * A3 * B2 * !Y)	-0.00356	-0.00362	-0.00360
	(A2 * A3 * B1 * !B2 * !Y)	0.00316	0.00316	0.00314
	(A2 * A3 * B1 * !B2 * !Y)	-0.00356	-0.00362	-0.00360
	(A2 * !B1 * !B2 * Y)	0.00316	0.00316	0.00314
	(A2 * !B1 * !B2 * Y)	-0.00356	-0.00362	-0.00360
	(A2 * !A3 * B2 * !Y)	0.00316	0.00316	0.00314
	(A2 * !A3 * B2 * !Y)	-0.00356	-0.00362	-0.00360
	(A2 * !A3 * B1 * !B2 * !Y)	0.00316	0.00316	0.00314
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00356	-0.00362	-0.00360
	(!A2 * A3 * B2 * !Y)	0.00316	0.00316	0.00314
	(!A2 * A3 * B2 * !Y)	-0.00339	-0.00345	-0.00343
	(!A2 * A3 * B1 * !B2 * !Y)	0.00316	0.00316	0.00314
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00339	-0.00345	-0.00343
	(!A2 * A3 * !B1 * !B2 * Y)	0.00315	0.00316	0.00314
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00340	-0.00346	-0.00344
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00289	0.00290	0.00288
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00375	-0.00378	-0.00377

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A2 * A3 * B2 * !Y)**	-0.00081	-0.00081	-0.00081
	(A2 * A3 * B2 * !Y)	0.00089	0.00090	0.00089
	(A2 * A3 * B1 * !B2 * !Y)	-0.00081	-0.00081	-0.00081
	(A2 * A3 * B1 * !B2 * !Y)	0.00089	0.00090	0.00089
	(A2 * !B1 * !B2 * Y)	-0.00081	-0.00081	-0.00081
	(A2 * !B1 * !B2 * Y)	0.00089	0.00090	0.00089
	(A2 * !A3 * B2 * !Y)	-0.00081	-0.00081	-0.00081
	(A2 * !A3 * B2 * !Y)	0.00090	0.00090	0.00089
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00081	-0.00081	-0.00081
	(A2 * !A3 * B1 * !B2 * !Y)	0.00090	0.00090	0.00089
	(!A2 * A3 * B2 * !Y)	-0.00081	-0.00081	-0.00081
	(!A2 * A3 * B2 * !Y)	0.00085	0.00085	0.00085
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00081	-0.00081	-0.00081
	(!A2 * A3 * B1 * !B2 * !Y)	0.00085	0.00085	0.00085
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00081	-0.00081	-0.00081
	(!A2 * A3 * !B1 * !B2 * Y)	0.00085	0.00085	0.00085
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00074	-0.00076	-0.00075
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00092	0.00092	0.00092

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00167	-0.00168	-0.00167
	(A2 * A3 * B2 * !Y)	0.00186	0.00187	0.00186
	(A2 * A3 * B1 * !B2 * !Y)	-0.00167	-0.00168	-0.00167
	(A2 * A3 * B1 * !B2 * !Y)	0.00186	0.00187	0.00186
	(A2 * !B1 * !B2 * Y)	-0.00167	-0.00168	-0.00167
	(A2 * !B1 * !B2 * Y)	0.00186	0.00187	0.00186
	(A2 * !A3 * B2 * !Y)	-0.00167	-0.00168	-0.00167
	(A2 * !A3 * B2 * !Y)	0.00186	0.00187	0.00186
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00167	-0.00168	-0.00167
	(A2 * !A3 * B1 * !B2 * !Y)	0.00187	0.00187	0.00186
	(!A2 * A3 * B2 * !Y)	-0.00168	-0.00168	-0.00168
	(!A2 * A3 * B2 * !Y)	0.00178	0.00178	0.00177
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00168	-0.00168	-0.00168
	(!A2 * A3 * B1 * !B2 * !Y)	0.00178	0.00178	0.00177
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00167	-0.00167	-0.00167
	(!A2 * A3 * !B1 * !B2 * Y)	0.00179	0.00179	0.00178
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00149	-0.00153	-0.00153
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00196	0.00197	0.00195

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00313	-0.00314	-0.00313
	(A2 * A3 * B2 * !Y)	0.00361	0.00362	0.00360
	(A2 * A3 * B1 * !B2 * !Y)	-0.00313	-0.00314	-0.00313
	(A2 * A3 * B1 * !B2 * !Y)	0.00361	0.00362	0.00360
	(A2 * !B1 * !B2 * Y)	-0.00314	-0.00314	-0.00313
	(A2 * !B1 * !B2 * Y)	0.00362	0.00362	0.00360
	(A2 * !A3 * B2 * !Y)	-0.00314	-0.00314	-0.00313
	(A2 * !A3 * B2 * !Y)	0.00361	0.00362	0.00360
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00314	-0.00314	-0.00313
	(A2 * !A3 * B1 * !B2 * !Y)	0.00361	0.00362	0.00360
	(!A2 * A3 * B2 * !Y)	-0.00314	-0.00315	-0.00314
	(!A2 * A3 * B2 * !Y)	0.00344	0.00345	0.00343
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00314	-0.00315	-0.00314
	(!A2 * A3 * B1 * !B2 * !Y)	0.00344	0.00345	0.00343
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00314	-0.00314	-0.00313
	(!A2 * A3 * !B1 * !B2 * Y)	0.00346	0.00346	0.00344
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00279	-0.00290	-0.00288
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00375	0.00382	0.00377

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A1 * A3 * B2 * !Y)**	0.00079	0.00079	0.00079
	(A1 * A3 * B2 * !Y)	-0.00073	-0.00074	-0.00073
	(A1 * A3 * B1 * !B2 * !Y)	0.00079	0.00079	0.00079
	(A1 * A3 * B1 * !B2 * !Y)	-0.00073	-0.00074	-0.00073
	(A1 * A3 * !B1 * !B2 * Y)	0.00078	0.00078	0.00078
	(A1 * A3 * !B1 * !B2 * Y)	-0.00078	-0.00079	-0.00079
	(A1 * !A3 * B2 * !Y)	0.00080	0.00079	0.00079
	(A1 * !A3 * B2 * !Y)	-0.00072	-0.00071	-0.00071
	(A1 * !A3 * B1 * !B2 * !Y)	0.00080	0.00079	0.00079
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00072	-0.00071	-0.00071
	(A1 * !A3 * !B1 * !B2 * Y)	0.00078	0.00079	0.00078
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00093	-0.00094	-0.00093
	(!A1 * A3 * B2 * !Y)	0.00079	0.00080	0.00079
	(!A1 * A3 * B2 * !Y)	-0.00092	-0.00093	-0.00093
	(!A1 * A3 * B1 * !B2 * !Y)	0.00079	0.00080	0.00079
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00092	-0.00093	-0.00093
	(!A1 * A3 * !B1 * !B2 * Y)	0.00078	0.00079	0.00078
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00093	-0.00094	-0.00094
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00071	0.00072	0.00071
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00096	-0.00097	-0.00096

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00154	0.00156	0.00155
	(A1 * A3 * B2 * !Y)	-0.00137	-0.00137	-0.00136
	(A1 * A3 * B1 * !B2 * !Y)	0.00154	0.00156	0.00155
	(A1 * A3 * B1 * !B2 * !Y)	-0.00137	-0.00137	-0.00136
	(A1 * A3 * !B1 * !B2 * Y)	0.00154	0.00154	0.00152
	(A1 * A3 * !B1 * !B2 * Y)	-0.00149	-0.00150	-0.00149
	(A1 * !A3 * B2 * !Y)	0.00154	0.00155	0.00154
	(A1 * !A3 * B2 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * !A3 * B1 * !B2 * !Y)	0.00154	0.00155	0.00154
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * !A3 * !B1 * !B2 * Y)	0.00152	0.00153	0.00152
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00175	-0.00178	-0.00176
	(!A1 * A3 * B2 * !Y)	0.00155	0.00156	0.00154
	(!A1 * A3 * B2 * !Y)	-0.00175	-0.00178	-0.00177
	(!A1 * A3 * B1 * !B2 * !Y)	0.00155	0.00157	0.00154
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00175	-0.00178	-0.00177
	(!A1 * A3 * !B1 * !B2 * Y)	0.00152	0.00154	0.00152
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00179	-0.00181	-0.00180
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00140	0.00141	0.00139
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00317	0.00319	0.00318
	(A1 * A3 * B2 * !Y)	-0.00277	-0.00279	-0.00278
	(A1 * A3 * B1 * !B2 * !Y)	0.00318	0.00319	0.00318
	(A1 * A3 * B1 * !B2 * !Y)	-0.00278	-0.00279	-0.00278
	(A1 * A3 * !B1 * !B2 * Y)	0.00318	0.00316	0.00314
	(A1 * A3 * !B1 * !B2 * Y)	-0.00299	-0.00301	-0.00300
	(A1 * !A3 * B2 * !Y)	0.00320	0.00319	0.00317
	(A1 * !A3 * B2 * !Y)	-0.00274	-0.00273	-0.00272
	(A1 * !A3 * B1 * !B2 * !Y)	0.00320	0.00319	0.00317
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00274	-0.00273	-0.00272
	(A1 * !A3 * !B1 * !B2 * Y)	0.00314	0.00318	0.00314
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00354	-0.00359	-0.00357
	(!A1 * A3 * B2 * !Y)	0.00318	0.00321	0.00317
	(!A1 * A3 * B2 * !Y)	-0.00358	-0.00364	-0.00362
	(!A1 * A3 * B1 * !B2 * !Y)	0.00318	0.00321	0.00317
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00358	-0.00364	-0.00362
	(!A1 * A3 * !B1 * !B2 * Y)	0.00314	0.00318	0.00314
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00363	-0.00368	-0.00366
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00287	0.00291	0.00287
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00375	-0.00380	-0.00377

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A1 * A3 * B2 * !Y)**	-0.00078	-0.00079	-0.00079
	(A1 * A3 * B2 * !Y)	0.00073	0.00074	0.00073
	(A1 * A3 * B1 * !B2 * !Y)	-0.00078	-0.00079	-0.00079
	(A1 * A3 * B1 * !B2 * !Y)	0.00073	0.00074	0.00073
	(A1 * A3 * !B1 * !B2 * Y)	-0.00077	-0.00078	-0.00078
	(A1 * A3 * !B1 * !B2 * Y)	0.00078	0.00079	0.00079
	(A1 * !A3 * B2 * !Y)	-0.00079	-0.00079	-0.00078
	(A1 * !A3 * B2 * !Y)	0.00073	0.00072	0.00072
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00078	-0.00079	-0.00078
	(A1 * !A3 * B1 * !B2 * !Y)	0.00072	0.00072	0.00072
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00078	-0.00078	-0.00078
	(A1 * !A3 * !B1 * !B2 * Y)	0.00094	0.00094	0.00093
	(!A1 * A3 * B2 * !Y)	-0.00079	-0.00079	-0.00079
	(!A1 * A3 * B2 * !Y)	0.00093	0.00093	0.00093
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00079	-0.00079	-0.00079
	(!A1 * A3 * B1 * !B2 * !Y)	0.00093	0.00093	0.00093
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00078	-0.00078	-0.00078
	(!A1 * A3 * !B1 * !B2 * Y)	0.00094	0.00094	0.00094
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00070	-0.00072	-0.00071
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00097	0.00097	0.00096

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00154	-0.00155	-0.00154
	(A1 * A3 * B2 * !Y)	0.00137	0.00137	0.00136
	(A1 * A3 * B1 * !B2 * !Y)	-0.00154	-0.00155	-0.00154
	(A1 * A3 * B1 * !B2 * !Y)	0.00137	0.00137	0.00136
	(A1 * A3 * !B1 * !B2 * Y)	-0.00151	-0.00152	-0.00151
	(A1 * A3 * !B1 * !B2 * Y)	0.00149	0.00150	0.00149
	(A1 * !A3 * B2 * !Y)	-0.00154	-0.00154	-0.00154
	(A1 * !A3 * B2 * !Y)	0.00135	0.00135	0.00135
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00154	-0.00154	-0.00154
	(A1 * !A3 * B1 * !B2 * !Y)	0.00135	0.00135	0.00135
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00151	-0.00152	-0.00152
	(A1 * !A3 * !B1 * !B2 * Y)	0.00176	0.00178	0.00176
	(!A1 * A3 * B2 * !Y)	-0.00155	-0.00155	-0.00154
	(!A1 * A3 * B2 * !Y)	0.00178	0.00178	0.00177
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00154	-0.00155	-0.00154
	(!A1 * A3 * B1 * !B2 * !Y)	0.00176	0.00178	0.00177
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00151	-0.00152	-0.00151
	(!A1 * A3 * !B1 * !B2 * Y)	0.00179	0.00181	0.00180
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00136	-0.00141	-0.00139
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00187	0.00187	0.00186

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00315	-0.00317	-0.00316
	(A1 * A3 * B2 * !Y)	0.00277	0.00279	0.00278
	(A1 * A3 * B1 * !B2 * !Y)	-0.00316	-0.00317	-0.00316
	(A1 * A3 * B1 * !B2 * !Y)	0.00278	0.00279	0.00278
	(A1 * A3 * !B1 * !B2 * Y)	-0.00312	-0.00314	-0.00313
	(A1 * A3 * !B1 * !B2 * Y)	0.00299	0.00301	0.00300
	(A1 * !A3 * B2 * !Y)	-0.00316	-0.00317	-0.00316
	(A1 * !A3 * B2 * !Y)	0.00274	0.00275	0.00275
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00316	-0.00317	-0.00316
	(A1 * !A3 * B1 * !B2 * !Y)	0.00275	0.00275	0.00275
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00314	-0.00314	-0.00313
	(A1 * !A3 * !B1 * !B2 * Y)	0.00360	0.00359	0.00357
	(!A1 * A3 * B2 * !Y)	-0.00318	-0.00318	-0.00317
	(!A1 * A3 * B2 * !Y)	0.00363	0.00364	0.00362
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00318	-0.00318	-0.00317
	(!A1 * A3 * B1 * !B2 * !Y)	0.00363	0.00364	0.00362
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00314	-0.00314	-0.00313
	(!A1 * A3 * !B1 * !B2 * Y)	0.00368	0.00368	0.00366
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00278	-0.00291	-0.00287
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00375	0.00380	0.00378

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00086	0.00086	0.00085
	(A2 * B2 * !Y)	-0.00060	-0.00060	-0.00060
	(A2 * B1 * !B2 * !Y)	0.00085	0.00086	0.00085
	(A2 * B1 * !B2 * !Y)	-0.00060	-0.00060	-0.00060
	(A2 * !B1 * !B2 * Y)	0.00077	0.00078	0.00077
	(A2 * !B1 * !B2 * Y)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * B2 * !Y)	0.00085	0.00086	0.00085
	(A1 * !A2 * B2 * !Y)	-0.00059	-0.00060	-0.00060
	(A1 * !A2 * B1 * !B2 * !Y)	0.00085	0.00086	0.00085
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00060	-0.00060	-0.00060
	(A1 * !A2 * !B1 * !B2 * Y)	0.00078	0.00078	0.00077
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00090	-0.00090	-0.00090
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00188	0.00189	0.00188
	(A2 * B2 * !Y)	-0.00119	-0.00119	-0.00119
	(A2 * B1 * !B2 * !Y)	0.00189	0.00189	0.00188
	(A2 * B1 * !B2 * !Y)	-0.00119	-0.00119	-0.00119
	(A2 * !B1 * !B2 * Y)	0.00151	0.00152	0.00151
	(A2 * !B1 * !B2 * Y)	-0.00193	-0.00196	-0.00194
	(A1 * !A2 * B2 * !Y)	0.00188	0.00189	0.00188
	(A1 * !A2 * B2 * !Y)	-0.00119	-0.00119	-0.00118
	(A1 * !A2 * B1 * !B2 * !Y)	0.00188	0.00189	0.00188
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00119	-0.00119	-0.00118
	(A1 * !A2 * !B1 * !B2 * Y)	0.00151	0.00151	0.00151
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00183	-0.00185	-0.00183
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00139	0.00140	0.00139
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00201	-0.00201	-0.00200

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00355	0.00356	0.00355
	(A2 * B2 * !Y)	-0.00236	-0.00236	-0.00235
	(A2 * B1 * !B2 * !Y)	0.00356	0.00356	0.00355
	(A2 * B1 * !B2 * !Y)	-0.00236	-0.00236	-0.00235
	(A2 * !B1 * !B2 * Y)	0.00295	0.00295	0.00294
	(A2 * !B1 * !B2 * Y)	-0.00372	-0.00376	-0.00374
	(A1 * !A2 * B2 * !Y)	0.00355	0.00356	0.00355
	(A1 * !A2 * B2 * !Y)	-0.00235	-0.00236	-0.00234
	(A1 * !A2 * B1 * !B2 * !Y)	0.00355	0.00358	0.00355
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00236	-0.00237	-0.00234
	(A1 * !A2 * !B1 * !B2 * Y)	0.00295	0.00298	0.00294
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00350	-0.00352	-0.00350
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00272	0.00273	0.00272
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00386	-0.00387	-0.00386

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00084	-0.00084	-0.00085
	(A2 * B2 * !Y)	0.00061	0.00061	0.00060
	(A2 * B1 * !B2 * !Y)	-0.00084	-0.00084	-0.00085
	(A2 * B1 * !B2 * !Y)	0.00061	0.00061	0.00060
	(A2 * !B1 * !B2 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * !B2 * Y)	0.00088	0.00088	0.00087
	(A1 * !A2 * B2 * !Y)	-0.00076	-0.00076	-0.00084
	(A1 * !A2 * B2 * !Y)	0.00067	0.00067	0.00061
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00076	-0.00076	-0.00084
	(A1 * !A2 * B1 * !B2 * !Y)	0.00067	0.00067	0.00061
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !B2 * Y)	0.00082	0.00082	0.00082
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00070	-0.00071	-0.00071
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00091	0.00091	0.00090
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00184	-0.00185	-0.00188
	(A2 * B2 * !Y)	0.00124	0.00124	0.00120
	(A2 * B1 * !B2 * !Y)	-0.00184	-0.00185	-0.00188
	(A2 * B1 * !B2 * !Y)	0.00124	0.00124	0.00120
	(A2 * !B1 * !B2 * Y)	-0.00150	-0.00152	-0.00151
	(A2 * !B1 * !B2 * Y)	0.00193	0.00196	0.00194
	(A1 * !A2 * B2 * !Y)	-0.00166	-0.00167	-0.00185
	(A1 * !A2 * B2 * !Y)	0.00135	0.00134	0.00121
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00166	-0.00167	-0.00185
	(A1 * !A2 * B1 * !B2 * !Y)	0.00135	0.00134	0.00121
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00151	-0.00151	-0.00151
	(A1 * !A2 * !B1 * !B2 * Y)	0.00184	0.00185	0.00183
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00136	-0.00140	-0.00139
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00201	0.00201	0.00200

sky130_fd_sc_hs__o32ai_4	(A2 * B2 * !Y)	-0.00348	-0.00350	-0.00355
	(A2 * B2 * !Y)	0.00244	0.00243	0.00237
	(A2 * B1 * !B2 * !Y)	-0.00349	-0.00350	-0.00355
	(A2 * B1 * !B2 * !Y)	0.00244	0.00243	0.00237
	(A2 * !B1 * !B2 * Y)	-0.00292	-0.00295	-0.00293
	(A2 * !B1 * !B2 * Y)	0.00373	0.00376	0.00374
	(A1 * !A2 * B2 * !Y)	-0.00313	-0.00315	-0.00349
	(A1 * !A2 * B2 * !Y)	0.00266	0.00265	0.00240
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00310	-0.00315	-0.00349
	(A1 * !A2 * B1 * !B2 * !Y)	0.00264	0.00265	0.00240
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00294	-0.00294	-0.00293
	(A1 * !A2 * !B1 * !B2 * Y)	0.00352	0.00352	0.00350
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00266	-0.00273	-0.00272
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00388	0.00388	0.00386

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B2 * !Y)	0.00087	0.00087	0.00087
	(A3 * B2 * !Y)	-0.00087	-0.00088	-0.00088
	(A2 * !A3 * B2 * !Y)	0.00087	0.00087	0.00087
	(A2 * !A3 * B2 * !Y)	-0.00087	-0.00088	-0.00088
	(A1 * !A2 * !A3 * B2 * !Y)	0.00087	0.00087	0.00087
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00087	-0.00088	-0.00088
	(!A1 * !A2 * !A3 * B2 * Y)	0.00035	0.00035	0.00035
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00107	-0.00109	-0.00108
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00041	0.00040	0.00037
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00103	-0.00104	-0.00110

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00158	0.00157	0.00156
	(A3 * B2 * !Y)	-0.00171	-0.00174	-0.00173
	(A2 * !A3 * B2 * !Y)	0.00158	0.00157	0.00156
	(A2 * !A3 * B2 * !Y)	-0.00171	-0.00174	-0.00173
	(A1 * !A2 * !A3 * B2 * !Y)	0.00157	0.00157	0.00156
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00171	-0.00174	-0.00173
	(!A1 * !A2 * !A3 * B2 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00213	-0.00215	-0.00214
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00068	0.00067	0.00060
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00204	-0.00205	-0.00218
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00332	0.00332	0.00329
	(A3 * B2 * !Y)	-0.00343	-0.00350	-0.00347
	(A2 * !A3 * B2 * !Y)	0.00332	0.00332	0.00329
	(A2 * !A3 * B2 * !Y)	-0.00343	-0.00350	-0.00347
	(A1 * !A2 * !A3 * B2 * !Y)	0.00332	0.00331	0.00329
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00343	-0.00349	-0.00347
	(!A1 * !A2 * !A3 * B2 * Y)	0.00114	0.00114	0.00114
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00442	-0.00448	-0.00445
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00136	0.00135	0.00120
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00427	-0.00429	-0.00453

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00086	-0.00087	-0.00086
	(A3 * B2 * !Y)	0.00088	0.00088	0.00088
	(A2 * !A3 * B2 * !Y)	-0.00086	-0.00087	-0.00086
	(A2 * !A3 * B2 * !Y)	0.00088	0.00088	0.00088
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * !A3 * B2 * !Y)	0.00087	0.00088	0.00088
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * !A3 * B2 * Y)	0.00109	0.00109	0.00108
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00036	-0.00036	-0.00035
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00112	0.00111	0.00110
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00156	-0.00157	-0.00156
	(A3 * B2 * !Y)	0.00173	0.00174	0.00173
	(A2 * !A3 * B2 * !Y)	-0.00157	-0.00157	-0.00156
	(A2 * !A3 * B2 * !Y)	0.00174	0.00174	0.00173
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00157	-0.00157	-0.00156
	(A1 * !A2 * !A3 * B2 * !Y)	0.00173	0.00174	0.00173
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * !A3 * B2 * Y)	0.00215	0.00215	0.00214
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00058	-0.00057	-0.00057
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00221	0.00220	0.00219
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00329	-0.00331	-0.00329
	(A3 * B2 * !Y)	0.00346	0.00350	0.00347
	(A2 * !A3 * B2 * !Y)	-0.00330	-0.00331	-0.00329
	(A2 * !A3 * B2 * !Y)	0.00347	0.00350	0.00347
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00328	-0.00331	-0.00329
	(A1 * !A2 * !A3 * B2 * !Y)	0.00344	0.00349	0.00347
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00114	-0.00114	-0.00114
	(!A1 * !A2 * !A3 * B2 * Y)	0.00445	0.00448	0.00445
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00116	-0.00115	-0.00115
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00460	0.00458	0.00456

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00091	0.00092	0.00091
	(A3 * B1 * !Y)	-0.00059	-0.00058	-0.00058
	(A2 * !A3 * B1 * !Y)	0.00091	0.00091	0.00091
	(A2 * !A3 * B1 * !Y)	-0.00059	-0.00058	-0.00058
	(A1 * !A2 * !A3 * B1 * !Y)	0.00091	0.00091	0.00091
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00059	-0.00058	-0.00058
	(!A1 * !A2 * !A3 * B1 * Y)	0.00030	0.00030	0.00030
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00108	-0.00109	-0.00109
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00035	0.00035	0.00032
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00104	-0.00105	-0.00111
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00178	0.00179	0.00178
	(A3 * B1 * !Y)	-0.00120	-0.00120	-0.00119
	(A2 * !A3 * B1 * !Y)	0.00179	0.00179	0.00178
	(A2 * !A3 * B1 * !Y)	-0.00121	-0.00120	-0.00119
	(A1 * !A2 * !A3 * B1 * !Y)	0.00179	0.00180	0.00178
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00121	-0.00121	-0.00119
	(!A1 * !A2 * !A3 * B1 * Y)	0.00059	0.00060	0.00059
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00216	-0.00218	-0.00217
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00071	0.00070	0.00063
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00208	-0.00209	-0.00222

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00351	0.00352	0.00348
	(A3 * B1 * !Y)	-0.00241	-0.00239	-0.00237
	(A2 * !A3 * B1 * !Y)	0.00351	0.00352	0.00348
	(A2 * !A3 * B1 * !Y)	-0.00241	-0.00239	-0.00237
	(A1 * !A2 * !A3 * B1 * !Y)	0.00350	0.00352	0.00348
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00240	-0.00240	-0.00237
	(!A1 * !A2 * !A3 * B1 * Y)	0.00115	0.00115	0.00115
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00427	-0.00431	-0.00429
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00137	0.00136	0.00121
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00414	-0.00416	-0.00441

Passive power(pJ) for B2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00090	-0.00090	-0.00091
	(A3 * B1 * !Y)	0.00060	0.00060	0.00058
	(A2 * !A3 * B1 * !Y)	-0.00090	-0.00090	-0.00091
	(A2 * !A3 * B1 * !Y)	0.00060	0.00060	0.00058
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00090	-0.00090	-0.00091
	(A1 * !A2 * !A3 * B1 * !Y)	0.00060	0.00060	0.00058
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * !A3 * B1 * Y)	0.00109	0.00109	0.00109
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00030	-0.00030	-0.00030
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00112	0.00112	0.00112

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00173	-0.00174	-0.00178
	(A3 * B1 * !Y)	0.00124	0.00125	0.00121
	(A2 * !A3 * B1 * !Y)	-0.00173	-0.00174	-0.00178
	(A2 * !A3 * B1 * !Y)	0.00124	0.00125	0.00121
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00172	-0.00174	-0.00178
	(A1 * !A2 * !A3 * B1 * !Y)	0.00124	0.00125	0.00121
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * !A3 * B1 * Y)	0.00217	0.00218	0.00217
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00223	0.00224	0.00223
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00341	-0.00343	-0.00348
	(A3 * B1 * !Y)	0.00245	0.00246	0.00239
	(A2 * !A3 * B1 * !Y)	-0.00340	-0.00343	-0.00348
	(A2 * !A3 * B1 * !Y)	0.00245	0.00246	0.00239
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00341	-0.00341	-0.00348
	(A1 * !A2 * !A3 * B1 * !Y)	0.00246	0.00244	0.00239
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00115	-0.00115	-0.00115
	(!A1 * !A2 * !A3 * B1 * Y)	0.00430	0.00431	0.00429
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00116	-0.00116	-0.00116
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00442	0.00444	0.00443

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	B1	B2	X
0	0	0	x	x	0
0	x	1	0	0	0
0	x	1	x	1	1
0	x	1	1	x	1
x	1	x	0	0	0
x	1	x	x	1	1
x	1	x	1	x	1
1	x	x	0	0	0
1	x	x	x	1	1
1	x	x	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32a_1	12.78720
sky130_fd_sc_hs__o32a_2	15.98400
sky130_fd_sc_hs__o32a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__o32a_1	0.00234	0.00227	0.00228	0.00231	0.00238	0.18668
sky130_fd_sc_hs__o32a_2	0.00246	0.00241	0.00248	0.00270	0.00253	0.37344
sky130_fd_sc_hs__o32a_4	0.00412	0.00445	0.00421	0.00569	0.00454	0.73494

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.00012	0.00017
sky130_fd_sc_hs__o32a_2	0.00000	0.00016	0.00022
sky130_fd_sc_hs__o32a_4	0.00000	0.00032	0.00043

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (RR)	0.31684	1.73445	10.07930
	A2->X (RR)	0.31314	1.72787	10.03680
	A3->X (RR)	0.30136	1.70838	9.98908
	B1->X (RR)	0.29696	1.70518	9.79541
	B2->X (RR)	0.28713	1.68436	9.71192
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.30868	1.55036	10.17270
	A2->X (RR)	0.30754	1.54716	10.14610
	A3->X (RR)	0.29694	1.53185	10.09560
	B1->X (RR)	0.29008	1.54103	9.99239
	B2->X (RR)	0.27909	1.52012	9.91475
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.33021	1.44130	10.30020
	A2->X (RR)	0.32011	1.42686	10.25210
	A3->X (RR)	0.30376	1.40306	10.17490
	B1->X (RR)	0.31510	1.43974	10.10240
	B2->X (RR)	0.29574	1.40775	10.00800

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	1.81275	2.96474	9.26293
	A2->X (FF)	1.73765	2.86191	9.27090
	A3->X (FF)	1.56897	2.58153	8.55350
	B1->X (FF)	0.83718	1.94485	8.25255
	B2->X (FF)	0.76943	1.78089	7.70954
sky130_fd_sc_hs__o32a_2	A1->X (FF)	2.55576	3.76159	10.12690
	A2->X (FF)	2.48633	3.66034	10.14880
	A3->X (FF)	2.20454	3.26962	9.40908
	B1->X (FF)	1.18762	2.32135	8.85704
	B2->X (FF)	1.11241	2.14728	8.35168
sky130_fd_sc_hs__o32a_4	A1->X (FF)	2.23696	3.40323	9.93477
	A2->X (FF)	2.17993	3.29973	9.93290
	A3->X (FF)	1.93849	2.94642	9.14813
	B1->X (FF)	1.06724	2.15354	8.72890
	B2->X (FF)	0.96849	1.95943	8.17754

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.00648	0.00646	0.00639
	A1	0.00283	0.00281	0.00275
	A2	0.00593	0.00596	0.00590
	A2	0.00259	0.00261	0.00256
	A3	0.00536	0.00539	0.00532
	A3	0.00225	0.00227	0.00241
	B1	0.00582	0.00579	0.00572
	B1	0.00281	0.00277	0.00271
	B2	0.00521	0.00518	0.00508
	B2	0.00251	0.00247	0.00238
sky130_fd_sc_hs__o32a_2	A1	0.00813	0.00819	0.00816
	A1	0.00417	0.00423	0.00421
	A2	0.00758	0.00770	0.00769
	A2	0.00393	0.00404	0.00403
	A3	0.00704	0.00715	0.00712
	A3	0.00359	0.00370	0.00368
	B1	0.00745	0.00748	0.00743
	B1	0.00406	0.00410	0.00447
	B2	0.00677	0.00680	0.00674
	B2	0.00385	0.00389	0.00383

sky130_fd_sc_hs__o32a_4	**A1**	0.01545	0.01563	0.01573
	A1	0.00844	0.00862	0.00875
	A2	0.01445	0.01467	0.01471
	A2	0.00776	0.00799	0.00805
	A3	0.01289	0.01312	0.01314
	A3	0.00695	0.00719	0.00721
	B1	0.01461	0.01470	0.01468
	B1	0.00821	0.00832	0.00832
	B2	0.01297	0.01310	0.01307
	B2	0.00771	0.00785	0.00783

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00243	0.00242	0.00240
	A1	0.00599	0.00598	0.00592
	A2	0.00245	0.00245	0.00206
	A2	0.00568	0.00568	0.00563
	A3	0.00244	0.00243	0.00234
	A3	0.00542	0.00541	0.00535
	B1	0.00169	0.00170	0.00188
	B1	0.00479	0.00480	0.00477
	B2	0.00174	0.00172	0.00233
	B2	0.00450	0.00448	0.00444

sky130_fd_sc_hs__o32a_2	**A1**	0.00407	0.00415	0.00399
	A1	0.00795	0.00803	0.00805
	A2	0.00409	0.00418	0.00406
	A2	0.00765	0.00773	0.00776
	A3	0.00407	0.00415	0.00381
	A3	0.00740	0.00747	0.00747
	B1	0.00323	0.00332	0.00334
	B1	0.00667	0.00677	0.00678
	B2	0.00330	0.00338	0.00338
	B2	0.00626	0.00634	0.00634
sky130_fd_sc_hs__o32a_4	**A1**	0.00732	0.00755	0.00679
	A1	0.01417	0.01442	0.01458
	A2	0.00730	0.00755	0.00680
	A2	0.01376	0.01400	0.01414
	A3	0.00731	0.00753	0.00723
	A3	0.01295	0.01317	0.01325
	B1	0.00593	0.00614	0.00608
	B1	0.01251	0.01272	0.01275
	B2	0.00595	0.00613	0.00613
	B2	0.01137	0.01155	0.01158

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A2 * A3 * B2 * X)**	0.00078	0.00078	0.00077
	(A2 * A3 * B2 * X)	-0.00078	-0.00080	-0.00079
	(A2 * A3 * B1 * !B2 * X)	0.00078	0.00078	0.00077
	(A2 * A3 * B1 * !B2 * X)	-0.00078	-0.00080	-0.00079
	(A2 * !B1 * !B2 * !X)	0.00066	0.00066	0.00065
	(A2 * !B1 * !B2 * !X)	-0.00090	-0.00092	-0.00091
	(A2 * !A3 * B2 * X)	0.00078	0.00078	0.00077
	(A2 * !A3 * B2 * X)	-0.00078	-0.00080	-0.00079
	(A2 * !A3 * B1 * !B2 * X)	0.00078	0.00078	0.00077
	(A2 * !A3 * B1 * !B2 * X)	-0.00078	-0.00080	-0.00079
	(!A2 * A3 * B2 * X)	0.00077	0.00078	0.00077
	(!A2 * A3 * B2 * X)	-0.00074	-0.00076	-0.00075
	(!A2 * A3 * B1 * !B2 * X)	0.00077	0.00078	0.00077
	(!A2 * A3 * B1 * !B2 * X)	-0.00074	-0.00076	-0.00075
	(!A2 * A3 * !B1 * !B2 * !X)	0.00065	0.00066	0.00065
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00086	-0.00088	-0.00087
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00061	0.00061	0.00060
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00093	-0.00093	-0.00093

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00087	0.00087	0.00087
	(A2 * A3 * B2 * X)	-0.00078	-0.00080	-0.00079
	(A2 * A3 * B1 * !B2 * X)	0.00087	0.00087	0.00087
	(A2 * A3 * B1 * !B2 * X)	-0.00078	-0.00080	-0.00079
	(A2 * !B1 * !B2 * !X)	0.00076	0.00076	0.00075
	(A2 * !B1 * !B2 * !X)	-0.00090	-0.00091	-0.00091
	(A2 * !A3 * B2 * X)	0.00087	0.00087	0.00087
	(A2 * !A3 * B2 * X)	-0.00078	-0.00080	-0.00079
	(A2 * !A3 * B1 * !B2 * X)	0.00087	0.00087	0.00087
	(A2 * !A3 * B1 * !B2 * X)	-0.00078	-0.00080	-0.00079
	(!A2 * A3 * B2 * X)	0.00087	0.00087	0.00087
	(!A2 * A3 * B2 * X)	-0.00074	-0.00076	-0.00075
	(!A2 * A3 * B1 * !B2 * X)	0.00087	0.00087	0.00087
	(!A2 * A3 * B1 * !B2 * X)	-0.00074	-0.00076	-0.00075
	(!A2 * A3 * !B1 * !B2 * !X)	0.00076	0.00076	0.00075
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00086	-0.00087	-0.00087
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00070	0.00070	0.00070
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00093	-0.00093	-0.00093

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00132	0.00132	0.00131
	(A2 * A3 * B2 * X)	-0.00158	-0.00161	-0.00159
	(A2 * A3 * B1 * !B2 * X)	0.00132	0.00132	0.00131
	(A2 * A3 * B1 * !B2 * X)	-0.00158	-0.00161	-0.00159
	(A2 * !B1 * !B2 * !X)	0.00132	0.00132	0.00131
	(A2 * !B1 * !B2 * !X)	-0.00158	-0.00161	-0.00159
	(A2 * !A3 * B2 * X)	0.00132	0.00132	0.00131
	(A2 * !A3 * B2 * X)	-0.00158	-0.00160	-0.00159
	(A2 * !A3 * B1 * !B2 * X)	0.00132	0.00132	0.00131
	(A2 * !A3 * B1 * !B2 * X)	-0.00158	-0.00160	-0.00159
	(!A2 * A3 * B2 * X)	0.00132	0.00132	0.00131
	(!A2 * A3 * B2 * X)	-0.00150	-0.00153	-0.00152
	(!A2 * A3 * B1 * !B2 * X)	0.00132	0.00132	0.00131
	(!A2 * A3 * B1 * !B2 * X)	-0.00150	-0.00153	-0.00152
	(!A2 * A3 * !B1 * !B2 * !X)	0.00132	0.00132	0.00131
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00150	-0.00153	-0.00152
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00122	0.00122	0.00121
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00166	-0.00166	-0.00166

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A2 * A3 * B2 * X)**	-0.00078	-0.00077	-0.00077
	(A2 * A3 * B2 * X)	0.00080	0.00080	0.00079
	(A2 * A3 * B1 * !B2 * X)	-0.00077	-0.00077	-0.00077
	(A2 * A3 * B1 * !B2 * X)	0.00080	0.00080	0.00079
	(A2 * !B1 * !B2 * !X)	-0.00065	-0.00065	-0.00065
	(A2 * !B1 * !B2 * !X)	0.00092	0.00092	0.00091
	(A2 * !A3 * B2 * X)	-0.00078	-0.00077	-0.00077
	(A2 * !A3 * B2 * X)	0.00080	0.00080	0.00079
	(A2 * !A3 * B1 * !B2 * X)	-0.00077	-0.00077	-0.00077
	(A2 * !A3 * B1 * !B2 * X)	0.00080	0.00080	0.00079
	(!A2 * A3 * B2 * X)	-0.00077	-0.00077	-0.00077
	(!A2 * A3 * B2 * X)	0.00075	0.00076	0.00075
	(!A2 * A3 * B1 * !B2 * X)	-0.00077	-0.00077	-0.00077
	(!A2 * A3 * B1 * !B2 * X)	0.00075	0.00076	0.00075
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00065	-0.00065	-0.00065
	(!A2 * A3 * !B1 * !B2 * !X)	0.00087	0.00088	0.00087
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00059	-0.00061	-0.00060
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00094	0.00094	0.00093

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00087	-0.00087	-0.00087
	(A2 * A3 * B2 * X)	0.00080	0.00080	0.00079
	(A2 * A3 * B1 * !B2 * X)	-0.00087	-0.00087	-0.00087
	(A2 * A3 * B1 * !B2 * X)	0.00080	0.00080	0.00079
	(A2 * !B1 * !B2 * !X)	-0.00076	-0.00076	-0.00075
	(A2 * !B1 * !B2 * !X)	0.00092	0.00091	0.00091
	(A2 * !A3 * B2 * X)	-0.00087	-0.00087	-0.00087
	(A2 * !A3 * B2 * X)	0.00080	0.00080	0.00079
	(A2 * !A3 * B1 * !B2 * X)	-0.00087	-0.00087	-0.00087
	(A2 * !A3 * B1 * !B2 * X)	0.00080	0.00080	0.00079
	(!A2 * A3 * B2 * X)	-0.00087	-0.00087	-0.00087
	(!A2 * A3 * B2 * X)	0.00075	0.00076	0.00075
	(!A2 * A3 * B1 * !B2 * X)	-0.00087	-0.00087	-0.00087
	(!A2 * A3 * B1 * !B2 * X)	0.00075	0.00076	0.00075
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00075	-0.00076	-0.00075
	(!A2 * A3 * !B1 * !B2 * !X)	0.00087	0.00087	0.00087
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00069	-0.00070	-0.00070
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00093	0.00093	0.00093

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00131	-0.00132	-0.00131
	(A2 * A3 * B2 * X)	0.00160	0.00161	0.00159
	(A2 * A3 * B1 * !B2 * X)	-0.00131	-0.00132	-0.00131
	(A2 * A3 * B1 * !B2 * X)	0.00160	0.00161	0.00159
	(A2 * !B1 * !B2 * !X)	-0.00131	-0.00132	-0.00131
	(A2 * !B1 * !B2 * !X)	0.00160	0.00161	0.00159
	(A2 * !A3 * B2 * X)	-0.00131	-0.00132	-0.00131
	(A2 * !A3 * B2 * X)	0.00160	0.00160	0.00159
	(A2 * !A3 * B1 * !B2 * X)	-0.00131	-0.00132	-0.00131
	(A2 * !A3 * B1 * !B2 * X)	0.00160	0.00160	0.00159
	(!A2 * A3 * B2 * X)	-0.00131	-0.00132	-0.00131
	(!A2 * A3 * B2 * X)	0.00152	0.00153	0.00152
	(!A2 * A3 * B1 * !B2 * X)	-0.00131	-0.00132	-0.00131
	(!A2 * A3 * B1 * !B2 * X)	0.00152	0.00153	0.00152
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00131	-0.00132	-0.00131
	(!A2 * A3 * !B1 * !B2 * !X)	0.00153	0.00153	0.00152
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00119	-0.00122	-0.00121
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00167	0.00167	0.00166

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A1 * A3 * B2 * X)**	0.00070	0.00071	0.00070
	(A1 * A3 * B2 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A3 * B1 * !B2 * X)	0.00070	0.00071	0.00070
	(A1 * A3 * B1 * !B2 * X)	-0.00060	-0.00060	-0.00060
	(A1 * A3 * !B1 * !B2 * !X)	0.00067	0.00067	0.00067
	(A1 * A3 * !B1 * !B2 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * B2 * X)	0.00071	0.00071	0.00070
	(A1 * !A3 * B2 * X)	-0.00058	-0.00058	-0.00058
	(A1 * !A3 * B1 * !B2 * X)	0.00071	0.00071	0.00070
	(A1 * !A3 * B1 * !B2 * X)	-0.00058	-0.00058	-0.00058
	(A1 * !A3 * !B1 * !B2 * !X)	0.00067	0.00068	0.00067
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00079	-0.00080	-0.00080
	(!A1 * A3 * B2 * X)	0.00070	0.00070	0.00070
	(!A1 * A3 * B2 * X)	-0.00076	-0.00078	-0.00077
	(!A1 * A3 * B1 * !B2 * X)	0.00070	0.00070	0.00070
	(!A1 * A3 * B1 * !B2 * X)	-0.00076	-0.00078	-0.00077
	(!A1 * A3 * !B1 * !B2 * !X)	0.00067	0.00067	0.00067
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00080	-0.00081	-0.00081
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00083	-0.00083	-0.00083

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00080	0.00081	0.00081
	(A1 * A3 * B2 * X)	-0.00061	-0.00060	-0.00060
	(A1 * A3 * B1 * !B2 * X)	0.00080	0.00081	0.00081
	(A1 * A3 * B1 * !B2 * X)	-0.00061	-0.00060	-0.00060
	(A1 * A3 * !B1 * !B2 * !X)	0.00077	0.00077	0.00077
	(A1 * A3 * !B1 * !B2 * !X)	-0.00068	-0.00068	-0.00068
	(A1 * !A3 * B2 * X)	0.00081	0.00081	0.00080
	(A1 * !A3 * B2 * X)	-0.00059	-0.00059	-0.00058
	(A1 * !A3 * B1 * !B2 * X)	0.00081	0.00081	0.00080
	(A1 * !A3 * B1 * !B2 * X)	-0.00059	-0.00059	-0.00058
	(A1 * !A3 * !B1 * !B2 * !X)	0.00077	0.00078	0.00077
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00080	-0.00081	-0.00080
	(!A1 * A3 * B2 * X)	0.00081	0.00080	0.00080
	(!A1 * A3 * B2 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * A3 * B1 * !B2 * X)	0.00081	0.00080	0.00080
	(!A1 * A3 * B1 * !B2 * X)	-0.00077	-0.00078	-0.00077
	(!A1 * A3 * !B1 * !B2 * !X)	0.00077	0.00077	0.00077
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00080	-0.00081	-0.00081
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00070	0.00071	0.00071
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00083	-0.00084	-0.00083

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00135	0.00135	0.00135
	(A1 * A3 * B2 * X)	-0.00134	-0.00133	-0.00133
	(A1 * A3 * B1 * !B2 * X)	0.00135	0.00135	0.00135
	(A1 * A3 * B1 * !B2 * X)	-0.00134	-0.00133	-0.00133
	(A1 * A3 * !B1 * !B2 * !X)	0.00135	0.00136	0.00135
	(A1 * A3 * !B1 * !B2 * !X)	-0.00142	-0.00142	-0.00141
	(A1 * !A3 * B2 * X)	0.00135	0.00136	0.00135
	(A1 * !A3 * B2 * X)	-0.00130	-0.00130	-0.00130
	(A1 * !A3 * B1 * !B2 * X)	0.00136	0.00136	0.00135
	(A1 * !A3 * B1 * !B2 * X)	-0.00130	-0.00130	-0.00130
	(A1 * !A3 * !B1 * !B2 * !X)	0.00135	0.00136	0.00135
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00168	-0.00170	-0.00169
	(!A1 * A3 * B2 * X)	0.00136	0.00136	0.00135
	(!A1 * A3 * B2 * X)	-0.00170	-0.00171	-0.00170
	(!A1 * A3 * B1 * !B2 * X)	0.00136	0.00136	0.00135
	(!A1 * A3 * B1 * !B2 * X)	-0.00170	-0.00171	-0.00170
	(!A1 * A3 * !B1 * !B2 * !X)	0.00134	0.00136	0.00135
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00168	-0.00171	-0.00170
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00124	0.00125	0.00124
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00177	-0.00178	-0.00177

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A1 * A3 * B2 * X)**	-0.00070	-0.00070	-0.00070
	(A1 * A3 * B2 * X)	0.00060	0.00060	0.00060
	(A1 * A3 * B1 * !B2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A3 * B1 * !B2 * X)	0.00060	0.00060	0.00060
	(A1 * A3 * !B1 * !B2 * !X)	-0.00066	-0.00067	-0.00067
	(A1 * A3 * !B1 * !B2 * !X)	0.00067	0.00067	0.00067
	(A1 * !A3 * B2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A3 * B2 * X)	0.00059	0.00059	0.00059
	(A1 * !A3 * B1 * !B2 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A3 * B1 * !B2 * X)	0.00059	0.00059	0.00059
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * !B1 * !B2 * !X)	0.00081	0.00080	0.00080
	(!A1 * A3 * B2 * X)	-0.00070	-0.00070	-0.00070
	(!A1 * A3 * B2 * X)	0.00077	0.00078	0.00077
	(!A1 * A3 * B1 * !B2 * X)	-0.00070	-0.00070	-0.00070
	(!A1 * A3 * B1 * !B2 * X)	0.00077	0.00078	0.00077
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * A3 * !B1 * !B2 * !X)	0.00081	0.00081	0.00081
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00060	-0.00062	-0.00062
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00083	0.00083	0.00083

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00080	-0.00081	-0.00080
	(A1 * A3 * B2 * X)	0.00061	0.00060	0.00060
	(A1 * A3 * B1 * !B2 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A3 * B1 * !B2 * X)	0.00061	0.00060	0.00060
	(A1 * A3 * !B1 * !B2 * !X)	-0.00076	-0.00077	-0.00077
	(A1 * A3 * !B1 * !B2 * !X)	0.00068	0.00068	0.00068
	(A1 * !A3 * B2 * X)	-0.00081	-0.00081	-0.00080
	(A1 * !A3 * B2 * X)	0.00059	0.00059	0.00059
	(A1 * !A3 * B1 * !B2 * X)	-0.00081	-0.00081	-0.00080
	(A1 * !A3 * B1 * !B2 * X)	0.00059	0.00059	0.00059
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A3 * !B1 * !B2 * !X)	0.00081	0.00081	0.00080
	(!A1 * A3 * B2 * X)	-0.00080	-0.00080	-0.00080
	(!A1 * A3 * B2 * X)	0.00078	0.00078	0.00077
	(!A1 * A3 * B1 * !B2 * X)	-0.00080	-0.00080	-0.00080
	(!A1 * A3 * B1 * !B2 * X)	0.00078	0.00078	0.00077
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * A3 * !B1 * !B2 * !X)	0.00081	0.00082	0.00081
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00069	-0.00071	-0.00071
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00084	0.00084	0.00083

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00135	-0.00135	-0.00134
	(A1 * A3 * B2 * X)	0.00134	0.00133	0.00133
	(A1 * A3 * B1 * !B2 * X)	-0.00135	-0.00135	-0.00134
	(A1 * A3 * B1 * !B2 * X)	0.00134	0.00133	0.00133
	(A1 * A3 * !B1 * !B2 * !X)	-0.00135	-0.00135	-0.00134
	(A1 * A3 * !B1 * !B2 * !X)	0.00142	0.00142	0.00141
	(A1 * !A3 * B2 * X)	-0.00135	-0.00135	-0.00134
	(A1 * !A3 * B2 * X)	0.00132	0.00132	0.00132
	(A1 * !A3 * B1 * !B2 * X)	-0.00135	-0.00135	-0.00134
	(A1 * !A3 * B1 * !B2 * X)	0.00132	0.00132	0.00132
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00135	-0.00135	-0.00135
	(A1 * !A3 * !B1 * !B2 * !X)	0.00170	0.00170	0.00169
	(!A1 * A3 * B2 * X)	-0.00134	-0.00135	-0.00134
	(!A1 * A3 * B2 * X)	0.00170	0.00171	0.00170
	(!A1 * A3 * B1 * !B2 * X)	-0.00134	-0.00135	-0.00134
	(!A1 * A3 * B1 * !B2 * X)	0.00171	0.00171	0.00170
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00134	-0.00135	-0.00134
	(!A1 * A3 * !B1 * !B2 * !X)	0.00171	0.00171	0.00170
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00122	-0.00125	-0.00124
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00178	0.00178	0.00177

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00077	0.00077	0.00077
	(A2 * B2 * X)	-0.00054	-0.00054	-0.00053
	(A2 * B1 * !B2 * X)	0.00077	0.00077	0.00077
	(A2 * B1 * !B2 * X)	-0.00054	-0.00054	-0.00053
	(A2 * !B1 * !B2 * !X)	0.00067	0.00067	0.00067
	(A2 * !B1 * !B2 * !X)	-0.00080	-0.00081	-0.00081
	(A1 * !A2 * B2 * X)	0.00077	0.00077	0.00077
	(A1 * !A2 * B2 * X)	-0.00054	-0.00053	-0.00053
	(A1 * !A2 * B1 * !B2 * X)	0.00077	0.00077	0.00077
	(A1 * !A2 * B1 * !B2 * X)	-0.00054	-0.00053	-0.00053
	(A1 * !A2 * !B1 * !B2 * !X)	0.00067	0.00068	0.00067
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00075	-0.00076	-0.00076
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00083	-0.00083	-0.00083
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00090	0.00089	0.00089
	(A2 * B2 * X)	-0.00054	-0.00054	-0.00053
	(A2 * B1 * !B2 * X)	0.00090	0.00089	0.00089
	(A2 * B1 * !B2 * X)	-0.00054	-0.00054	-0.00053
	(A2 * !B1 * !B2 * !X)	0.00077	0.00077	0.00077
	(A2 * !B1 * !B2 * !X)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * B2 * X)	0.00090	0.00089	0.00089
	(A1 * !A2 * B2 * X)	-0.00054	-0.00053	-0.00053
	(A1 * !A2 * B1 * !B2 * X)	0.00090	0.00089	0.00089
	(A1 * !A2 * B1 * !B2 * X)	-0.00054	-0.00053	-0.00053
	(A1 * !A2 * !B1 * !B2 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00085	-0.00085	-0.00085

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00144	0.00144	0.00143
	(A2 * B2 * X)	-0.00108	-0.00107	-0.00107
	(A2 * B1 * !B2 * X)	0.00144	0.00144	0.00143
	(A2 * B1 * !B2 * X)	-0.00108	-0.00107	-0.00107
	(A2 * !B1 * !B2 * !X)	0.00130	0.00130	0.00130
	(A2 * !B1 * !B2 * !X)	-0.00153	-0.00155	-0.00154
	(A1 * !A2 * B2 * X)	0.00144	0.00144	0.00143
	(A1 * !A2 * B2 * X)	-0.00108	-0.00107	-0.00107
	(A1 * !A2 * B1 * !B2 * X)	0.00144	0.00144	0.00143
	(A1 * !A2 * B1 * !B2 * X)	-0.00108	-0.00107	-0.00107
	(A1 * !A2 * !B1 * !B2 * !X)	0.00130	0.00131	0.00130
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00146	-0.00147	-0.00146
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00120	0.00120	0.00120
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00161	-0.00161	-0.00161

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00075	-0.00076	-0.00077
	(A2 * B2 * X)	0.00055	0.00055	0.00054
	(A2 * B1 * !B2 * X)	-0.00075	-0.00076	-0.00077
	(A2 * B1 * !B2 * X)	0.00055	0.00055	0.00054
	(A2 * !B1 * !B2 * !X)	-0.00067	-0.00067	-0.00067
	(A2 * !B1 * !B2 * !X)	0.00081	0.00081	0.00081
	(A1 * !A2 * B2 * X)	-0.00068	-0.00069	-0.00076
	(A1 * !A2 * B2 * X)	0.00059	0.00059	0.00054
	(A1 * !A2 * B1 * !B2 * X)	-0.00068	-0.00069	-0.00076
	(A1 * !A2 * B1 * !B2 * X)	0.00059	0.00059	0.00054
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * !B1 * !B2 * !X)	0.00076	0.00076	0.00076
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00083	0.00083	0.00083
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00087	-0.00088	-0.00089
	(A2 * B2 * X)	0.00055	0.00055	0.00054
	(A2 * B1 * !B2 * X)	-0.00088	-0.00088	-0.00089
	(A2 * B1 * !B2 * X)	0.00055	0.00055	0.00054
	(A2 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00077
	(A2 * !B1 * !B2 * !X)	0.00083	0.00083	0.00083
	(A1 * !A2 * B2 * X)	-0.00080	-0.00082	-0.00088
	(A1 * !A2 * B2 * X)	0.00059	0.00059	0.00054
	(A1 * !A2 * B1 * !B2 * X)	-0.00080	-0.00082	-0.00088
	(A1 * !A2 * B1 * !B2 * X)	0.00059	0.00059	0.00054
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !B2 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00070	-0.00071	-0.00071
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00086	0.00086	0.00085

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00138	-0.00139	-0.00143
	(A2 * B2 * X)	0.00113	0.00112	0.00108
	(A2 * B1 * !B2 * X)	-0.00138	-0.00139	-0.00143
	(A2 * B1 * !B2 * X)	0.00113	0.00112	0.00108
	(A2 * !B1 * !B2 * !X)	-0.00130	-0.00130	-0.00130
	(A2 * !B1 * !B2 * !X)	0.00155	0.00155	0.00154
	(A1 * !A2 * B2 * X)	-0.00123	-0.00124	-0.00140
	(A1 * !A2 * B2 * X)	0.00123	0.00121	0.00110
	(A1 * !A2 * B1 * !B2 * X)	-0.00122	-0.00124	-0.00140
	(A1 * !A2 * B1 * !B2 * X)	0.00120	0.00121	0.00109
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * !B1 * !B2 * !X)	0.00147	0.00147	0.00146
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00118	-0.00120	-0.00120
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00162	0.00162	0.00161

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00078	0.00078	0.00078
	(A3 * B2 * X)	-0.00081	-0.00082	-0.00082
	(A2 * !A3 * B2 * X)	0.00078	0.00078	0.00078
	(A2 * !A3 * B2 * X)	-0.00081	-0.00082	-0.00082
	(A1 * !A2 * !A3 * B2 * X)	0.00078	0.00078	0.00078
	(A1 * !A2 * !A3 * B2 * X)	-0.00081	-0.00082	-0.00082
	(!A1 * !A2 * !A3 * B2 * !X)	0.00032	0.00032	0.00032
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00101	-0.00102	-0.00102
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00037	0.00036	0.00033
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00097	-0.00098	-0.00103

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00096	0.00096	0.00095
	(A3 * B2 * X)	-0.00089	-0.00090	-0.00090
	(A2 * !A3 * B2 * X)	0.00096	0.00096	0.00095
	(A2 * !A3 * B2 * X)	-0.00089	-0.00090	-0.00090
	(A1 * !A2 * !A3 * B2 * X)	0.00096	0.00096	0.00095
	(A1 * !A2 * !A3 * B2 * X)	-0.00089	-0.00091	-0.00090
	(!A1 * !A2 * !A3 * B2 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00116	-0.00117	-0.00117
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00044	0.00043	0.00040
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00112	-0.00112	-0.00118
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00165	0.00167	0.00166
	(A3 * B2 * X)	-0.00189	-0.00193	-0.00191
	(A2 * !A3 * B2 * X)	0.00165	0.00167	0.00166
	(A2 * !A3 * B2 * X)	-0.00188	-0.00193	-0.00191
	(A1 * !A2 * !A3 * B2 * X)	0.00165	0.00167	0.00166
	(A1 * !A2 * !A3 * B2 * X)	-0.00188	-0.00190	-0.00191
	(!A1 * !A2 * !A3 * B2 * !X)	0.00056	0.00057	0.00056
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00250	-0.00255	-0.00252
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00066	0.00066	0.00059
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00247	-0.00248	-0.00258

Passive power(pJ) for B1 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00077	-0.00078	-0.00078
	(A3 * B2 * X)	0.00081	0.00082	0.00082
	(A2 * !A3 * B2 * X)	-0.00077	-0.00078	-0.00078
	(A2 * !A3 * B2 * X)	0.00081	0.00082	0.00082
	(A1 * !A2 * !A3 * B2 * X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * !A3 * B2 * X)	0.00083	0.00082	0.00082
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * !A3 * B2 * !X)	0.00103	0.00103	0.00102
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00105	0.00104	0.00104
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00095	-0.00096	-0.00095
	(A3 * B2 * X)	0.00089	0.00090	0.00090
	(A2 * !A3 * B2 * X)	-0.00095	-0.00096	-0.00095
	(A2 * !A3 * B2 * X)	0.00089	0.00090	0.00090
	(A1 * !A2 * !A3 * B2 * X)	-0.00096	-0.00096	-0.00095
	(A1 * !A2 * !A3 * B2 * X)	0.00091	0.00091	0.00090
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * B2 * !X)	0.00118	0.00117	0.00117
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00118	0.00119	0.00119
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00165	-0.00166	-0.00166
	(A3 * B2 * X)	0.00191	0.00193	0.00191
	(A2 * !A3 * B2 * X)	-0.00165	-0.00166	-0.00166
	(A2 * !A3 * B2 * X)	0.00191	0.00193	0.00191
	(A1 * !A2 * !A3 * B2 * X)	-0.00165	-0.00165	-0.00166
	(A1 * !A2 * !A3 * B2 * X)	0.00191	0.00190	0.00191
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * B2 * !X)	0.00252	0.00255	0.00252
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00057	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00261	0.00262	0.00259

Passive power(pJ) for B2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00080	0.00080	0.00080
	(A3 * B1 * X)	-0.00054	-0.00054	-0.00054
	(A2 * !A3 * B1 * X)	0.00080	0.00080	0.00080
	(A2 * !A3 * B1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * !A3 * B1 * X)	0.00080	0.00080	0.00080
	(A1 * !A2 * !A3 * B1 * X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * !A3 * B1 * !X)	0.00026	0.00027	0.00026
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00099	-0.00100	-0.00099
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00031	0.00031	0.00028
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00096	-0.00096	-0.00102
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00090	0.00091	0.00090
	(A3 * B1 * X)	-0.00054	-0.00054	-0.00054
	(A2 * !A3 * B1 * X)	0.00090	0.00091	0.00090
	(A2 * !A3 * B1 * X)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * !A3 * B1 * X)	0.00090	0.00091	0.00090
	(A1 * !A2 * !A3 * B1 * X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * !A3 * B1 * !X)	0.00031	0.00031	0.00030
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00102	-0.00102	-0.00101
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00036	0.00036	0.00032
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00097	-0.00097	-0.00104

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00154	0.00156	0.00154
	(A3 * B1 * X)	-0.00109	-0.00110	-0.00108
	(A2 * !A3 * B1 * X)	0.00154	0.00156	0.00154
	(A2 * !A3 * B1 * X)	-0.00109	-0.00110	-0.00108
	(A1 * !A2 * !A3 * B1 * X)	0.00154	0.00155	0.00154
	(A1 * !A2 * !A3 * B1 * X)	-0.00109	-0.00110	-0.00108
	(!A1 * !A2 * !A3 * B1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00192	-0.00194	-0.00192
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00064	0.00063	0.00057
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00188	-0.00189	-0.00199

Passive power(pJ) for B2 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00078	-0.00079	-0.00080
	(A3 * B1 * X)	0.00056	0.00056	0.00054
	(A2 * !A3 * B1 * X)	-0.00078	-0.00079	-0.00080
	(A2 * !A3 * B1 * X)	0.00056	0.00056	0.00054
	(A1 * !A2 * !A3 * B1 * X)	-0.00078	-0.00079	-0.00080
	(A1 * !A2 * !A3 * B1 * X)	0.00056	0.00056	0.00054
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00026	-0.00027	-0.00026
	(!A1 * !A2 * !A3 * B1 * !X)	0.00100	0.00100	0.00099
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00027	-0.00027	-0.00027
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00102	0.00102	0.00102

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00089	-0.00089	-0.00090
	(A3 * B1 * X)	0.00056	0.00056	0.00054
	(A2 * !A3 * B1 * X)	-0.00089	-0.00089	-0.00090
	(A2 * !A3 * B1 * X)	0.00056	0.00056	0.00054
	(A1 * !A2 * !A3 * B1 * X)	-0.00089	-0.00089	-0.00090
	(A1 * !A2 * !A3 * B1 * X)	0.00056	0.00056	0.00054
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00031	-0.00031	-0.00030
	(!A1 * !A2 * !A3 * B1 * !X)	0.00102	0.00102	0.00101
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00104	0.00105	0.00104
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00151	-0.00151	-0.00154
	(A3 * B1 * X)	0.00113	0.00113	0.00109
	(A2 * !A3 * B1 * X)	-0.00151	-0.00151	-0.00154
	(A2 * !A3 * B1 * X)	0.00113	0.00113	0.00109
	(A1 * !A2 * !A3 * B1 * X)	-0.00151	-0.00151	-0.00154
	(A1 * !A2 * !A3 * B1 * X)	0.00113	0.00113	0.00109
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * !A3 * B1 * !X)	0.00194	0.00194	0.00192
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00055	-0.00055	-0.00054
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00200	0.00202	0.00200

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	Y
0	0	0	0	x	1
0	0	x	1	0	1
0	0	x	1	1	0
0	x	1	x	0	1
0	x	1	x	1	0
x	1	x	x	0	1
x	1	x	x	1	0
1	x	x	x	0	1
1	x	x	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41ai_1	11.18880
sky130_fd_sc_hs__o41ai_2	20.77920
sky130_fd_sc_hs__o41ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__o41ai_1	0.00238	0.00244	0.00254	0.00256	0.00264	0.03135
sky130_fd_sc_hs__o41ai_2	0.00465	0.00476	0.00455	0.00475	0.00512	0.06053
sky130_fd_sc_hs__o41ai_4	0.00899	0.00898	0.00915	0.00951	0.00711	0.12038

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.00006	0.00013
sky130_fd_sc_hs__o41ai_2	0.00000	0.00012	0.00026
sky130_fd_sc_hs__o41ai_4	0.00000	0.00021	0.00051

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (FR)	1.93173	4.41555	14.94900
	A2->Y (FR)	1.87062	4.32024	14.87350
	A3->Y (FR)	1.71838	4.12718	14.73760
	A4->Y (FR)	1.42360	3.73071	13.81140
	B1->Y (FR)	0.18580	1.33141	7.86160
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	1.86519	4.05656	15.05490
	A2->Y (FR)	1.80411	3.94462	14.95730
	A3->Y (FR)	1.62623	3.73701	14.82270
	A4->Y (FR)	1.23611	3.20736	13.76840
	B1->Y (FR)	0.14882	1.24342	7.80283
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	1.69931	3.63031	15.04730
	A2->Y (FR)	1.63065	3.52011	14.95560
	A3->Y (FR)	1.47138	3.31504	14.82810
	A4->Y (FR)	1.11018	2.83863	13.81840
	B1->Y (FR)	0.19692	1.39862	8.96158

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.09416	0.72805	3.88446
	A2->Y (RF)	0.09541	0.72626	3.86695
	A3->Y (RF)	0.09689	0.72017	3.84635
	A4->Y (RF)	0.09082	0.70488	3.81320
	B1->Y (RF)	0.07701	0.71727	3.81699
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.08998	0.69998	3.89225
	A2->Y (RF)	0.09116	0.69870	3.87373
	A3->Y (RF)	0.09204	0.69112	3.84742
	A4->Y (RF)	0.08676	0.67226	3.80991
	B1->Y (RF)	0.07062	0.68418	3.85206
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.08970	0.66956	3.89152
	A2->Y (RF)	0.08920	0.66635	3.86606
	A3->Y (RF)	0.08906	0.65734	3.83653
	A4->Y (RF)	0.08173	0.63367	3.78539
	B1->Y (RF)	0.07032	0.68215	4.05034

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00063	0.00056	0.00054
	A1	0.00436	0.00429	0.00425
	A2	0.00066	0.00059	0.00057
	A2	0.00406	0.00399	0.00394
	A3	0.00065	0.00058	0.00055
	A3	0.00381	0.00373	0.00363
	A4	0.00064	0.00054	0.00052
	A4	0.00350	0.00341	0.00337
	B1	-0.00020	-0.00028	-0.00029
	B1	0.00290	0.00282	0.00285
sky130_fd_sc_hs__o41ai_2	A1	0.00086	0.00071	0.00067
	A1	0.00829	0.00814	0.00807
	A2	0.00090	0.00074	0.00070
	A2	0.00773	0.00757	0.00750
	A3	0.00093	0.00078	0.00074
	A3	0.00707	0.00691	0.00682
	A4	0.00089	0.00069	0.00064
	A4	0.00641	0.00623	0.00617
	B1	-0.00102	-0.00114	-0.00115
	B1	0.00517	0.00506	0.00504

sky130_fd_sc_hs__o41ai_4	**A1**	0.00151	0.00126	0.00120
	A1	0.01603	0.01576	0.01564
	A2	0.00155	0.00128	0.00122
	A2	0.01481	0.01453	0.01441
	A3	0.00154	0.00125	0.00119
	A3	0.01369	0.01337	0.01321
	A4	0.00143	0.00107	0.00100
	A4	0.01235	0.01195	0.01186
	B1	-0.00154	-0.00171	-0.00173
	B1	0.00838	0.00818	0.00818

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.00459	0.00453	0.00437
	A1	0.00090	0.00084	0.00072
	A2	0.00410	0.00406	0.00394
	A2	0.00067	0.00062	0.00053
	A3	0.00357	0.00355	0.00347
	A3	0.00035	0.00032	0.00026
	A4	0.00296	0.00296	0.00292
	A4	-0.00001	-0.00002	-0.00005
	B1	0.00388	0.00383	0.00367
	B1	0.00092	0.00086	0.00075

sky130_fd_sc_hs__o41ai_2	**A1**	0.00941	0.00929	0.00891
	A1	0.00213	0.00198	0.00172
	A2	0.00830	0.00823	0.00796
	A2	0.00144	0.00136	0.00115
	A3	0.00717	0.00712	0.00694
	A3	0.00094	0.00087	0.00072
	A4	0.00572	0.00572	0.00567
	A4	-0.00002	-0.00005	-0.00009
	B1	0.00794	0.00783	0.00752
	B1	0.00210	0.00199	0.00174
sky130_fd_sc_hs__o41ai_4	**A1**	0.01753	0.01727	0.01656
	A1	0.00332	0.00306	0.00255
	A2	0.01539	0.01523	0.01471
	A2	0.00214	0.00192	0.00155
	A3	0.01323	0.01312	0.01281
	A3	0.00088	0.00073	0.00048
	A4	0.01055	0.01052	0.01048
	A4	-0.00071	-0.00082	-0.00083
	B1	0.01387	0.01377	0.01325
	B1	0.00464	0.00451	0.00417

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A2 * A4 * B1 * !Y)**	0.00080	0.00081	0.00080
	(A2 * A4 * B1 * !Y)	-0.00090	-0.00092	-0.00091
	(A2 * A3 * !A4 * B1 * !Y)	0.00080	0.00081	0.00080
	(A2 * A3 * !A4 * B1 * !Y)	-0.00090	-0.00092	-0.00091
	(A2 * !B1 * Y)	0.00080	0.00081	0.00080
	(A2 * !B1 * Y)	-0.00090	-0.00092	-0.00091
	(A2 * !A3 * !A4 * B1 * !Y)	0.00080	0.00081	0.00080
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00090	-0.00092	-0.00091
	(!A2 * A3 * A4 * B1 * !Y)	0.00081	0.00081	0.00080
	(!A2 * A3 * A4 * B1 * !Y)	-0.00085	-0.00087	-0.00086
	(!A2 * A3 * !B1 * Y)	0.00081	0.00081	0.00080
	(!A2 * A3 * !B1 * Y)	-0.00085	-0.00087	-0.00086
	(!A2 * A3 * !A4 * B1 * !Y)	0.00081	0.00081	0.00080
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00085	-0.00087	-0.00086
	(!A2 * !A3 * A4 * B1 * !Y)	0.00081	0.00080	0.00080
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00084	-0.00086	-0.00085
	(!A2 * !A3 * A4 * !B1 * Y)	0.00081	0.00080	0.00080
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00084	-0.00086	-0.00085
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00074	0.00074	0.00074
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00093	-0.00093	-0.00093

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00160	0.00160	0.00159
	(A2 * A4 * B1 * !Y)	-0.00177	-0.00181	-0.00179
	(A2 * A3 * !A4 * B1 * !Y)	0.00160	0.00160	0.00159
	(A2 * A3 * !A4 * B1 * !Y)	-0.00177	-0.00181	-0.00179
	(A2 * !B1 * Y)	0.00160	0.00160	0.00159
	(A2 * !B1 * Y)	-0.00177	-0.00181	-0.00179
	(A2 * !A3 * !A4 * B1 * !Y)	0.00160	0.00160	0.00159
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00177	-0.00180	-0.00179
	(!A2 * A3 * A4 * B1 * !Y)	0.00160	0.00160	0.00159
	(!A2 * A3 * A4 * B1 * !Y)	-0.00168	-0.00171	-0.00170
	(!A2 * A3 * !B1 * Y)	0.00160	0.00160	0.00159
	(!A2 * A3 * !B1 * Y)	-0.00168	-0.00171	-0.00170
	(!A2 * A3 * !A4 * B1 * !Y)	0.00160	0.00160	0.00159
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00168	-0.00171	-0.00170
	(!A2 * !A3 * A4 * B1 * !Y)	0.00160	0.00160	0.00159
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00167	-0.00170	-0.00169
	(!A2 * !A3 * A4 * !B1 * Y)	0.00160	0.00159	0.00159
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00167	-0.00170	-0.00169
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00147	0.00147	0.00146
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00187	-0.00187	-0.00186

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00308	0.00308	0.00306
	(A2 * A4 * B1 * !Y)	-0.00354	-0.00360	-0.00358
	(A2 * A3 * !A4 * B1 * !Y)	0.00308	0.00308	0.00306
	(A2 * A3 * !A4 * B1 * !Y)	-0.00354	-0.00360	-0.00358
	(A2 * !B1 * Y)	0.00308	0.00308	0.00306
	(A2 * !B1 * Y)	-0.00354	-0.00360	-0.00358
	(A2 * !A3 * !A4 * B1 * !Y)	0.00308	0.00308	0.00306
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00354	-0.00360	-0.00358
	(!A2 * A3 * A4 * B1 * !Y)	0.00308	0.00308	0.00306
	(!A2 * A3 * A4 * B1 * !Y)	-0.00333	-0.00340	-0.00337
	(!A2 * A3 * !B1 * Y)	0.00308	0.00308	0.00306
	(!A2 * A3 * !B1 * Y)	-0.00333	-0.00340	-0.00337
	(!A2 * A3 * !A4 * B1 * !Y)	0.00308	0.00308	0.00306
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00333	-0.00340	-0.00337
	(!A2 * !A3 * A4 * B1 * !Y)	0.00308	0.00307	0.00306
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00331	-0.00337	-0.00334
	(!A2 * !A3 * A4 * !B1 * Y)	0.00307	0.00307	0.00306
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00331	-0.00337	-0.00335
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00282	0.00282	0.00280
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00372	-0.00373	-0.00372

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A2 * A4 * B1 * !Y)**	-0.00080	-0.00080	-0.00080
	(A2 * A4 * B1 * !Y)	0.00091	0.00092	0.00091
	(A2 * A3 * !A4 * B1 * !Y)	-0.00080	-0.00080	-0.00080
	(A2 * A3 * !A4 * B1 * !Y)	0.00091	0.00092	0.00091
	(A2 * !B1 * Y)	-0.00080	-0.00080	-0.00080
	(A2 * !B1 * Y)	0.00092	0.00092	0.00091
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00080	-0.00080	-0.00080
	(A2 * !A3 * !A4 * B1 * !Y)	0.00092	0.00092	0.00091
	(!A2 * A3 * A4 * B1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A2 * A3 * A4 * B1 * !Y)	0.00087	0.00087	0.00086
	(!A2 * A3 * !B1 * Y)	-0.00080	-0.00080	-0.00080
	(!A2 * A3 * !B1 * Y)	0.00086	0.00087	0.00086
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A2 * A3 * !A4 * B1 * !Y)	0.00087	0.00087	0.00086
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A2 * !A3 * A4 * B1 * !Y)	0.00086	0.00086	0.00085
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00080	-0.00080	-0.00080
	(!A2 * !A3 * A4 * !B1 * Y)	0.00086	0.00086	0.00085
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00072	-0.00074	-0.00074
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00094	0.00094	0.00093

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00160	-0.00159	-0.00159
	(A2 * A4 * B1 * !Y)	0.00181	0.00181	0.00179
	(A2 * A3 * !A4 * B1 * !Y)	-0.00159	-0.00159	-0.00159
	(A2 * A3 * !A4 * B1 * !Y)	0.00180	0.00181	0.00179
	(A2 * !B1 * Y)	-0.00159	-0.00159	-0.00159
	(A2 * !B1 * Y)	0.00180	0.00181	0.00179
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00159	-0.00159	-0.00159
	(A2 * !A3 * !A4 * B1 * !Y)	0.00180	0.00180	0.00179
	(!A2 * A3 * A4 * B1 * !Y)	-0.00159	-0.00159	-0.00159
	(!A2 * A3 * A4 * B1 * !Y)	0.00171	0.00171	0.00170
	(!A2 * A3 * !B1 * Y)	-0.00159	-0.00159	-0.00159
	(!A2 * A3 * !B1 * Y)	0.00171	0.00171	0.00170
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00159	-0.00159	-0.00159
	(!A2 * A3 * !A4 * B1 * !Y)	0.00171	0.00171	0.00170
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00160	-0.00160	-0.00159
	(!A2 * !A3 * A4 * B1 * !Y)	0.00170	0.00170	0.00169
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00159	-0.00159	-0.00159
	(!A2 * !A3 * A4 * !B1 * Y)	0.00170	0.00170	0.00169
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00143	-0.00147	-0.00146
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00188	0.00189	0.00187

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00306	-0.00306	-0.00305
	(A2 * A4 * B1 * !Y)	0.00360	0.00360	0.00358
	(A2 * A3 * !A4 * B1 * !Y)	-0.00306	-0.00306	-0.00305
	(A2 * A3 * !A4 * B1 * !Y)	0.00359	0.00360	0.00358
	(A2 * !B1 * Y)	-0.00305	-0.00306	-0.00305
	(A2 * !B1 * Y)	0.00358	0.00360	0.00358
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00306	-0.00306	-0.00305
	(A2 * !A3 * !A4 * B1 * !Y)	0.00359	0.00360	0.00358
	(!A2 * A3 * A4 * B1 * !Y)	-0.00306	-0.00306	-0.00305
	(!A2 * A3 * A4 * B1 * !Y)	0.00339	0.00340	0.00337
	(!A2 * A3 * !B1 * Y)	-0.00306	-0.00306	-0.00305
	(!A2 * A3 * !B1 * Y)	0.00339	0.00340	0.00337
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00306	-0.00306	-0.00305
	(!A2 * A3 * !A4 * B1 * !Y)	0.00339	0.00340	0.00337
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00306	-0.00307	-0.00305
	(!A2 * !A3 * A4 * B1 * !Y)	0.00337	0.00337	0.00334
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00306	-0.00306	-0.00305
	(!A2 * !A3 * A4 * !B1 * Y)	0.00337	0.00337	0.00335
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00272	-0.00282	-0.00280
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00372	0.00378	0.00373

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A1 * A3 * A4 * B1 * !Y)**	0.00078	0.00078	0.00078
	(A1 * A3 * A4 * B1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * A3 * !B1 * Y)	0.00078	0.00078	0.00078
	(A1 * A3 * !B1 * Y)	-0.00074	-0.00074	-0.00073
	(A1 * A3 * !A4 * B1 * !Y)	0.00078	0.00078	0.00078
	(A1 * A3 * !A4 * B1 * !Y)	-0.00071	-0.00071	-0.00070
	(A1 * !A3 * A4 * B1 * !Y)	0.00078	0.00078	0.00078
	(A1 * !A3 * A4 * B1 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * A4 * !B1 * Y)	0.00079	0.00077	0.00078
	(A1 * !A3 * A4 * !B1 * Y)	-0.00073	-0.00073	-0.00073
	(A1 * !A3 * !A4 * B1 * !Y)	0.00077	0.00078	0.00077
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * !A4 * !B1 * Y)	0.00078	0.00078	0.00078
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00088	-0.00088	-0.00088
	(!A1 * A3 * A4 * B1 * !Y)	0.00078	0.00077	0.00078
	(!A1 * A3 * A4 * B1 * !Y)	-0.00087	-0.00088	-0.00088
	(!A1 * A3 * !B1 * Y)	0.00078	0.00077	0.00078
	(!A1 * A3 * !B1 * Y)	-0.00087	-0.00088	-0.00088
	(!A1 * A3 * !A4 * B1 * !Y)	0.00078	0.00077	0.00078
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00087	-0.00088	-0.00088
	(!A1 * !A3 * A4 * B1 * !Y)	0.00077	0.00078	0.00077
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00081	-0.00083	-0.00082
	(!A1 * !A3 * A4 * !B1 * Y)	0.00077	0.00078	0.00077
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00081	-0.00083	-0.00082
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00072	0.00072	0.00071
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00091	-0.00091	-0.00091

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00161	0.00161	0.00160
	(A1 * A3 * A4 * B1 * !Y)	-0.00150	-0.00149	-0.00149
	(A1 * A3 * !B1 * Y)	0.00161	0.00161	0.00160
	(A1 * A3 * !B1 * Y)	-0.00152	-0.00152	-0.00152
	(A1 * A3 * !A4 * B1 * !Y)	0.00159	0.00160	0.00160
	(A1 * A3 * !A4 * B1 * !Y)	-0.00147	-0.00147	-0.00146
	(A1 * !A3 * A4 * B1 * !Y)	0.00161	0.00161	0.00160
	(A1 * !A3 * A4 * B1 * !Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A3 * A4 * !B1 * Y)	0.00161	0.00160	0.00159
	(A1 * !A3 * A4 * !B1 * Y)	-0.00152	-0.00153	-0.00152
	(A1 * !A3 * !A4 * B1 * !Y)	0.00159	0.00160	0.00160
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00139	-0.00139	-0.00139
	(A1 * !A3 * !A4 * !B1 * Y)	0.00161	0.00160	0.00160
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00181	-0.00182	-0.00181
	(!A1 * A3 * A4 * B1 * !Y)	0.00160	0.00162	0.00160
	(!A1 * A3 * A4 * B1 * !Y)	-0.00182	-0.00185	-0.00184
	(!A1 * A3 * !B1 * Y)	0.00160	0.00162	0.00160
	(!A1 * A3 * !B1 * Y)	-0.00182	-0.00185	-0.00184
	(!A1 * A3 * !A4 * B1 * !Y)	0.00160	0.00162	0.00160
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00182	-0.00185	-0.00184
	(!A1 * !A3 * A4 * B1 * !Y)	0.00159	0.00160	0.00160
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00172	-0.00175	-0.00174
	(!A1 * !A3 * A4 * !B1 * Y)	0.00159	0.00160	0.00159
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00172	-0.00175	-0.00174
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00146	0.00147	0.00146
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00190	-0.00191	-0.00189

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00307	0.00305	0.00303
	(A1 * A3 * A4 * B1 * !Y)	-0.00286	-0.00286	-0.00285
	(A1 * A3 * !B1 * Y)	0.00306	0.00305	0.00303
	(A1 * A3 * !B1 * Y)	-0.00291	-0.00291	-0.00290
	(A1 * A3 * !A4 * B1 * !Y)	0.00306	0.00305	0.00303
	(A1 * A3 * !A4 * B1 * !Y)	-0.00282	-0.00282	-0.00280
	(A1 * !A3 * A4 * B1 * !Y)	0.00304	0.00305	0.00303
	(A1 * !A3 * A4 * B1 * !Y)	-0.00276	-0.00277	-0.00275
	(A1 * !A3 * A4 * !B1 * Y)	0.00307	0.00303	0.00303
	(A1 * !A3 * A4 * !B1 * Y)	-0.00293	-0.00293	-0.00292
	(A1 * !A3 * !A4 * B1 * !Y)	0.00308	0.00304	0.00303
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00271	-0.00268	-0.00266
	(A1 * !A3 * !A4 * !B1 * Y)	0.00304	0.00304	0.00303
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00353	-0.00356	-0.00353
	(!A1 * A3 * A4 * B1 * !Y)	0.00304	0.00302	0.00303
	(!A1 * A3 * A4 * B1 * !Y)	-0.00349	-0.00355	-0.00353
	(!A1 * A3 * !B1 * Y)	0.00304	0.00302	0.00303
	(!A1 * A3 * !B1 * Y)	-0.00349	-0.00356	-0.00354
	(!A1 * A3 * !A4 * B1 * !Y)	0.00304	0.00302	0.00303
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00349	-0.00355	-0.00353
	(!A1 * !A3 * A4 * B1 * !Y)	0.00302	0.00304	0.00303
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00330	-0.00335	-0.00334
	(!A1 * !A3 * A4 * !B1 * Y)	0.00302	0.00304	0.00303
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00331	-0.00336	-0.00334
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00278	0.00281	0.00277
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00369	-0.00373	-0.00370

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A1 * A3 * A4 * B1 * !Y)**	-0.00078	-0.00078	-0.00077
	(A1 * A3 * A4 * B1 * !Y)	0.00072	0.00072	0.00072
	(A1 * A3 * !B1 * Y)	-0.00078	-0.00078	-0.00077
	(A1 * A3 * !B1 * Y)	0.00074	0.00074	0.00073
	(A1 * A3 * !A4 * B1 * !Y)	-0.00078	-0.00078	-0.00077
	(A1 * A3 * !A4 * B1 * !Y)	0.00071	0.00071	0.00070
	(A1 * !A3 * A4 * B1 * !Y)	-0.00078	-0.00078	-0.00077
	(A1 * !A3 * A4 * B1 * !Y)	0.00069	0.00069	0.00069
	(A1 * !A3 * A4 * !B1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A3 * A4 * !B1 * Y)	0.00073	0.00073	0.00073
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00077	-0.00078	-0.00077
	(A1 * !A3 * !A4 * B1 * !Y)	0.00068	0.00068	0.00068
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00078	-0.00078	-0.00077
	(A1 * !A3 * !A4 * !B1 * Y)	0.00088	0.00088	0.00088
	(!A1 * A3 * A4 * B1 * !Y)	-0.00078	-0.00077	-0.00077
	(!A1 * A3 * A4 * B1 * !Y)	0.00088	0.00088	0.00088
	(!A1 * A3 * !B1 * Y)	-0.00078	-0.00077	-0.00077
	(!A1 * A3 * !B1 * Y)	0.00088	0.00088	0.00088
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00078	-0.00077	-0.00077
	(!A1 * A3 * !A4 * B1 * !Y)	0.00088	0.00088	0.00088
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00077	-0.00078	-0.00077
	(!A1 * !A3 * A4 * B1 * !Y)	0.00082	0.00083	0.00082
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00077	-0.00078	-0.00077
	(!A1 * !A3 * A4 * !B1 * Y)	0.00082	0.00083	0.00082
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00069	-0.00072	-0.00071
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00091	0.00091	0.00091

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00160	-0.00160	-0.00159
	(A1 * A3 * A4 * B1 * !Y)	0.00150	0.00149	0.00149
	(A1 * A3 * !B1 * Y)	-0.00160	-0.00160	-0.00159
	(A1 * A3 * !B1 * Y)	0.00152	0.00152	0.00152
	(A1 * A3 * !A4 * B1 * !Y)	-0.00159	-0.00160	-0.00159
	(A1 * A3 * !A4 * B1 * !Y)	0.00147	0.00147	0.00146
	(A1 * !A3 * A4 * B1 * !Y)	-0.00159	-0.00160	-0.00159
	(A1 * !A3 * A4 * B1 * !Y)	0.00143	0.00144	0.00143
	(A1 * !A3 * A4 * !B1 * Y)	-0.00159	-0.00160	-0.00159
	(A1 * !A3 * A4 * !B1 * Y)	0.00152	0.00153	0.00152
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00159	-0.00160	-0.00159
	(A1 * !A3 * !A4 * B1 * !Y)	0.00141	0.00141	0.00141
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00160	-0.00160	-0.00159
	(A1 * !A3 * !A4 * !B1 * Y)	0.00182	0.00182	0.00181
	(!A1 * A3 * A4 * B1 * !Y)	-0.00160	-0.00160	-0.00159
	(!A1 * A3 * A4 * B1 * !Y)	0.00185	0.00185	0.00184
	(!A1 * A3 * !B1 * Y)	-0.00160	-0.00160	-0.00159
	(!A1 * A3 * !B1 * Y)	0.00184	0.00185	0.00184
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00158	-0.00160	-0.00159
	(!A1 * A3 * !A4 * B1 * !Y)	0.00183	0.00185	0.00184
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00159	-0.00160	-0.00160
	(!A1 * !A3 * A4 * B1 * !Y)	0.00174	0.00175	0.00174
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00159	-0.00160	-0.00159
	(!A1 * !A3 * A4 * !B1 * Y)	0.00175	0.00175	0.00174
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00142	-0.00147	-0.00146
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00190	0.00191	0.00190

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00303	-0.00303	-0.00302
	(A1 * A3 * A4 * B1 * !Y)	0.00286	0.00286	0.00285
	(A1 * A3 * !B1 * Y)	-0.00303	-0.00303	-0.00302
	(A1 * A3 * !B1 * Y)	0.00291	0.00291	0.00290
	(A1 * A3 * !A4 * B1 * !Y)	-0.00303	-0.00303	-0.00302
	(A1 * A3 * !A4 * B1 * !Y)	0.00282	0.00282	0.00280
	(A1 * !A3 * A4 * B1 * !Y)	-0.00303	-0.00303	-0.00302
	(A1 * !A3 * A4 * B1 * !Y)	0.00276	0.00277	0.00275
	(A1 * !A3 * A4 * !B1 * Y)	-0.00302	-0.00303	-0.00302
	(A1 * !A3 * A4 * !B1 * Y)	0.00293	0.00293	0.00292
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00302	-0.00303	-0.00302
	(A1 * !A3 * !A4 * B1 * !Y)	0.00271	0.00272	0.00271
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00303	-0.00303	-0.00302
	(A1 * !A3 * !A4 * !B1 * Y)	0.00357	0.00356	0.00353
	(!A1 * A3 * A4 * B1 * !Y)	-0.00303	-0.00302	-0.00302
	(!A1 * A3 * A4 * B1 * !Y)	0.00354	0.00355	0.00353
	(!A1 * A3 * !B1 * Y)	-0.00303	-0.00302	-0.00302
	(!A1 * A3 * !B1 * Y)	0.00354	0.00356	0.00354
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00303	-0.00302	-0.00302
	(!A1 * A3 * !A4 * B1 * !Y)	0.00354	0.00355	0.00353
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00302	-0.00303	-0.00302
	(!A1 * !A3 * A4 * B1 * !Y)	0.00335	0.00335	0.00334
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00302	-0.00303	-0.00302
	(!A1 * !A3 * A4 * !B1 * Y)	0.00335	0.00336	0.00334
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00268	-0.00281	-0.00277
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00369	0.00373	0.00371

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A2 * A4 * B1 * !Y)**	0.00081	0.00081	0.00081
	(A2 * A4 * B1 * !Y)	-0.00068	-0.00068	-0.00068
	(A2 * A4 * !B1 * Y)	0.00078	0.00078	0.00078
	(A2 * A4 * !B1 * Y)	-0.00076	-0.00076	-0.00075
	(A2 * !A4 * B1 * !Y)	0.00082	0.00081	0.00081
	(A2 * !A4 * B1 * !Y)	-0.00066	-0.00066	-0.00066
	(A2 * !A4 * !B1 * Y)	0.00078	0.00079	0.00078
	(A2 * !A4 * !B1 * Y)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * A4 * B1 * !Y)	0.00081	0.00081	0.00081
	(A1 * !A2 * A4 * B1 * !Y)	-0.00069	-0.00070	-0.00070
	(A1 * !A2 * A4 * !B1 * Y)	0.00079	0.00078	0.00078
	(A1 * !A2 * A4 * !B1 * Y)	-0.00076	-0.00076	-0.00075
	(A1 * !A2 * !A4 * B1 * !Y)	0.00081	0.00082	0.00081
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00065	-0.00066	-0.00066
	(A1 * !A2 * !A4 * !B1 * Y)	0.00077	0.00078	0.00078
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00084	-0.00085	-0.00085
	(!A1 * !A2 * A4 * B1 * !Y)	0.00082	0.00082	0.00081
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * A4 * !B1 * Y)	0.00079	0.00079	0.00078
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00090	-0.00090	-0.00090
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00071	0.00072	0.00071
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00093	-0.00093	-0.00093

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00151	0.00152	0.00151
	(A2 * A4 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(A2 * A4 * !B1 * Y)	0.00152	0.00151	0.00150
	(A2 * A4 * !B1 * Y)	-0.00148	-0.00150	-0.00149
	(A2 * !A4 * B1 * !Y)	0.00151	0.00152	0.00151
	(A2 * !A4 * B1 * !Y)	-0.00134	-0.00135	-0.00135
	(A2 * !A4 * !B1 * Y)	0.00152	0.00152	0.00150
	(A2 * !A4 * !B1 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * A4 * B1 * !Y)	0.00152	0.00152	0.00151
	(A1 * !A2 * A4 * B1 * !Y)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * A4 * !B1 * Y)	0.00152	0.00150	0.00150
	(A1 * !A2 * A4 * !B1 * Y)	-0.00148	-0.00150	-0.00149
	(A1 * !A2 * !A4 * B1 * !Y)	0.00151	0.00152	0.00151
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00134	-0.00134	-0.00134
	(A1 * !A2 * !A4 * !B1 * Y)	0.00150	0.00150	0.00150
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00168	-0.00169	-0.00168
	(!A1 * !A2 * A4 * B1 * !Y)	0.00153	0.00153	0.00151
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00176	-0.00178	-0.00176
	(!A1 * !A2 * A4 * !B1 * Y)	0.00152	0.00152	0.00150
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00138	0.00139	0.00138
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00185	-0.00185	-0.00184

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00309	0.00311	0.00309
	(A2 * A4 * B1 * !Y)	-0.00278	-0.00279	-0.00278
	(A2 * A4 * !B1 * Y)	0.00313	0.00313	0.00309
	(A2 * A4 * !B1 * Y)	-0.00298	-0.00298	-0.00296
	(A2 * !A4 * B1 * !Y)	0.00310	0.00311	0.00309
	(A2 * !A4 * B1 * !Y)	-0.00272	-0.00273	-0.00272
	(A2 * !A4 * !B1 * Y)	0.00313	0.00312	0.00308
	(A2 * !A4 * !B1 * Y)	-0.00357	-0.00359	-0.00357
	(A1 * !A2 * A4 * B1 * !Y)	0.00308	0.00310	0.00309
	(A1 * !A2 * A4 * B1 * !Y)	-0.00285	-0.00286	-0.00285
	(A1 * !A2 * A4 * !B1 * Y)	0.00313	0.00310	0.00308
	(A1 * !A2 * A4 * !B1 * Y)	-0.00297	-0.00299	-0.00297
	(A1 * !A2 * !A4 * B1 * !Y)	0.00310	0.00311	0.00309
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00271	-0.00272	-0.00271
	(A1 * !A2 * !A4 * !B1 * Y)	0.00312	0.00312	0.00308
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00337	-0.00337	-0.00335
	(!A1 * !A2 * A4 * B1 * !Y)	0.00313	0.00313	0.00309
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00362	-0.00365	-0.00363
	(!A1 * !A2 * A4 * !B1 * Y)	0.00312	0.00312	0.00308
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00362	-0.00366	-0.00364
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00281	0.00284	0.00282
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00375	-0.00378	-0.00377

Passive power(pJ) for A3 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A2 * A4 * B1 * !Y)**	-0.00080	-0.00081	-0.00081
	(A2 * A4 * B1 * !Y)	0.00068	0.00068	0.00068
	(A2 * A4 * !B1 * Y)	-0.00078	-0.00078	-0.00077
	(A2 * A4 * !B1 * Y)	0.00076	0.00076	0.00075
	(A2 * !A4 * B1 * !Y)	-0.00080	-0.00081	-0.00080
	(A2 * !A4 * B1 * !Y)	0.00067	0.00067	0.00067
	(A2 * !A4 * !B1 * Y)	-0.00078	-0.00078	-0.00077
	(A2 * !A4 * !B1 * Y)	0.00091	0.00091	0.00090
	(A1 * !A2 * A4 * B1 * !Y)	-0.00080	-0.00081	-0.00081
	(A1 * !A2 * A4 * B1 * !Y)	0.00069	0.00070	0.00070
	(A1 * !A2 * A4 * !B1 * Y)	-0.00078	-0.00078	-0.00077
	(A1 * !A2 * A4 * !B1 * Y)	0.00076	0.00076	0.00075
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00078	-0.00078	-0.00079
	(A1 * !A2 * !A4 * B1 * !Y)	0.00067	0.00067	0.00067
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * !A4 * !B1 * Y)	0.00085	0.00085	0.00085
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00081	-0.00081	-0.00081
	(!A1 * !A2 * A4 * B1 * !Y)	0.00087	0.00087	0.00087
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * A4 * !B1 * Y)	0.00090	0.00090	0.00090
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00070	-0.00072	-0.00071
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00094	0.00094	0.00093

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00150	-0.00151	-0.00150
	(A2 * A4 * B1 * !Y)	0.00138	0.00139	0.00138
	(A2 * A4 * !B1 * Y)	-0.00149	-0.00150	-0.00150
	(A2 * A4 * !B1 * Y)	0.00148	0.00150	0.00149
	(A2 * !A4 * B1 * !Y)	-0.00150	-0.00151	-0.00150
	(A2 * !A4 * B1 * !Y)	0.00137	0.00137	0.00137
	(A2 * !A4 * !B1 * Y)	-0.00150	-0.00150	-0.00150
	(A2 * !A4 * !B1 * Y)	0.00179	0.00179	0.00178
	(A1 * !A2 * A4 * B1 * !Y)	-0.00151	-0.00151	-0.00151
	(A1 * !A2 * A4 * B1 * !Y)	0.00141	0.00142	0.00141
	(A1 * !A2 * A4 * !B1 * Y)	-0.00149	-0.00150	-0.00150
	(A1 * !A2 * A4 * !B1 * Y)	0.00148	0.00150	0.00149
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00145	-0.00146	-0.00146
	(A1 * !A2 * !A4 * B1 * !Y)	0.00137	0.00137	0.00138
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00150	-0.00150	-0.00150
	(A1 * !A2 * !A4 * !B1 * Y)	0.00169	0.00169	0.00168
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00150	-0.00151	-0.00151
	(!A1 * !A2 * A4 * B1 * !Y)	0.00176	0.00178	0.00176
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00150	-0.00150	-0.00150
	(!A1 * !A2 * A4 * !B1 * Y)	0.00179	0.00179	0.00178
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00135	-0.00139	-0.00138
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00185	0.00186	0.00185

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00308	-0.00309	-0.00308
	(A2 * A4 * B1 * !Y)	0.00278	0.00279	0.00278
	(A2 * A4 * !B1 * Y)	-0.00309	-0.00309	-0.00308
	(A2 * A4 * !B1 * Y)	0.00298	0.00298	0.00296
	(A2 * !A4 * B1 * !Y)	-0.00309	-0.00309	-0.00308
	(A2 * !A4 * B1 * !Y)	0.00275	0.00276	0.00276
	(A2 * !A4 * !B1 * Y)	-0.00309	-0.00309	-0.00308
	(A2 * !A4 * !B1 * Y)	0.00359	0.00359	0.00357
	(A1 * !A2 * A4 * B1 * !Y)	-0.00308	-0.00310	-0.00308
	(A1 * !A2 * A4 * B1 * !Y)	0.00285	0.00286	0.00285
	(A1 * !A2 * A4 * !B1 * Y)	-0.00307	-0.00309	-0.00308
	(A1 * !A2 * A4 * !B1 * Y)	0.00297	0.00299	0.00297
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00298	-0.00300	-0.00300
	(A1 * !A2 * !A4 * B1 * !Y)	0.00276	0.00276	0.00277
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00309	-0.00308	-0.00307
	(A1 * !A2 * !A4 * !B1 * Y)	0.00338	0.00337	0.00335
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00308	-0.00310	-0.00309
	(!A1 * !A2 * A4 * B1 * !Y)	0.00362	0.00365	0.00363
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00306	-0.00309	-0.00308
	(!A1 * !A2 * A4 * !B1 * Y)	0.00362	0.00366	0.00364
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00273	-0.00284	-0.00282
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00375	0.00379	0.00377

Passive power(pJ) for A4 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00089	0.00090	0.00089
	(A3 * B1 * !Y)	-0.00059	-0.00059	-0.00059
	(A3 * !B1 * Y)	0.00077	0.00078	0.00077
	(A3 * !B1 * Y)	-0.00090	-0.00091	-0.00091
	(A2 * !A3 * B1 * !Y)	0.00089	0.00090	0.00089
	(A2 * !A3 * B1 * !Y)	-0.00059	-0.00059	-0.00059
	(A2 * !A3 * !B1 * Y)	0.00077	0.00077	0.00077
	(A2 * !A3 * !B1 * Y)	-0.00084	-0.00086	-0.00085
	(A1 * !A2 * !A3 * B1 * !Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * !A3 * !B1 * Y)	0.00077	0.00077	0.00077
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00084	-0.00085	-0.00084
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00094	-0.00094	-0.00093
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00173	0.00174	0.00173
	(A3 * B1 * !Y)	-0.00121	-0.00121	-0.00120
	(A3 * !B1 * Y)	0.00152	0.00154	0.00152
	(A3 * !B1 * Y)	-0.00179	-0.00181	-0.00180
	(A2 * !A3 * B1 * !Y)	0.00173	0.00174	0.00173
	(A2 * !A3 * B1 * !Y)	-0.00121	-0.00121	-0.00120
	(A2 * !A3 * !B1 * Y)	0.00152	0.00153	0.00152
	(A2 * !A3 * !B1 * Y)	-0.00168	-0.00171	-0.00170
	(A1 * !A2 * !A3 * B1 * !Y)	0.00173	0.00174	0.00173
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00121	-0.00121	-0.00120
	(A1 * !A2 * !A3 * !B1 * Y)	0.00153	0.00153	0.00152
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00167	-0.00168	-0.00167
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00140	0.00142	0.00140
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00187	-0.00188	-0.00187

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00358	0.00358	0.00356
	(A3 * B1 * !Y)	-0.00236	-0.00235	-0.00234
	(A3 * !B1 * Y)	0.00310	0.00313	0.00309
	(A3 * !B1 * Y)	-0.00356	-0.00361	-0.00359
	(A2 * !A3 * B1 * !Y)	0.00358	0.00358	0.00356
	(A2 * !A3 * B1 * !Y)	-0.00235	-0.00235	-0.00234
	(A2 * !A3 * !B1 * Y)	0.00309	0.00311	0.00309
	(A2 * !A3 * !B1 * Y)	-0.00333	-0.00338	-0.00335
	(A1 * !A2 * !A3 * B1 * !Y)	0.00357	0.00358	0.00356
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00235	-0.00235	-0.00234
	(A1 * !A2 * !A3 * !B1 * Y)	0.00310	0.00311	0.00309
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00331	-0.00333	-0.00330
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00283	0.00286	0.00282
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00370	-0.00374	-0.00371

Passive power(pJ) for A4 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00088	-0.00089	-0.00089
	(A3 * B1 * !Y)	0.00060	0.00060	0.00059
	(A3 * !B1 * Y)	-0.00077	-0.00077	-0.00077
	(A3 * !B1 * Y)	0.00091	0.00091	0.00091
	(A2 * !A3 * B1 * !Y)	-0.00080	-0.00081	-0.00088
	(A2 * !A3 * B1 * !Y)	0.00065	0.00065	0.00060
	(A2 * !A3 * !B1 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * !A3 * !B1 * Y)	0.00085	0.00086	0.00085
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00072	-0.00073	-0.00086
	(A1 * !A2 * !A3 * B1 * !Y)	0.00071	0.00070	0.00061
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !A3 * !B1 * Y)	0.00085	0.00085	0.00084
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00069	-0.00071	-0.00071
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00094	0.00094	0.00094
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00170	-0.00171	-0.00173
	(A3 * B1 * !Y)	0.00125	0.00124	0.00121
	(A3 * !B1 * Y)	-0.00152	-0.00153	-0.00152
	(A3 * !B1 * Y)	0.00180	0.00181	0.00180
	(A2 * !A3 * B1 * !Y)	-0.00152	-0.00153	-0.00170
	(A2 * !A3 * B1 * !Y)	0.00137	0.00136	0.00123
	(A2 * !A3 * !B1 * Y)	-0.00152	-0.00152	-0.00152
	(A2 * !A3 * !B1 * Y)	0.00170	0.00171	0.00170
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00133	-0.00135	-0.00164
	(A1 * !A2 * !A3 * B1 * !Y)	0.00149	0.00148	0.00126
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00152	-0.00153	-0.00152
	(A1 * !A2 * !A3 * !B1 * Y)	0.00168	0.00168	0.00167
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00137	-0.00142	-0.00140
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00188	0.00188	0.00187

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00351	-0.00351	-0.00356
	(A3 * B1 * !Y)	0.00243	0.00242	0.00236
	(A3 * !B1 * Y)	-0.00309	-0.00310	-0.00308
	(A3 * !B1 * Y)	0.00359	0.00361	0.00359
	(A2 * !A3 * B1 * !Y)	-0.00314	-0.00318	-0.00351
	(A2 * !A3 * B1 * !Y)	0.00262	0.00262	0.00238
	(A2 * !A3 * !B1 * Y)	-0.00309	-0.00311	-0.00308
	(A2 * !A3 * !B1 * Y)	0.00336	0.00338	0.00335
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00279	-0.00283	-0.00340
	(A1 * !A2 * !A3 * B1 * !Y)	0.00285	0.00284	0.00245
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00309	-0.00310	-0.00308
	(A1 * !A2 * !A3 * !B1 * Y)	0.00332	0.00333	0.00330
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00274	-0.00286	-0.00282
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00370	0.00374	0.00372

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	(!A1 * !A2 * !A3 * !A4 * Y)	0.00040	0.00039	0.00036
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00109	-0.00110	-0.00116
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00091	0.00091	0.00084
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00207	-0.00208	-0.00221
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00137	0.00137	0.00123
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00227	-0.00231	-0.00254

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00035	-0.00035	-0.00034
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00117	0.00118	0.00117
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00222	0.00224	0.00222
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00119	-0.00119	-0.00118
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00256	0.00257	0.00255

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	X
0	0	0	0	x	0
0	0	x	1	0	0
0	0	x	1	1	1
0	x	1	x	0	0
0	x	1	x	1	1
x	1	x	x	0	0
x	1	x	x	1	1
1	x	x	x	0	0
1	x	x	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41a_1	14.38560
sky130_fd_sc_hs__o41a_2	15.98400
sky130_fd_sc_hs__o41a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__o41a_1	0.00226	0.00236	0.00237	0.00243	0.00225	0.18701
sky130_fd_sc_hs__o41a_2	0.00241	0.00253	0.00261	0.00251	0.00259	0.37715
sky130_fd_sc_hs__o41a_4	0.00428	0.00469	0.00474	0.00445	0.00418	0.71350

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.00010	0.00017
sky130_fd_sc_hs__o41a_2	0.00000	0.00014	0.00021
sky130_fd_sc_hs__o41a_4	0.00000	0.00027	0.00042

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (RR)	0.30523	1.72479	10.05270
	A2->X (RR)	0.30082	1.71241	10.00190
	A3->X (RR)	0.29265	1.69565	9.93736
	A4->X (RR)	0.27864	1.67340	9.85812
	B1->X (RR)	0.28719	1.69234	9.75689
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.28757	1.52042	10.05720
	A2->X (RR)	0.28475	1.51175	10.02060
	A3->X (RR)	0.27956	1.50033	9.97477
	A4->X (RR)	0.26260	1.47750	9.90601
	B1->X (RR)	0.27057	1.50651	9.84087
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.30633	1.40865	10.12000
	A2->X (RR)	0.30233	1.39800	10.07630
	A3->X (RR)	0.28604	1.37880	10.01780
	A4->X (RR)	0.28013	1.35978	9.94237
	B1->X (RR)	0.28746	1.40171	9.90808

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	2.48311	3.67388	9.89141
	A2->X (FF)	2.41799	3.57057	9.80851
	A3->X (FF)	2.25446	3.36667	9.67650
	A4->X (FF)	1.98457	2.99744	8.87942
	B1->X (FF)	0.36934	1.39791	7.14033
sky130_fd_sc_hs__o41a_2	A1->X (FF)	3.21980	4.48579	10.88890
	A2->X (FF)	3.16637	4.39353	10.84060
	A3->X (FF)	3.01782	4.20080	10.71780
	A4->X (FF)	2.69471	3.78231	9.83113
	B1->X (FF)	0.44358	1.48209	7.56569
sky130_fd_sc_hs__o41a_4	A1->X (FF)	3.04510	4.24639	10.69330
	A2->X (FF)	2.97811	4.14528	10.60610
	A3->X (FF)	2.77322	3.90265	10.42670
	A4->X (FF)	2.46103	3.48094	9.55835
	B1->X (FF)	0.46321	1.46020	7.48432

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.00625	0.00625	0.00621
	A1	0.00280	0.00280	0.00277
	A2	0.00568	0.00571	0.00564
	A2	0.00253	0.00254	0.00248
	A3	0.00508	0.00511	0.00504
	A3	0.00219	0.00222	0.00215
	A4	0.00452	0.00452	0.00445
	A4	0.00186	0.00186	0.00179
	B1	0.00561	0.00559	0.00553
	B1	0.00300	0.00298	0.00294
sky130_fd_sc_hs__o41a_2	A1	0.00789	0.00798	0.00800
	A1	0.00414	0.00423	0.00427
	A2	0.00738	0.00749	0.00748
	A2	0.00391	0.00400	0.00400
	A3	0.00682	0.00694	0.00691
	A3	0.00356	0.00368	0.00365
	A4	0.00614	0.00623	0.00622
	A4	0.00318	0.00327	0.00326
	B1	0.00716	0.00720	0.00718
	B1	0.00424	0.00429	0.00427

sky130_fd_sc_hs__o41a_4	**A1**	0.01506	0.01521	0.01527
	A1	0.00829	0.00845	0.00853
	A2	0.01434	0.01454	0.01456
	A2	0.00776	0.00794	0.00798
	A3	0.01300	0.01323	0.01324
	A3	0.00699	0.00720	0.00723
	A4	0.01141	0.01160	0.01161
	A4	0.00619	0.00639	0.00641
	B1	0.01370	0.01381	0.01383
	B1	0.00861	0.00872	0.00877

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00232	0.00236	0.00211
	A1	0.00576	0.00579	0.00578
	A2	0.00234	0.00238	0.00175
	A2	0.00546	0.00549	0.00547
	A3	0.00235	0.00239	0.00200
	A3	0.00516	0.00519	0.00517
	A4	0.00233	0.00234	0.00232
	A4	0.00488	0.00490	0.00485
	B1	0.00174	0.00161	0.00166
	B1	0.00444	0.00436	0.00432

sky130_fd_sc_hs__o41a_2	**A1**	0.00353	0.00364	0.00373
	A1	0.00725	0.00735	0.00743
	A2	0.00355	0.00366	0.00376
	A2	0.00697	0.00707	0.00715
	A3	0.00354	0.00365	0.00373
	A3	0.00671	0.00681	0.00687
	A4	0.00353	0.00362	0.00368
	A4	0.00638	0.00646	0.00649
	B1	0.00295	0.00294	0.00375
	B1	0.00597	0.00598	0.00595
sky130_fd_sc_hs__o41a_4	**A1**	0.00692	0.00717	0.00744
	A1	0.01371	0.01394	0.01417
	A2	0.00657	0.00683	0.00707
	A2	0.01311	0.01335	0.01355
	A3	0.00662	0.00688	0.00703
	A3	0.01249	0.01273	0.01292
	A4	0.00690	0.00711	0.00729
	A4	0.01191	0.01211	0.01223
	B1	0.00593	0.00593	0.00804
	B1	0.01124	0.01130	0.01133

Passive power(pJ) for A1 rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A2 * A4 * B1 * X)**	0.00070	0.00070	0.00070
	(A2 * A4 * B1 * X)	-0.00091	-0.00093	-0.00092
	(A2 * A3 * !A4 * B1 * X)	0.00070	0.00070	0.00070
	(A2 * A3 * !A4 * B1 * X)	-0.00091	-0.00093	-0.00092
	(A2 * !B1 * !X)	0.00070	0.00070	0.00070
	(A2 * !B1 * !X)	-0.00091	-0.00093	-0.00092
	(A2 * !A3 * !A4 * B1 * X)	0.00070	0.00070	0.00070
	(A2 * !A3 * !A4 * B1 * X)	-0.00091	-0.00093	-0.00092
	(!A2 * A3 * A4 * B1 * X)	0.00070	0.00070	0.00070
	(!A2 * A3 * A4 * B1 * X)	-0.00087	-0.00088	-0.00088
	(!A2 * A3 * !B1 * !X)	0.00070	0.00070	0.00070
	(!A2 * A3 * !B1 * !X)	-0.00087	-0.00088	-0.00088
	(!A2 * A3 * !A4 * B1 * X)	0.00070	0.00070	0.00070
	(!A2 * A3 * !A4 * B1 * X)	-0.00087	-0.00088	-0.00088
	(!A2 * !A3 * A4 * B1 * X)	0.00070	0.00070	0.00070
	(!A2 * !A3 * A4 * B1 * X)	-0.00086	-0.00087	-0.00087
	(!A2 * !A3 * A4 * !B1 * !X)	0.00070	0.00070	0.00070
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00086	-0.00087	-0.00087
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00065	0.00065	0.00064
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00094	-0.00095	-0.00094

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00081	0.00081	0.00080
	(A2 * A4 * B1 * X)	-0.00089	-0.00091	-0.00090
	(A2 * A3 * !A4 * B1 * X)	0.00081	0.00081	0.00080
	(A2 * A3 * !A4 * B1 * X)	-0.00089	-0.00091	-0.00090
	(A2 * !B1 * !X)	0.00081	0.00081	0.00080
	(A2 * !B1 * !X)	-0.00089	-0.00091	-0.00090
	(A2 * !A3 * !A4 * B1 * X)	0.00081	0.00081	0.00080
	(A2 * !A3 * !A4 * B1 * X)	-0.00089	-0.00091	-0.00090
	(!A2 * A3 * A4 * B1 * X)	0.00081	0.00081	0.00080
	(!A2 * A3 * A4 * B1 * X)	-0.00085	-0.00086	-0.00086
	(!A2 * A3 * !B1 * !X)	0.00081	0.00081	0.00080
	(!A2 * A3 * !B1 * !X)	-0.00085	-0.00086	-0.00086
	(!A2 * A3 * !A4 * B1 * X)	0.00081	0.00081	0.00080
	(!A2 * A3 * !A4 * B1 * X)	-0.00085	-0.00086	-0.00086
	(!A2 * !A3 * A4 * B1 * X)	0.00081	0.00080	0.00080
	(!A2 * !A3 * A4 * B1 * X)	-0.00084	-0.00085	-0.00085
	(!A2 * !A3 * A4 * !B1 * !X)	0.00081	0.00080	0.00080
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00084	-0.00085	-0.00085
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00074	0.00074	0.00073
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00093	-0.00093	-0.00092

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00128	0.00128	0.00127
	(A2 * A4 * B1 * X)	-0.00178	-0.00180	-0.00179
	(A2 * A3 * !A4 * B1 * X)	0.00128	0.00128	0.00127
	(A2 * A3 * !A4 * B1 * X)	-0.00177	-0.00180	-0.00179
	(A2 * !B1 * !X)	0.00128	0.00128	0.00127
	(A2 * !B1 * !X)	-0.00178	-0.00180	-0.00179
	(A2 * !A3 * !A4 * B1 * X)	0.00128	0.00128	0.00127
	(A2 * !A3 * !A4 * B1 * X)	-0.00177	-0.00180	-0.00179
	(!A2 * A3 * A4 * B1 * X)	0.00129	0.00128	0.00127
	(!A2 * A3 * A4 * B1 * X)	-0.00167	-0.00170	-0.00169
	(!A2 * A3 * !B1 * !X)	0.00128	0.00128	0.00127
	(!A2 * A3 * !B1 * !X)	-0.00168	-0.00170	-0.00169
	(!A2 * A3 * !A4 * B1 * X)	0.00128	0.00128	0.00127
	(!A2 * A3 * !A4 * B1 * X)	-0.00167	-0.00170	-0.00169
	(!A2 * !A3 * A4 * B1 * X)	0.00127	0.00128	0.00127
	(!A2 * !A3 * A4 * B1 * X)	-0.00163	-0.00168	-0.00167
	(!A2 * !A3 * A4 * !B1 * !X)	0.00126	0.00128	0.00127
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00164	-0.00168	-0.00167
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00116	0.00117	0.00116
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00185	-0.00186	-0.00186

Passive power(pJ) for A1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A2 * A4 * B1 * X)**	-0.00070	-0.00070	-0.00070
	(A2 * A4 * B1 * X)	0.00092	0.00093	0.00092
	(A2 * A3 * !A4 * B1 * X)	-0.00070	-0.00070	-0.00070
	(A2 * A3 * !A4 * B1 * X)	0.00092	0.00093	0.00092
	(A2 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(A2 * !B1 * !X)	0.00092	0.00093	0.00092
	(A2 * !A3 * !A4 * B1 * X)	-0.00070	-0.00070	-0.00070
	(A2 * !A3 * !A4 * B1 * X)	0.00093	0.00093	0.00092
	(!A2 * A3 * A4 * B1 * X)	-0.00069	-0.00070	-0.00070
	(!A2 * A3 * A4 * B1 * X)	0.00088	0.00088	0.00088
	(!A2 * A3 * !B1 * !X)	-0.00069	-0.00070	-0.00070
	(!A2 * A3 * !B1 * !X)	0.00088	0.00088	0.00088
	(!A2 * A3 * !A4 * B1 * X)	-0.00070	-0.00070	-0.00070
	(!A2 * A3 * !A4 * B1 * X)	0.00088	0.00088	0.00088
	(!A2 * !A3 * A4 * B1 * X)	-0.00070	-0.00070	-0.00070
	(!A2 * !A3 * A4 * B1 * X)	0.00087	0.00087	0.00087
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00070	-0.00070	-0.00070
	(!A2 * !A3 * A4 * !B1 * !X)	0.00087	0.00087	0.00087
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00063	-0.00065	-0.00064
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00095	0.00095	0.00095

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00081	-0.00080	-0.00080
	(A2 * A4 * B1 * X)	0.00091	0.00091	0.00090
	(A2 * A3 * !A4 * B1 * X)	-0.00080	-0.00080	-0.00080
	(A2 * A3 * !A4 * B1 * X)	0.00091	0.00091	0.00090
	(A2 * !B1 * !X)	-0.00081	-0.00080	-0.00080
	(A2 * !B1 * !X)	0.00091	0.00091	0.00090
	(A2 * !A3 * !A4 * B1 * X)	-0.00081	-0.00080	-0.00080
	(A2 * !A3 * !A4 * B1 * X)	0.00091	0.00091	0.00090
	(!A2 * A3 * A4 * B1 * X)	-0.00080	-0.00080	-0.00080
	(!A2 * A3 * A4 * B1 * X)	0.00085	0.00086	0.00086
	(!A2 * A3 * !B1 * !X)	-0.00080	-0.00080	-0.00080
	(!A2 * A3 * !B1 * !X)	0.00086	0.00086	0.00086
	(!A2 * A3 * !A4 * B1 * X)	-0.00080	-0.00080	-0.00080
	(!A2 * A3 * !A4 * B1 * X)	0.00085	0.00086	0.00086
	(!A2 * !A3 * A4 * B1 * X)	-0.00080	-0.00080	-0.00080
	(!A2 * !A3 * A4 * B1 * X)	0.00085	0.00085	0.00085
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00080	-0.00080	-0.00080
	(!A2 * !A3 * A4 * !B1 * !X)	0.00085	0.00085	0.00085
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00072	-0.00074	-0.00073
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00093	0.00093	0.00093

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00128	-0.00128	-0.00127
	(A2 * A4 * B1 * X)	0.00180	0.00180	0.00179
	(A2 * A3 * !A4 * B1 * X)	-0.00128	-0.00128	-0.00127
	(A2 * A3 * !A4 * B1 * X)	0.00180	0.00180	0.00179
	(A2 * !B1 * !X)	-0.00127	-0.00127	-0.00127
	(A2 * !B1 * !X)	0.00180	0.00180	0.00179
	(A2 * !A3 * !A4 * B1 * X)	-0.00128	-0.00128	-0.00127
	(A2 * !A3 * !A4 * B1 * X)	0.00180	0.00180	0.00179
	(!A2 * A3 * A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A2 * A3 * A4 * B1 * X)	0.00169	0.00170	0.00169
	(!A2 * A3 * !B1 * !X)	-0.00127	-0.00127	-0.00127
	(!A2 * A3 * !B1 * !X)	0.00170	0.00170	0.00169
	(!A2 * A3 * !A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A2 * A3 * !A4 * B1 * X)	0.00169	0.00170	0.00169
	(!A2 * !A3 * A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A2 * !A3 * A4 * B1 * X)	0.00167	0.00168	0.00167
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00126	-0.00127	-0.00127
	(!A2 * !A3 * A4 * !B1 * !X)	0.00168	0.00168	0.00167
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00113	-0.00117	-0.00116
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00187	0.00187	0.00186

Passive power(pJ) for A2 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A1 * A3 * A4 * B1 * X)**	0.00068	0.00067	0.00067
	(A1 * A3 * A4 * B1 * X)	-0.00074	-0.00074	-0.00073
	(A1 * A3 * !B1 * !X)	0.00067	0.00067	0.00067
	(A1 * A3 * !B1 * !X)	-0.00075	-0.00075	-0.00075
	(A1 * A3 * !A4 * B1 * X)	0.00068	0.00067	0.00067
	(A1 * A3 * !A4 * B1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !A3 * A4 * B1 * X)	0.00067	0.00067	0.00067
	(A1 * !A3 * A4 * B1 * X)	-0.00071	-0.00071	-0.00070
	(A1 * !A3 * A4 * !B1 * !X)	0.00068	0.00067	0.00067
	(A1 * !A3 * A4 * !B1 * !X)	-0.00075	-0.00075	-0.00074
	(A1 * !A3 * !A4 * B1 * X)	0.00067	0.00067	0.00067
	(A1 * !A3 * !A4 * B1 * X)	-0.00069	-0.00069	-0.00068
	(A1 * !A3 * !A4 * !B1 * !X)	0.00068	0.00068	0.00067
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00089	-0.00089	-0.00089
	(!A1 * A3 * A4 * B1 * X)	0.00067	0.00068	0.00067
	(!A1 * A3 * A4 * B1 * X)	-0.00089	-0.00090	-0.00089
	(!A1 * A3 * !B1 * !X)	0.00067	0.00068	0.00067
	(!A1 * A3 * !B1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * A3 * !A4 * B1 * X)	0.00067	0.00068	0.00067
	(!A1 * A3 * !A4 * B1 * X)	-0.00089	-0.00090	-0.00089
	(!A1 * !A3 * A4 * B1 * X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * A4 * B1 * X)	-0.00083	-0.00084	-0.00084
	(!A1 * !A3 * A4 * !B1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00083	-0.00084	-0.00084
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00063	0.00062	0.00062
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00092	-0.00092	-0.00092

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00078	0.00077	0.00077
	(A1 * A3 * A4 * B1 * X)	-0.00073	-0.00073	-0.00072
	(A1 * A3 * !B1 * !X)	0.00077	0.00077	0.00077
	(A1 * A3 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * A3 * !A4 * B1 * X)	0.00078	0.00077	0.00077
	(A1 * A3 * !A4 * B1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * !A3 * A4 * B1 * X)	0.00077	0.00077	0.00077
	(A1 * !A3 * A4 * B1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A3 * A4 * !B1 * !X)	0.00078	0.00077	0.00077
	(A1 * !A3 * A4 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(A1 * !A3 * !A4 * B1 * X)	0.00077	0.00077	0.00077
	(A1 * !A3 * !A4 * B1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * !A3 * !A4 * !B1 * !X)	0.00078	0.00078	0.00077
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * A3 * A4 * B1 * X)	0.00077	0.00077	0.00077
	(!A1 * A3 * A4 * B1 * X)	-0.00088	-0.00090	-0.00089
	(!A1 * A3 * !B1 * !X)	0.00077	0.00077	0.00077
	(!A1 * A3 * !B1 * !X)	-0.00088	-0.00090	-0.00089
	(!A1 * A3 * !A4 * B1 * X)	0.00077	0.00077	0.00077
	(!A1 * A3 * !A4 * B1 * X)	-0.00088	-0.00090	-0.00089
	(!A1 * !A3 * A4 * B1 * X)	0.00077	0.00077	0.00077
	(!A1 * !A3 * A4 * B1 * X)	-0.00083	-0.00084	-0.00084
	(!A1 * !A3 * A4 * !B1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00083	-0.00084	-0.00084
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00070	0.00071	0.00070
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00092	-0.00092	-0.00092

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00164	0.00163	0.00163
	(A1 * A3 * A4 * B1 * X)	-0.00143	-0.00142	-0.00142
	(A1 * A3 * !B1 * !X)	0.00163	0.00161	0.00161
	(A1 * A3 * !B1 * !X)	-0.00145	-0.00146	-0.00146
	(A1 * A3 * !A4 * B1 * X)	0.00162	0.00162	0.00163
	(A1 * A3 * !A4 * B1 * X)	-0.00140	-0.00139	-0.00139
	(A1 * !A3 * A4 * B1 * X)	0.00162	0.00164	0.00162
	(A1 * !A3 * A4 * B1 * X)	-0.00136	-0.00136	-0.00136
	(A1 * !A3 * A4 * !B1 * !X)	0.00163	0.00162	0.00161
	(A1 * !A3 * A4 * !B1 * !X)	-0.00145	-0.00144	-0.00145
	(A1 * !A3 * !A4 * B1 * X)	0.00164	0.00161	0.00162
	(A1 * !A3 * !A4 * B1 * X)	-0.00134	-0.00132	-0.00132
	(A1 * !A3 * !A4 * !B1 * !X)	0.00161	0.00161	0.00161
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00174	-0.00177	-0.00175
	(!A1 * A3 * A4 * B1 * X)	0.00163	0.00163	0.00162
	(!A1 * A3 * A4 * B1 * X)	-0.00172	-0.00175	-0.00174
	(!A1 * A3 * !B1 * !X)	0.00161	0.00162	0.00161
	(!A1 * A3 * !B1 * !X)	-0.00173	-0.00176	-0.00175
	(!A1 * A3 * !A4 * B1 * X)	0.00163	0.00163	0.00162
	(!A1 * A3 * !A4 * B1 * X)	-0.00171	-0.00175	-0.00174
	(!A1 * !A3 * A4 * B1 * X)	0.00162	0.00164	0.00162
	(!A1 * !A3 * A4 * B1 * X)	-0.00163	-0.00164	-0.00164
	(!A1 * !A3 * A4 * !B1 * !X)	0.00162	0.00163	0.00161
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00163	-0.00164	-0.00165
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00150	0.00152	0.00150
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00182	-0.00182	-0.00182

Passive power(pJ) for A2 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A1 * A3 * A4 * B1 * X)**	-0.00067	-0.00067	-0.00067
	(A1 * A3 * A4 * B1 * X)	0.00074	0.00074	0.00073
	(A1 * A3 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * A3 * !B1 * !X)	0.00075	0.00075	0.00075
	(A1 * A3 * !A4 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A3 * !A4 * B1 * X)	0.00072	0.00072	0.00072
	(A1 * !A3 * A4 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * A4 * B1 * X)	0.00071	0.00071	0.00070
	(A1 * !A3 * A4 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * A4 * !B1 * !X)	0.00075	0.00075	0.00074
	(A1 * !A3 * !A4 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * !A4 * B1 * X)	0.00069	0.00069	0.00069
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(A1 * !A3 * !A4 * !B1 * !X)	0.00090	0.00089	0.00089
	(!A1 * A3 * A4 * B1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * A3 * A4 * B1 * X)	0.00090	0.00090	0.00089
	(!A1 * A3 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * A3 * !B1 * !X)	0.00090	0.00090	0.00089
	(!A1 * A3 * !A4 * B1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * A3 * !A4 * B1 * X)	0.00090	0.00090	0.00089
	(!A1 * !A3 * A4 * B1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * A4 * B1 * X)	0.00084	0.00084	0.00084
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * A4 * !B1 * !X)	0.00084	0.00084	0.00084
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00092	0.00093	0.00092

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00077	-0.00077	-0.00077
	(A1 * A3 * A4 * B1 * X)	0.00073	0.00073	0.00072
	(A1 * A3 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * A3 * !B1 * !X)	0.00074	0.00074	0.00074
	(A1 * A3 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * A3 * !A4 * B1 * X)	0.00071	0.00071	0.00071
	(A1 * !A3 * A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A3 * A4 * B1 * X)	0.00070	0.00070	0.00070
	(A1 * !A3 * A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A3 * A4 * !B1 * !X)	0.00074	0.00074	0.00074
	(A1 * !A3 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A3 * !A4 * B1 * X)	0.00069	0.00069	0.00069
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(A1 * !A3 * !A4 * !B1 * !X)	0.00090	0.00090	0.00089
	(!A1 * A3 * A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * A3 * A4 * B1 * X)	0.00089	0.00090	0.00089
	(!A1 * A3 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * A3 * !B1 * !X)	0.00089	0.00090	0.00089
	(!A1 * A3 * !A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * A3 * !A4 * B1 * X)	0.00089	0.00090	0.00089
	(!A1 * !A3 * A4 * B1 * X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * A4 * B1 * X)	0.00084	0.00084	0.00084
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * A4 * !B1 * !X)	0.00084	0.00084	0.00084
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00069	-0.00071	-0.00070
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00093	0.00093	0.00092

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00163	-0.00162	-0.00162
	(A1 * A3 * A4 * B1 * X)	0.00143	0.00142	0.00142
	(A1 * A3 * !B1 * !X)	-0.00160	-0.00161	-0.00161
	(A1 * A3 * !B1 * !X)	0.00145	0.00146	0.00146
	(A1 * A3 * !A4 * B1 * X)	-0.00162	-0.00162	-0.00162
	(A1 * A3 * !A4 * B1 * X)	0.00140	0.00139	0.00139
	(A1 * !A3 * A4 * B1 * X)	-0.00162	-0.00161	-0.00161
	(A1 * !A3 * A4 * B1 * X)	0.00136	0.00136	0.00136
	(A1 * !A3 * A4 * !B1 * !X)	-0.00161	-0.00161	-0.00161
	(A1 * !A3 * A4 * !B1 * !X)	0.00145	0.00144	0.00145
	(A1 * !A3 * !A4 * B1 * X)	-0.00161	-0.00161	-0.00162
	(A1 * !A3 * !A4 * B1 * X)	0.00134	0.00134	0.00134
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00161	-0.00161	-0.00161
	(A1 * !A3 * !A4 * !B1 * !X)	0.00176	0.00177	0.00175
	(!A1 * A3 * A4 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * A3 * A4 * B1 * X)	0.00174	0.00175	0.00174
	(!A1 * A3 * !B1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * A3 * !B1 * !X)	0.00175	0.00176	0.00175
	(!A1 * A3 * !A4 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * A3 * !A4 * B1 * X)	0.00174	0.00175	0.00174
	(!A1 * !A3 * A4 * B1 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * !A3 * A4 * B1 * X)	0.00164	0.00164	0.00164
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00161	-0.00161	-0.00161
	(!A1 * !A3 * A4 * !B1 * !X)	0.00164	0.00164	0.00165
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00147	-0.00152	-0.00150
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00182	0.00182	0.00182

Passive power(pJ) for A3 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A2 * A4 * B1 * X)**	0.00067	0.00067	0.00066
	(A2 * A4 * B1 * X)	-0.00068	-0.00068	-0.00067
	(A2 * A4 * !B1 * !X)	0.00067	0.00067	0.00066
	(A2 * A4 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(A2 * !A4 * B1 * X)	0.00067	0.00067	0.00066
	(A2 * !A4 * B1 * X)	-0.00066	-0.00066	-0.00065
	(A2 * !A4 * !B1 * !X)	0.00067	0.00067	0.00066
	(A2 * !A4 * !B1 * !X)	-0.00086	-0.00087	-0.00087
	(A1 * !A2 * A4 * B1 * X)	0.00067	0.00067	0.00067
	(A1 * !A2 * A4 * B1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * A4 * !B1 * !X)	0.00067	0.00066	0.00066
	(A1 * !A2 * A4 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * !A4 * B1 * X)	0.00067	0.00067	0.00066
	(A1 * !A2 * !A4 * B1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * !A4 * !B1 * !X)	0.00066	0.00066	0.00066
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00081	-0.00081	-0.00081
	(!A1 * !A2 * A4 * B1 * X)	0.00067	0.00067	0.00067
	(!A1 * !A2 * A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * A4 * !B1 * !X)	0.00067	0.00067	0.00066
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00062	0.00062	0.00061
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00090	-0.00090	-0.00089

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00081	0.00082	0.00081
	(A2 * A4 * B1 * X)	-0.00069	-0.00069	-0.00068
	(A2 * A4 * !B1 * !X)	0.00078	0.00078	0.00078
	(A2 * A4 * !B1 * !X)	-0.00077	-0.00077	-0.00077
	(A2 * !A4 * B1 * X)	0.00082	0.00082	0.00081
	(A2 * !A4 * B1 * X)	-0.00067	-0.00067	-0.00066
	(A2 * !A4 * !B1 * !X)	0.00078	0.00079	0.00078
	(A2 * !A4 * !B1 * !X)	-0.00090	-0.00092	-0.00091
	(A1 * !A2 * A4 * B1 * X)	0.00082	0.00082	0.00081
	(A1 * !A2 * A4 * B1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * A4 * !B1 * !X)	0.00079	0.00078	0.00078
	(A1 * !A2 * A4 * !B1 * !X)	-0.00077	-0.00077	-0.00076
	(A1 * !A2 * !A4 * B1 * X)	0.00083	0.00082	0.00081
	(A1 * !A2 * !A4 * B1 * X)	-0.00067	-0.00066	-0.00066
	(A1 * !A2 * !A4 * !B1 * !X)	0.00078	0.00078	0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00085	-0.00086	-0.00086
	(!A1 * !A2 * A4 * B1 * X)	0.00082	0.00082	0.00082
	(!A1 * !A2 * A4 * B1 * X)	-0.00088	-0.00088	-0.00088
	(!A1 * !A2 * A4 * !B1 * !X)	0.00079	0.00079	0.00078
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00091	-0.00092	-0.00091
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00071	0.00072	0.00071
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00094	-0.00094	-0.00094

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00160	0.00161	0.00161
	(A2 * A4 * B1 * X)	-0.00136	-0.00135	-0.00135
	(A2 * A4 * !B1 * !X)	0.00160	0.00159	0.00159
	(A2 * A4 * !B1 * !X)	-0.00145	-0.00146	-0.00146
	(A2 * !A4 * B1 * X)	0.00162	0.00160	0.00160
	(A2 * !A4 * B1 * X)	-0.00131	-0.00130	-0.00130
	(A2 * !A4 * !B1 * !X)	0.00159	0.00158	0.00158
	(A2 * !A4 * !B1 * !X)	-0.00172	-0.00174	-0.00173
	(A1 * !A2 * A4 * B1 * X)	0.00160	0.00162	0.00160
	(A1 * !A2 * A4 * B1 * X)	-0.00139	-0.00138	-0.00138
	(A1 * !A2 * A4 * !B1 * !X)	0.00160	0.00159	0.00159
	(A1 * !A2 * A4 * !B1 * !X)	-0.00145	-0.00146	-0.00145
	(A1 * !A2 * !A4 * B1 * X)	0.00163	0.00161	0.00160
	(A1 * !A2 * !A4 * B1 * X)	-0.00131	-0.00129	-0.00130
	(A1 * !A2 * !A4 * !B1 * !X)	0.00159	0.00159	0.00158
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00163	-0.00163	-0.00163
	(!A1 * !A2 * A4 * B1 * X)	0.00160	0.00160	0.00160
	(!A1 * !A2 * A4 * B1 * X)	-0.00172	-0.00175	-0.00174
	(!A1 * !A2 * A4 * !B1 * !X)	0.00159	0.00159	0.00158
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00174	-0.00176	-0.00175
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00147	0.00149	0.00147
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00181	-0.00181	-0.00181

Passive power(pJ) for A3 falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A2 * A4 * B1 * X)**	-0.00067	-0.00067	-0.00066
	(A2 * A4 * B1 * X)	0.00068	0.00068	0.00067
	(A2 * A4 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(A2 * A4 * !B1 * !X)	0.00072	0.00072	0.00072
	(A2 * !A4 * B1 * X)	-0.00067	-0.00066	-0.00066
	(A2 * !A4 * B1 * X)	0.00067	0.00067	0.00067
	(A2 * !A4 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(A2 * !A4 * !B1 * !X)	0.00087	0.00087	0.00087
	(A1 * !A2 * A4 * B1 * X)	-0.00066	-0.00067	-0.00066
	(A1 * !A2 * A4 * B1 * X)	0.00069	0.00069	0.00069
	(A1 * !A2 * A4 * !B1 * !X)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * A4 * !B1 * !X)	0.00072	0.00072	0.00072
	(A1 * !A2 * !A4 * B1 * X)	-0.00063	-0.00064	-0.00065
	(A1 * !A2 * !A4 * B1 * X)	0.00068	0.00067	0.00066
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * !A4 * !B1 * !X)	0.00081	0.00081	0.00081
	(!A1 * !A2 * A4 * B1 * X)	-0.00066	-0.00067	-0.00066
	(!A1 * !A2 * A4 * B1 * X)	0.00087	0.00087	0.00087
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00067	-0.00067	-0.00066
	(!A1 * !A2 * A4 * !B1 * !X)	0.00087	0.00087	0.00087
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00060	-0.00062	-0.00061
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00090	0.00090	0.00090

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00081	-0.00082	-0.00081
	(A2 * A4 * B1 * X)	0.00069	0.00069	0.00068
	(A2 * A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A2 * A4 * !B1 * !X)	0.00077	0.00077	0.00077
	(A2 * !A4 * B1 * X)	-0.00082	-0.00081	-0.00081
	(A2 * !A4 * B1 * X)	0.00068	0.00068	0.00068
	(A2 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A2 * !A4 * !B1 * !X)	0.00092	0.00092	0.00091
	(A1 * !A2 * A4 * B1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * A4 * B1 * X)	0.00070	0.00070	0.00070
	(A1 * !A2 * A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * A4 * !B1 * !X)	0.00077	0.00077	0.00076
	(A1 * !A2 * !A4 * B1 * X)	-0.00078	-0.00079	-0.00080
	(A1 * !A2 * !A4 * B1 * X)	0.00067	0.00067	0.00068
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	0.00086	0.00086	0.00086
	(!A1 * !A2 * A4 * B1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * A4 * B1 * X)	0.00088	0.00088	0.00088
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * A4 * !B1 * !X)	0.00092	0.00092	0.00091
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00070	-0.00072	-0.00071
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00095	0.00095	0.00094

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00160	-0.00160	-0.00160
	(A2 * A4 * B1 * X)	0.00136	0.00135	0.00135
	(A2 * A4 * !B1 * !X)	-0.00158	-0.00158	-0.00158
	(A2 * A4 * !B1 * !X)	0.00145	0.00146	0.00146
	(A2 * !A4 * B1 * X)	-0.00161	-0.00160	-0.00160
	(A2 * !A4 * B1 * X)	0.00133	0.00132	0.00133
	(A2 * !A4 * !B1 * !X)	-0.00159	-0.00158	-0.00158
	(A2 * !A4 * !B1 * !X)	0.00174	0.00174	0.00173
	(A1 * !A2 * A4 * B1 * X)	-0.00160	-0.00160	-0.00160
	(A1 * !A2 * A4 * B1 * X)	0.00139	0.00138	0.00138
	(A1 * !A2 * A4 * !B1 * !X)	-0.00158	-0.00159	-0.00158
	(A1 * !A2 * A4 * !B1 * !X)	0.00145	0.00146	0.00145
	(A1 * !A2 * !A4 * B1 * X)	-0.00152	-0.00153	-0.00156
	(A1 * !A2 * !A4 * B1 * X)	0.00134	0.00134	0.00133
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00158	-0.00158	-0.00158
	(A1 * !A2 * !A4 * !B1 * !X)	0.00163	0.00163	0.00163
	(!A1 * !A2 * A4 * B1 * X)	-0.00160	-0.00160	-0.00159
	(!A1 * !A2 * A4 * B1 * X)	0.00174	0.00175	0.00174
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00158	-0.00159	-0.00158
	(!A1 * !A2 * A4 * !B1 * !X)	0.00175	0.00176	0.00175
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00144	-0.00148	-0.00147
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00181	0.00181	0.00181

Passive power(pJ) for A4 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00078	0.00078	0.00078
	(A3 * B1 * X)	-0.00059	-0.00059	-0.00059
	(A3 * !B1 * !X)	0.00068	0.00069	0.00068
	(A3 * !B1 * !X)	-0.00088	-0.00089	-0.00089
	(A2 * !A3 * B1 * X)	0.00078	0.00078	0.00078
	(A2 * !A3 * B1 * X)	-0.00059	-0.00059	-0.00059
	(A2 * !A3 * !B1 * !X)	0.00068	0.00068	0.00068
	(A2 * !A3 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !A3 * B1 * X)	0.00078	0.00078	0.00078
	(A1 * !A2 * !A3 * B1 * X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * !A3 * !B1 * !X)	0.00068	0.00068	0.00068
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00082	-0.00083	-0.00082
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00063	0.00063	0.00062
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00091	-0.00091	-0.00091
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00088	0.00087	0.00087
	(A3 * B1 * X)	-0.00060	-0.00059	-0.00059
	(A3 * !B1 * !X)	0.00077	0.00079	0.00078
	(A3 * !B1 * !X)	-0.00087	-0.00088	-0.00088
	(A2 * !A3 * B1 * X)	0.00088	0.00087	0.00087
	(A2 * !A3 * B1 * X)	-0.00060	-0.00059	-0.00059
	(A2 * !A3 * !B1 * !X)	0.00078	0.00079	0.00078
	(A2 * !A3 * !B1 * !X)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * !A3 * B1 * X)	0.00088	0.00087	0.00087
	(A1 * !A2 * !A3 * B1 * X)	-0.00060	-0.00059	-0.00059
	(A1 * !A2 * !A3 * !B1 * !X)	0.00078	0.00077	0.00078
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00071	0.00071	0.00071
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00091	-0.00091	-0.00091

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00147	0.00147	0.00146
	(A3 * B1 * X)	-0.00120	-0.00120	-0.00119
	(A3 * !B1 * !X)	0.00128	0.00129	0.00128
	(A3 * !B1 * !X)	-0.00175	-0.00177	-0.00177
	(A2 * !A3 * B1 * X)	0.00147	0.00147	0.00146
	(A2 * !A3 * B1 * X)	-0.00120	-0.00119	-0.00119
	(A2 * !A3 * !B1 * !X)	0.00130	0.00129	0.00128
	(A2 * !A3 * !B1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * !A3 * B1 * X)	0.00147	0.00147	0.00146
	(A1 * !A2 * !A3 * B1 * X)	-0.00120	-0.00119	-0.00119
	(A1 * !A2 * !A3 * !B1 * !X)	0.00128	0.00128	0.00128
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00117	0.00117	0.00117
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00184	-0.00184	-0.00183

Passive power(pJ) for A4 falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00077	-0.00077	-0.00078
	(A3 * B1 * X)	0.00060	0.00060	0.00059
	(A3 * !B1 * !X)	-0.00068	-0.00068	-0.00067
	(A3 * !B1 * !X)	0.00089	0.00089	0.00089
	(A2 * !A3 * B1 * X)	-0.00069	-0.00069	-0.00077
	(A2 * !A3 * B1 * X)	0.00065	0.00065	0.00060
	(A2 * !A3 * !B1 * !X)	-0.00067	-0.00068	-0.00067
	(A2 * !A3 * !B1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !A3 * B1 * X)	-0.00061	-0.00062	-0.00074
	(A1 * !A2 * !A3 * B1 * X)	0.00070	0.00070	0.00061
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00068	-0.00068	-0.00067
	(A1 * !A2 * !A3 * !B1 * !X)	0.00083	0.00083	0.00082
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00061	-0.00063	-0.00062
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00091	0.00092	0.00091
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00086	-0.00086	-0.00087
	(A3 * B1 * X)	0.00061	0.00061	0.00059
	(A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(A3 * !B1 * !X)	0.00088	0.00088	0.00088
	(A2 * !A3 * B1 * X)	-0.00078	-0.00078	-0.00086
	(A2 * !A3 * B1 * X)	0.00066	0.00066	0.00060
	(A2 * !A3 * !B1 * !X)	-0.00078	-0.00078	-0.00077
	(A2 * !A3 * !B1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !A3 * B1 * X)	-0.00069	-0.00071	-0.00084
	(A1 * !A2 * !A3 * B1 * X)	0.00070	0.00070	0.00061
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00078	-0.00077	-0.00077
	(A1 * !A2 * !A3 * !B1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00070	-0.00071	-0.00071
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00091	0.00091	0.00091

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00145	-0.00145	-0.00146
	(A3 * B1 * X)	0.00122	0.00122	0.00120
	(A3 * !B1 * !X)	-0.00128	-0.00128	-0.00128
	(A3 * !B1 * !X)	0.00177	0.00177	0.00177
	(A2 * !A3 * B1 * X)	-0.00126	-0.00127	-0.00143
	(A2 * !A3 * B1 * X)	0.00135	0.00134	0.00121
	(A2 * !A3 * !B1 * !X)	-0.00127	-0.00128	-0.00128
	(A2 * !A3 * !B1 * !X)	0.00166	0.00167	0.00166
	(A1 * !A2 * !A3 * B1 * X)	-0.00109	-0.00111	-0.00139
	(A1 * !A2 * !A3 * B1 * X)	0.00143	0.00143	0.00124
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * !A3 * !B1 * !X)	0.00165	0.00165	0.00164
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00114	-0.00117	-0.00117
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00184	0.00184	0.00183

Passive power(pJ) for B1 rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00032	0.00032	0.00029
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00089	-0.00089	-0.00095
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00036	0.00036	0.00032
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00103	-0.00103	-0.00109
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00060	0.00060	0.00054
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00167	-0.00168	-0.00178

Passive power(pJ) for B1 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00028	-0.00028	-0.00027
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00096	0.00095	0.00095
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00032	-0.00031	-0.00031
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00111	0.00110	0.00110
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00053	-0.00052	-0.00051
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00181	0.00180	0.00180

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B_N	X
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2b_1	11.18880
sky130_fd_sc_hs__or2b_2	11.18880
sky130_fd_sc_hs__or2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	X
sky130_fd_sc_hs__or2b_1	0.00226	0.00214	0.18856
sky130_fd_sc_hs__or2b_2	0.00235	0.00206	0.35534
sky130_fd_sc_hs__or2b_4	0.00442	0.00260	0.73749

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.00012	0.00014
sky130_fd_sc_hs__or2b_2	0.00000	0.00015	0.00018
sky130_fd_sc_hs__or2b_4	0.00000	0.00028	0.00034

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (RR)	0.23683	1.61675	9.68468
	B_N->X (FR)	0.54752	2.24400	12.80270
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.21131	1.43005	9.71647
	B_N->X (FR)	0.55841	2.07843	12.88860
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.19397	1.25471	9.75300
	B_N->X (FR)	0.64111	2.02274	13.41260

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.76208	1.85198	7.99857
	B_N->X (RF)	0.74662	1.45258	4.27342
sky130_fd_sc_hs__or2b_2	A->X (FF)	1.07243	2.19060	8.52947
	B_N->X (RF)	1.08863	1.82357	4.69376
sky130_fd_sc_hs__or2b_4	A->X (FF)	1.01049	2.09670	8.48025
	B_N->X (RF)	0.98082	1.70991	4.71477

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00385	0.00378	0.00371
	A	0.00200	0.00194	0.00187
	B_N	0.00370	0.00366	0.00358
	B_N	0.00528	0.00525	0.00516
sky130_fd_sc_hs__or2b_2	A	0.00544	0.00544	0.00540
	A	0.00345	0.00347	0.00344
	B_N	0.00520	0.00530	0.00525
	B_N	0.00677	0.00687	0.00683
sky130_fd_sc_hs__or2b_4	A	0.01013	0.01015	0.01013
	A	0.00650	0.00653	0.00652
	B_N	0.00974	0.00998	0.01008
	B_N	0.01152	0.01176	0.01188

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00219	0.00220	0.00218
	A	0.00405	0.00406	0.00403
	B_N	0.00526	0.00501	0.00510
	B_N	0.00367	0.00360	0.00352
sky130_fd_sc_hs__or2b_2	A	0.00347	0.00358	0.00359
	A	0.00545	0.00557	0.00557
	B_N	0.00694	0.00691	0.00678
	B_N	0.00537	0.00534	0.00520
sky130_fd_sc_hs__or2b_4	A	0.00687	0.00717	0.00730
	A	0.01051	0.01082	0.01088
	B_N	0.01147	0.01174	0.01170
	B_N	0.00969	0.00996	0.00993

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00068	0.00069	0.00068
	(!B_N * X)	-0.00089	-0.00089	-0.00089
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00074	0.00074	0.00074
	(!B_N * X)	-0.00094	-0.00095	-0.00094
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00143	0.00143	0.00142
	(!B_N * X)	-0.00168	-0.00171	-0.00170

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00068	-0.00068	-0.00068
	(!B_N * X)	0.00090	0.00090	0.00089
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00074	-0.00074	-0.00074
	(!B_N * X)	0.00095	0.00095	0.00094
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00143	-0.00143	-0.00142
	(!B_N * X)	0.00171	0.00171	0.00170

Passive power(pJ) for B_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00232	0.00223	0.00216
	(A * X)	0.00048	0.00038	0.00032
sky130_fd_sc_hs__or2b_2	(A * X)	0.00246	0.00237	0.00231
	(A * X)	0.00061	0.00052	0.00046
sky130_fd_sc_hs__or2b_4	(A * X)	0.00321	0.00310	0.00300
	(A * X)	0.00102	0.00090	0.00081

Passive power(pJ) for B_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00073	0.00065	0.00062
	(A * X)	0.00257	0.00249	0.00246
sky130_fd_sc_hs__or2b_2	(A * X)	0.00070	0.00062	0.00059
	(A * X)	0.00254	0.00247	0.00244
sky130_fd_sc_hs__or2b_4	(A * X)	0.00179	0.00169	0.00166
	(A * X)	0.00398	0.00388	0.00384

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	X
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2_1	7.99200
sky130_fd_sc_hs__or2_2	7.99200
sky130_fd_sc_hs__or2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__or2_1	0.00205	0.00197	0.18881
sky130_fd_sc_hs__or2_2	0.00256	0.00225	0.35294
sky130_fd_sc_hs__or2_4	0.00406	0.00354	0.72750

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.00008	0.00011
sky130_fd_sc_hs__or2_2	0.00000	0.00012	0.00015
sky130_fd_sc_hs__or2_4	0.00000	0.00022	0.00023

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (RR)	0.23134	1.61083	9.66209
	B->X (RR)	0.22685	1.58872	9.59047
sky130_fd_sc_hs__or2_2	A->X (RR)	0.21143	1.42874	9.65932
	B->X (RR)	0.20534	1.41254	9.60026
sky130_fd_sc_hs__or2_4	A->X (RR)	0.24653	1.36676	10.08630
	B->X (RR)	0.22923	1.33450	9.99334

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.80926	1.90118	8.05040
	B->X (FF)	0.73342	1.72075	7.37166
sky130_fd_sc_hs__or2_2	A->X (FF)	1.06577	2.17643	8.49633
	B->X (FF)	0.97279	1.99217	7.95063
sky130_fd_sc_hs__or2_4	A->X (FF)	0.95109	2.02919	8.39272
	B->X (FF)	0.85721	1.84322	7.83772

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00399	0.00394	0.00387
	A	0.00201	0.00201	0.00190
	B	0.00358	0.00351	0.00347
	B	0.00180	0.00174	0.00170
sky130_fd_sc_hs__or2_2	A	0.00584	0.00583	0.00576
	A	0.00341	0.00341	0.00335
	B	0.00521	0.00523	0.00519
	B	0.00314	0.00316	0.00314
sky130_fd_sc_hs__or2_4	A	0.01032	0.01035	0.01032
	A	0.00645	0.00649	0.00648
	B	0.00893	0.00898	0.00901
	B	0.00584	0.00589	0.00592

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00179	0.00181	0.00179
	A	0.00380	0.00381	0.00379
	B	0.00171	0.00172	0.00171
	B	0.00349	0.00349	0.00348
sky130_fd_sc_hs__or2_2	A	0.00286	0.00297	0.00298
	A	0.00530	0.00542	0.00542
	B	0.00282	0.00293	0.00295
	B	0.00489	0.00501	0.00501
sky130_fd_sc_hs__or2_4	A	0.00618	0.00650	0.00656
	A	0.01010	0.01042	0.01047
	B	0.00618	0.00647	0.00867
	B	0.00930	0.00959	0.00967

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00068	0.00068	0.00067
	(B * X)	-0.00065	-0.00066	-0.00065
sky130_fd_sc_hs__or2_2	(B * X)	0.00084	0.00084	0.00084
	(B * X)	-0.00078	-0.00079	-0.00078
sky130_fd_sc_hs__or2_4	(B * X)	0.00103	0.00103	0.00102
	(B * X)	-0.00159	-0.00162	-0.00160

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00068	-0.00067	-0.00067
	(B * X)	0.00066	0.00066	0.00065
sky130_fd_sc_hs__or2_2	(B * X)	-0.00084	-0.00084	-0.00084
	(B * X)	0.00079	0.00079	0.00078
sky130_fd_sc_hs__or2_4	(B * X)	-0.00102	-0.00103	-0.00102
	(B * X)	0.00161	0.00162	0.00160

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00074	0.00073	0.00073
	(A * X)	-0.00043	-0.00043	-0.00043
sky130_fd_sc_hs__or2_2	(A * X)	0.00079	0.00079	0.00079
	(A * X)	-0.00054	-0.00053	-0.00053
sky130_fd_sc_hs__or2_4	(A * X)	0.00093	0.00094	0.00093
	(A * X)	-0.00107	-0.00107	-0.00107

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00071	-0.00072	-0.00073
	(A * X)	0.00044	0.00044	0.00043
sky130_fd_sc_hs__or2_2	(A * X)	-0.00078	-0.00078	-0.00079
	(A * X)	0.00055	0.00055	0.00053
sky130_fd_sc_hs__or2_4	(A * X)	-0.00090	-0.00090	-0.00093
	(A * X)	0.00110	0.00110	0.00107

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C_N	X
0	x	0	1
0	0	1	0
x	1	1	1
1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3b_1	12.78720
sky130_fd_sc_hs__or3b_2	12.78720
sky130_fd_sc_hs__or3b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	X
sky130_fd_sc_hs__or3b_1	0.00220	0.00242	0.00207	0.18906
sky130_fd_sc_hs__or3b_2	0.00236	0.00229	0.00205	0.35877
sky130_fd_sc_hs__or3b_4	0.00417	0.00379	0.00242	0.73037

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.00012	0.00018
sky130_fd_sc_hs__or3b_2	0.00000	0.00016	0.00022
sky130_fd_sc_hs__or3b_4	0.00000	0.00027	0.00031

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (RR)	0.24935	1.65457	9.85056
	B->X (RR)	0.24662	1.64615	9.81118
	C_N->X (FR)	0.54937	2.24996	12.83990
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.22006	1.45924	9.87273
	B->X (RR)	0.21713	1.45057	9.83174
	C_N->X (FR)	0.55884	2.08324	12.94540
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.25406	1.38830	10.16540
	B->X (RR)	0.24769	1.37279	10.10880
	C_N->X (FR)	0.62907	2.01541	13.28800

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	1.42145	2.57243	8.74385
	B->X (FF)	1.38028	2.49310	8.75482
	C_N->X (RF)	1.30689	2.05510	4.87786
sky130_fd_sc_hs__or3b_2	A->X (FF)	1.89147	3.08916	9.41185
	B->X (FF)	1.81598	2.97976	9.41756
	C_N->X (RF)	1.75537	2.56255	5.54184
sky130_fd_sc_hs__or3b_4	A->X (FF)	1.62731	2.76211	9.10529
	B->X (FF)	1.55073	2.65255	9.09096
	C_N->X (RF)	1.44621	2.20093	5.18405

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00438	0.00433	0.00425
	A	0.00222	0.00216	0.00210
	B	0.00403	0.00399	0.00392
	B	0.00196	0.00192	0.00184
	C_N	0.00376	0.00376	0.00367
	C_N	0.00509	0.00509	0.00501
sky130_fd_sc_hs__or3b_2	A	0.00596	0.00595	0.00590
	A	0.00371	0.00371	0.00367
	B	0.00548	0.00552	0.00549
	B	0.00346	0.00351	0.00348
	C_N	0.00516	0.00530	0.00526
	C_N	0.00659	0.00674	0.00670
sky130_fd_sc_hs__or3b_4	A	0.01084	0.01089	0.01085
	A	0.00696	0.00703	0.00700
	B	0.00972	0.00984	0.00984
	B	0.00644	0.00658	0.00658
	C_N	0.00886	0.00920	0.00929
	C_N	0.01050	0.01085	0.01100

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00263	0.00266	0.00266
	A	0.00483	0.00485	0.00485
	B	0.00254	0.00256	0.00256
	B	0.00463	0.00465	0.00464
	C_N	0.00567	0.00559	0.00551
	C_N	0.00434	0.00426	0.00417
sky130_fd_sc_hs__or3b_2	A	0.00371	0.00383	0.00299
	A	0.00598	0.00610	0.00613
	B	0.00362	0.00375	0.00341
	B	0.00565	0.00578	0.00581
	C_N	0.00708	0.00709	0.00700
	C_N	0.00564	0.00565	0.00555
sky130_fd_sc_hs__or3b_4	A	0.00684	0.00717	0.00730
	A	0.01079	0.01111	0.01125
	B	0.00687	0.00722	0.00737
	B	0.01016	0.01051	0.01064
	C_N	0.01117	0.01144	0.01152
	C_N	0.00952	0.00979	0.00985

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * C_N * X)	0.00065	0.00065	0.00065
	(B * C_N * X)	-0.00080	-0.00081	-0.00080
	(B * !C_N * X)	0.00065	0.00065	0.00065
	(B * !C_N * X)	-0.00080	-0.00081	-0.00080
	(!B * !C_N * X)	0.00065	0.00065	0.00065
	(!B * !C_N * X)	-0.00076	-0.00077	-0.00077
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00077	0.00077	0.00076
	(B * C_N * X)	-0.00080	-0.00081	-0.00081
	(B * !C_N * X)	0.00073	0.00074	0.00073
	(B * !C_N * X)	-0.00084	-0.00085	-0.00084
	(!B * !C_N * X)	0.00073	0.00074	0.00073
	(!B * !C_N * X)	-0.00080	-0.00081	-0.00081
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00115	0.00115	0.00114
	(B * C_N * X)	-0.00156	-0.00159	-0.00158
	(B * !C_N * X)	0.00102	0.00102	0.00101
	(B * !C_N * X)	-0.00169	-0.00172	-0.00171
	(!B * !C_N * X)	0.00102	0.00101	0.00101
	(!B * !C_N * X)	-0.00163	-0.00166	-0.00165

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * C_N * X)	-0.00065	-0.00065	-0.00064
	(B * C_N * X)	0.00081	0.00081	0.00080
	(B * !C_N * X)	-0.00065	-0.00065	-0.00064
	(B * !C_N * X)	0.00081	0.00081	0.00080
	(!B * !C_N * X)	-0.00065	-0.00065	-0.00064
	(!B * !C_N * X)	0.00077	0.00077	0.00077
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00077	-0.00077	-0.00076
	(B * C_N * X)	0.00082	0.00081	0.00081
	(B * !C_N * X)	-0.00073	-0.00073	-0.00073
	(B * !C_N * X)	0.00085	0.00085	0.00084
	(!B * !C_N * X)	-0.00073	-0.00073	-0.00073
	(!B * !C_N * X)	0.00081	0.00081	0.00081
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00115	-0.00115	-0.00114
	(B * C_N * X)	0.00159	0.00159	0.00158
	(B * !C_N * X)	-0.00102	-0.00102	-0.00101
	(B * !C_N * X)	0.00172	0.00172	0.00171
	(!B * !C_N * X)	-0.00101	-0.00101	-0.00101
	(!B * !C_N * X)	0.00165	0.00166	0.00165

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(A * C_N * X)	0.00078	0.00079	0.00078
	(A * C_N * X)	-0.00062	-0.00062	-0.00062
	(A * !C_N * X)	0.00069	0.00069	0.00069
	(A * !C_N * X)	-0.00072	-0.00073	-0.00072
	(!A * !C_N * X)	0.00069	0.00069	0.00069
	(!A * !C_N * X)	-0.00090	-0.00091	-0.00090
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00081	0.00081	0.00080
	(A * C_N * X)	-0.00059	-0.00058	-0.00058
	(A * !C_N * X)	0.00067	0.00067	0.00066
	(A * !C_N * X)	-0.00074	-0.00074	-0.00074
	(!A * !C_N * X)	0.00066	0.00066	0.00066
	(!A * !C_N * X)	-0.00091	-0.00091	-0.00091
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00101	0.00102	0.00101
	(A * C_N * X)	-0.00121	-0.00121	-0.00121
	(A * !C_N * X)	0.00084	0.00084	0.00084
	(A * !C_N * X)	-0.00144	-0.00143	-0.00142
	(!A * !C_N * X)	0.00082	0.00082	0.00082
	(!A * !C_N * X)	-0.00179	-0.00179	-0.00180

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(A * C_N * X)	-0.00077	-0.00078	-0.00078
	(A * C_N * X)	0.00063	0.00063	0.00063
	(A * !C_N * X)	-0.00069	-0.00069	-0.00069
	(A * !C_N * X)	0.00072	0.00073	0.00072
	(!A * !C_N * X)	-0.00069	-0.00069	-0.00069
	(!A * !C_N * X)	0.00091	0.00091	0.00090
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00080	-0.00080	-0.00080
	(A * C_N * X)	0.00059	0.00059	0.00059
	(A * !C_N * X)	-0.00067	-0.00066	-0.00066
	(A * !C_N * X)	0.00074	0.00074	0.00074
	(!A * !C_N * X)	-0.00066	-0.00066	-0.00066
	(!A * !C_N * X)	0.00092	0.00092	0.00091
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00100	-0.00101	-0.00101
	(A * C_N * X)	0.00122	0.00123	0.00123
	(A * !C_N * X)	-0.00084	-0.00083	-0.00083
	(A * !C_N * X)	0.00144	0.00143	0.00142
	(!A * !C_N * X)	-0.00082	-0.00082	-0.00082
	(!A * !C_N * X)	0.00181	0.00181	0.00180

Passive power(pJ) for C_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00225	0.00216	0.00211
	(B * X)	0.00047	0.00037	0.00032
	(A * !B * X)	0.00232	0.00222	0.00215
	(A * !B * X)	0.00051	0.00041	0.00034
sky130_fd_sc_hs__or3b_2	(B * X)	0.00252	0.00243	0.00237
	(B * X)	0.00067	0.00057	0.00052
	(A * !B * X)	0.00259	0.00250	0.00241
	(A * !B * X)	0.00070	0.00061	0.00053
sky130_fd_sc_hs__or3b_4	(B * X)	0.00326	0.00316	0.00309
	(B * X)	0.00101	0.00092	0.00085
	(A * !B * X)	0.00340	0.00330	0.00318
	(A * !B * X)	0.00109	0.00099	0.00088

Passive power(pJ) for C_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00059	0.00052	0.00049
	(B * X)	0.00237	0.00230	0.00227
	(A * !B * X)	0.00059	0.00052	0.00049
	(A * !B * X)	0.00237	0.00230	0.00228
sky130_fd_sc_hs__or3b_2	(B * X)	0.00062	0.00055	0.00052
	(B * X)	0.00247	0.00240	0.00237
	(A * !B * X)	0.00062	0.00055	0.00052
	(A * !B * X)	0.00247	0.00241	0.00237
sky130_fd_sc_hs__or3b_4	(B * X)	0.00079	0.00071	0.00068
	(B * X)	0.00304	0.00297	0.00293
	(A * !B * X)	0.00079	0.00071	0.00069
	(A * !B * X)	0.00305	0.00297	0.00294

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	0
0	x	1	1
x	1	x	1
1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3_1	9.59040
sky130_fd_sc_hs__or3_2	11.18880
sky130_fd_sc_hs__or3_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__or3_1	0.00228	0.00227	0.00225	0.19023
sky130_fd_sc_hs__or3_2	0.00233	0.00237	0.00247	0.37404
sky130_fd_sc_hs__or3_4	0.00438	0.00386	0.00383	0.73035

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3_1	0.00000	0.00009	0.00014
sky130_fd_sc_hs__or3_2	0.00000	0.00012	0.00018
sky130_fd_sc_hs__or3_4	0.00000	0.00023	0.00027

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (RR)	0.24848	1.65527	9.85537
	B->X (RR)	0.24526	1.64409	9.81017
	C->X (RR)	0.24017	1.62685	9.74043
sky130_fd_sc_hs__or3_2	A->X (RR)	0.22059	1.44848	9.84898
	B->X (RR)	0.21715	1.43769	9.80500
	C->X (RR)	0.21401	1.42700	9.76112
sky130_fd_sc_hs__or3_4	A->X (RR)	0.25490	1.38802	10.17010
	B->X (RR)	0.24868	1.37499	10.11290
	C->X (RR)	0.24116	1.35560	10.04670

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	1.47543	2.63240	8.82509
	B->X (FF)	1.40343	2.52569	8.81038
	C->X (FF)	1.24572	2.26217	8.11662
sky130_fd_sc_hs__or3_2	A->X (FF)	1.87083	3.06462	9.40720
	B->X (FF)	1.79140	2.95121	9.40332
	C->X (FF)	1.65868	2.70139	8.74347
sky130_fd_sc_hs__or3_4	A->X (FF)	1.63473	2.77044	9.11179
	B->X (FF)	1.55664	2.65921	9.10190
	C->X (FF)	1.37910	2.37179	8.40090

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00501	0.00495	0.00487
	A	0.00233	0.00227	0.00219
	B	0.00446	0.00443	0.00435
	B	0.00207	0.00204	0.00197
	C	0.00394	0.00388	0.00381
	C	0.00175	0.00170	0.00162
sky130_fd_sc_hs__or3_2	A	0.00643	0.00645	0.00640
	A	0.00374	0.00375	0.00370
	B	0.00584	0.00589	0.00586
	B	0.00340	0.00345	0.00343
	C	0.00539	0.00541	0.00536
	C	0.00313	0.00315	0.00311
sky130_fd_sc_hs__or3_4	A	0.01166	0.01172	0.01168
	A	0.00697	0.00703	0.00700
	B	0.01031	0.01043	0.01043
	B	0.00642	0.00655	0.00656
	C	0.00919	0.00928	0.00928
	C	0.00572	0.00581	0.00583

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00216	0.00218	0.00218
	A	0.00489	0.00491	0.00490
	B	0.00218	0.00221	0.00221
	B	0.00459	0.00462	0.00461
	C	0.00215	0.00216	0.00215
	C	0.00433	0.00435	0.00433
sky130_fd_sc_hs__or3_2	A	0.00338	0.00352	0.00332
	A	0.00613	0.00627	0.00632
	B	0.00340	0.00355	0.00287
	B	0.00586	0.00601	0.00606
	C	0.00337	0.00348	0.00298
	C	0.00562	0.00574	0.00577
sky130_fd_sc_hs__or3_4	A	0.00606	0.00639	0.00641
	A	0.01087	0.01119	0.01134
	B	0.00632	0.00667	0.00633
	B	0.01025	0.01059	0.01074
	C	0.00617	0.00649	0.00660
	C	0.00965	0.00996	0.01007

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00071	0.00071	0.00071
	(B * C * X)	-0.00079	-0.00080	-0.00080
	(B * !C * X)	0.00071	0.00071	0.00071
	(B * !C * X)	-0.00079	-0.00080	-0.00080
	(!B * C * X)	0.00071	0.00071	0.00070
	(!B * C * X)	-0.00075	-0.00076	-0.00076
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00074	0.00075	0.00074
	(B * C * X)	-0.00080	-0.00081	-0.00081
	(B * !C * X)	0.00074	0.00075	0.00074
	(B * !C * X)	-0.00080	-0.00081	-0.00081
	(!B * C * X)	0.00074	0.00075	0.00074
	(!B * C * X)	-0.00076	-0.00077	-0.00077
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00121	0.00121	0.00120
	(B * C * X)	-0.00156	-0.00159	-0.00158
	(B * !C * X)	0.00121	0.00121	0.00120
	(B * !C * X)	-0.00156	-0.00159	-0.00158
	(!B * C * X)	0.00121	0.00121	0.00120
	(!B * C * X)	-0.00150	-0.00152	-0.00151

Passive power(pJ) for A falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00071	-0.00071	-0.00070
	(B * C * X)	0.00080	0.00080	0.00080
	(B * !C * X)	-0.00071	-0.00071	-0.00070
	(B * !C * X)	0.00080	0.00080	0.00080
	(!B * C * X)	-0.00071	-0.00071	-0.00070
	(!B * C * X)	0.00076	0.00076	0.00076
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00074	-0.00074	-0.00074
	(B * C * X)	0.00081	0.00081	0.00081
	(B * !C * X)	-0.00074	-0.00074	-0.00074
	(B * !C * X)	0.00081	0.00081	0.00081
	(!B * C * X)	-0.00074	-0.00074	-0.00074
	(!B * C * X)	0.00077	0.00077	0.00077
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00121	-0.00121	-0.00120
	(B * C * X)	0.00159	0.00159	0.00158
	(B * !C * X)	-0.00121	-0.00121	-0.00120
	(B * !C * X)	0.00159	0.00159	0.00158
	(!B * C * X)	-0.00120	-0.00120	-0.00120
	(!B * C * X)	0.00152	0.00152	0.00151

Passive power(pJ) for B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00065	0.00065	0.00065
	(A * C * X)	-0.00061	-0.00061	-0.00060
	(A * !C * X)	0.00065	0.00065	0.00065
	(A * !C * X)	-0.00059	-0.00059	-0.00058
	(!A * C * X)	0.00065	0.00065	0.00065
	(!A * C * X)	-0.00077	-0.00078	-0.00077
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00067	0.00067	0.00066
	(A * C * X)	-0.00067	-0.00067	-0.00066
	(A * !C * X)	0.00067	0.00067	0.00066
	(A * !C * X)	-0.00065	-0.00065	-0.00064
	(!A * C * X)	0.00066	0.00066	0.00066
	(!A * C * X)	-0.00083	-0.00084	-0.00084
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00084	0.00084	0.00084
	(A * C * X)	-0.00127	-0.00126	-0.00125
	(A * !C * X)	0.00084	0.00084	0.00083
	(A * !C * X)	-0.00123	-0.00122	-0.00122
	(!A * C * X)	0.00082	0.00084	0.00083
	(!A * C * X)	-0.00161	-0.00163	-0.00162

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00065	-0.00065	-0.00065
	(A * C * X)	0.00061	0.00061	0.00060
	(A * !C * X)	-0.00064	-0.00065	-0.00064
	(A * !C * X)	0.00059	0.00060	0.00059
	(!A * C * X)	-0.00065	-0.00065	-0.00065
	(!A * C * X)	0.00078	0.00078	0.00077
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00066	-0.00066	-0.00066
	(A * C * X)	0.00067	0.00067	0.00066
	(A * !C * X)	-0.00066	-0.00066	-0.00066
	(A * !C * X)	0.00066	0.00066	0.00065
	(!A * C * X)	-0.00066	-0.00066	-0.00066
	(!A * C * X)	0.00084	0.00084	0.00084
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00084	-0.00083	-0.00083
	(A * C * X)	0.00127	0.00126	0.00125
	(A * !C * X)	-0.00084	-0.00083	-0.00083
	(A * !C * X)	0.00124	0.00124	0.00124
	(!A * C * X)	-0.00082	-0.00083	-0.00082
	(!A * C * X)	0.00163	0.00163	0.00162

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00074	0.00074	0.00073
	(B * X)	-0.00055	-0.00054	-0.00054
	(A * !B * X)	0.00073	0.00074	0.00073
	(A * !B * X)	-0.00054	-0.00054	-0.00054
sky130_fd_sc_hs__or3_2	(B * X)	0.00083	0.00083	0.00083
	(B * X)	-0.00055	-0.00055	-0.00055
	(A * !B * X)	0.00083	0.00083	0.00083
	(A * !B * X)	-0.00055	-0.00055	-0.00055
sky130_fd_sc_hs__or3_4	(B * X)	0.00106	0.00107	0.00107
	(B * X)	-0.00109	-0.00109	-0.00109
	(A * !B * X)	0.00106	0.00107	0.00107
	(A * !B * X)	-0.00108	-0.00109	-0.00108

Passive power(pJ) for C falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00072	-0.00073	-0.00073
	(B * X)	0.00055	0.00055	0.00054
	(A * !B * X)	-0.00065	-0.00066	-0.00072
	(A * !B * X)	0.00060	0.00060	0.00055
sky130_fd_sc_hs__or3_2	(B * X)	-0.00082	-0.00082	-0.00083
	(B * X)	0.00056	0.00056	0.00055
	(A * !B * X)	-0.00075	-0.00075	-0.00082
	(A * !B * X)	0.00061	0.00061	0.00056
sky130_fd_sc_hs__or3_4	(B * X)	-0.00104	-0.00105	-0.00107
	(B * X)	0.00112	0.00112	0.00109
	(A * !B * X)	-0.00090	-0.00091	-0.00104
	(A * !B * X)	0.00121	0.00121	0.00110

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	X
0	x	0	x	1
0	x	1	0	1
0	0	1	1	0
x	1	1	1	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4bb_1	15.98400
sky130_fd_sc_hs__or4bb_2	15.98400
sky130_fd_sc_hs__or4bb_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	X
sky130_fd_sc_hs__or4bb_1	0.00224	0.00221	0.00212	0.00215	0.18551
sky130_fd_sc_hs__or4bb_2	0.00223	0.00237	0.00208	0.00206	0.35868
sky130_fd_sc_hs__or4bb_4	0.00344	0.00353	0.00232	0.00229	0.68334

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	0.00015	0.00024
sky130_fd_sc_hs__or4bb_2	0.00000	0.00019	0.00029
sky130_fd_sc_hs__or4bb_4	0.00000	0.00031	0.00039

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (RR)	0.25337	1.66165	9.79817
	B->X (RR)	0.25212	1.65398	9.74957
	C_N->X (FR)	0.60262	2.28906	12.82440
	D_N->X (FR)	0.56134	2.24952	12.71930
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.21991	1.47007	9.92497
	B->X (RR)	0.22112	1.46628	9.89436
	C_N->X (FR)	0.53319	2.06017	12.86430
	D_N->X (FR)	0.55810	2.07990	12.96450
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.27376	1.43487	10.22890
	B->X (RR)	0.27783	1.43287	10.19490
	C_N->X (FR)	0.69201	2.08161	13.31320
	D_N->X (FR)	0.73821	2.12304	13.42520

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	2.15520	3.35647	9.52790
	B->X (FF)	2.05744	3.23102	9.43176
	C_N->X (RF)	2.03853	2.86637	5.86443
	D_N->X (RF)	1.75342	2.55569	5.43324
sky130_fd_sc_hs__or4bb_2	A->X (FF)	2.73935	4.02226	10.36280
	B->X (FF)	2.69657	3.94079	10.33230
	C_N->X (RF)	2.64829	3.54245	6.65573
	D_N->X (RF)	2.44599	3.31601	6.39531
sky130_fd_sc_hs__or4bb_4	A->X (FF)	2.77733	4.02342	10.42660
	B->X (FF)	2.73106	3.92520	10.35440
	C_N->X (RF)	2.69456	3.54092	6.70019
	D_N->X (RF)	2.33825	3.18323	6.35250

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00456	0.00451	0.00443
	A	0.00249	0.00243	0.00235
	B	0.00415	0.00413	0.00406
	B	0.00220	0.00219	0.00212
	C_N	0.00403	0.00403	0.00396
	C_N	0.00557	0.00557	0.00550
	D_N	0.00365	0.00366	0.00359
	D_N	0.00499	0.00501	0.00493
sky130_fd_sc_hs__or4bb_2	A	0.00590	0.00594	0.00593
	A	0.00379	0.00383	0.00383
	B	0.00561	0.00566	0.00563
	B	0.00356	0.00362	0.00359
	C_N	0.00521	0.00534	0.00534
	C_N	0.00669	0.00682	0.00681
	D_N	0.00521	0.00527	0.00519
	D_N	0.00655	0.00661	0.00654
sky130_fd_sc_hs__or4bb_4	A	0.01159	0.01166	0.01171
	A	0.00795	0.00802	0.00808
	B	0.01046	0.01057	0.01057
	B	0.00728	0.00740	0.00741
	C_N	0.01053	0.01084	0.01095
	C_N	0.01191	0.01221	0.01234
	D_N	0.00972	0.00995	0.01002
	D_N	0.01112	0.01135	0.01144

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00311	0.00314	0.00295
	A	0.00523	0.00525	0.00525
	B	0.00299	0.00303	0.00270
	B	0.00494	0.00498	0.00498
	C_N	0.00642	0.00637	0.00631
	C_N	0.00488	0.00482	0.00475
	D_N	0.00584	0.00577	0.00570
	D_N	0.00449	0.00441	0.00434
sky130_fd_sc_hs__or4bb_2	A	0.00414	0.00427	0.00404
	A	0.00628	0.00641	0.00652
	B	0.00398	0.00411	0.00391
	B	0.00603	0.00616	0.00626
	C_N	0.00732	0.00736	0.00760
	C_N	0.00584	0.00587	0.00590
	D_N	0.00713	0.00712	0.00718
	D_N	0.00579	0.00578	0.00572
sky130_fd_sc_hs__or4bb_4	A	0.00882	0.00911	0.00906
	A	0.01260	0.01287	0.01314
	B	0.00891	0.00917	0.00897
	B	0.01212	0.01238	0.01263
	C_N	0.01294	0.01310	0.01324
	C_N	0.01157	0.01172	0.01187
	D_N	0.01282	0.01295	0.01302
	D_N	0.01143	0.01155	0.01151

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4bb_1	**(B * C_N * D_N * X)**	0.00067	0.00067	0.00067
	(B * C_N * D_N * X)	-0.00079	-0.00081	-0.00080
	(B * !D_N * X)	0.00067	0.00067	0.00067
	(B * !D_N * X)	-0.00080	-0.00081	-0.00080
	(B * !C_N * D_N * X)	0.00067	0.00067	0.00067
	(B * !C_N * D_N * X)	-0.00080	-0.00081	-0.00080
	(!B * C_N * !D_N * X)	0.00070	0.00069	0.00068
	(!B * C_N * !D_N * X)	-0.00075	-0.00076	-0.00076
	(!B * !C_N * D_N * X)	0.00067	0.00067	0.00067
	(!B * !C_N * D_N * X)	-0.00076	-0.00077	-0.00077
	(!B * !C_N * !D_N * X)	0.00067	0.00067	0.00067
	(!B * !C_N * !D_N * X)	-0.00076	-0.00077	-0.00077
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00072	0.00072	0.00071
	(B * C_N * D_N * X)	-0.00079	-0.00080	-0.00080
	(B * !D_N * X)	0.00072	0.00072	0.00071
	(B * !D_N * X)	-0.00079	-0.00080	-0.00080
	(B * !C_N * D_N * X)	0.00063	0.00063	0.00063
	(B * !C_N * D_N * X)	-0.00087	-0.00088	-0.00088
	(!B * C_N * !D_N * X)	0.00075	0.00074	0.00073
	(!B * C_N * !D_N * X)	-0.00074	-0.00076	-0.00075
	(!B * !C_N * D_N * X)	0.00063	0.00063	0.00063
	(!B * !C_N * D_N * X)	-0.00083	-0.00085	-0.00084
	(!B * !C_N * !D_N * X)	0.00063	0.00063	0.00063
	(!B * !C_N * !D_N * X)	-0.00083	-0.00085	-0.00084

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00089	0.00089	0.00088
	(B * C_N * D_N * X)	-0.00163	-0.00165	-0.00164
	(B * !D_N * X)	0.00089	0.00089	0.00089
	(B * !D_N * X)	-0.00162	-0.00165	-0.00164
	(B * !C_N * D_N * X)	0.00089	0.00089	0.00088
	(B * !C_N * D_N * X)	-0.00163	-0.00166	-0.00164
	(!B * C_N * !D_N * X)	0.00097	0.00094	0.00093
	(!B * C_N * !D_N * X)	-0.00153	-0.00156	-0.00155
	(!B * !C_N * D_N * X)	0.00089	0.00089	0.00088
	(!B * !C_N * D_N * X)	-0.00155	-0.00157	-0.00156
	(!B * !C_N * !D_N * X)	0.00089	0.00089	0.00088
	(!B * !C_N * !D_N * X)	-0.00155	-0.00157	-0.00156

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4bb_1	**(B * C_N * D_N * X)**	-0.00067	-0.00067	-0.00066
	(B * C_N * D_N * X)	0.00082	0.00081	0.00080
	(B * !D_N * X)	-0.00067	-0.00067	-0.00067
	(B * !D_N * X)	0.00081	0.00081	0.00080
	(B * !C_N * D_N * X)	-0.00067	-0.00067	-0.00067
	(B * !C_N * D_N * X)	0.00081	0.00081	0.00080
	(!B * C_N * !D_N * X)	-0.00070	-0.00069	-0.00068
	(!B * C_N * !D_N * X)	0.00076	0.00076	0.00076
	(!B * !C_N * D_N * X)	-0.00067	-0.00067	-0.00066
	(!B * !C_N * D_N * X)	0.00077	0.00077	0.00077
	(!B * !C_N * !D_N * X)	-0.00067	-0.00067	-0.00067
	(!B * !C_N * !D_N * X)	0.00077	0.00077	0.00077

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00071	-0.00071	-0.00071
	(B * C_N * D_N * X)	0.00080	0.00080	0.00080
	(B * !D_N * X)	-0.00071	-0.00071	-0.00071
	(B * !D_N * X)	0.00080	0.00080	0.00080
	(B * !C_N * D_N * X)	-0.00063	-0.00063	-0.00063
	(B * !C_N * D_N * X)	0.00089	0.00088	0.00088
	(!B * C_N * !D_N * X)	-0.00074	-0.00074	-0.00073
	(!B * C_N * !D_N * X)	0.00075	0.00076	0.00075
	(!B * !C_N * D_N * X)	-0.00063	-0.00063	-0.00063
	(!B * !C_N * D_N * X)	0.00084	0.00085	0.00084
	(!B * !C_N * !D_N * X)	-0.00063	-0.00063	-0.00063
	(!B * !C_N * !D_N * X)	0.00084	0.00085	0.00084
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00088	-0.00089	-0.00088
	(B * C_N * D_N * X)	0.00164	0.00165	0.00164
	(B * !D_N * X)	-0.00088	-0.00089	-0.00089
	(B * !D_N * X)	0.00164	0.00165	0.00164
	(B * !C_N * D_N * X)	-0.00088	-0.00088	-0.00088
	(B * !C_N * D_N * X)	0.00164	0.00166	0.00164
	(!B * C_N * !D_N * X)	-0.00095	-0.00094	-0.00093
	(!B * C_N * !D_N * X)	0.00154	0.00156	0.00155
	(!B * !C_N * D_N * X)	-0.00088	-0.00089	-0.00088
	(!B * !C_N * D_N * X)	0.00156	0.00157	0.00156
	(!B * !C_N * !D_N * X)	-0.00088	-0.00089	-0.00088
	(!B * !C_N * !D_N * X)	0.00156	0.00157	0.00156

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4bb_1	**(A * C_N * D_N * X)**	0.00073	0.00072	0.00072
	(A * C_N * D_N * X)	-0.00065	-0.00064	-0.00064
	(A * C_N * !D_N * X)	0.00076	0.00077	0.00077
	(A * C_N * !D_N * X)	-0.00066	-0.00067	-0.00066
	(A * !C_N * D_N * X)	0.00057	0.00057	0.00057
	(A * !C_N * D_N * X)	-0.00083	-0.00083	-0.00082
	(A * !C_N * !D_N * X)	0.00057	0.00057	0.00057
	(A * !C_N * !D_N * X)	-0.00084	-0.00084	-0.00084
	(!A * C_N * !D_N * X)	0.00078	0.00076	0.00074
	(!A * C_N * !D_N * X)	-0.00078	-0.00079	-0.00079
	(!A * !C_N * D_N * X)	0.00057	0.00057	0.00057
	(!A * !C_N * D_N * X)	-0.00098	-0.00099	-0.00099
	(!A * !C_N * !D_N * X)	0.00057	0.00057	0.00057
	(!A * !C_N * !D_N * X)	-0.00098	-0.00099	-0.00099
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00089	0.00090	0.00089
	(A * C_N * D_N * X)	-0.00059	-0.00059	-0.00059
	(A * C_N * !D_N * X)	0.00092	0.00094	0.00094
	(A * C_N * !D_N * X)	-0.00061	-0.00061	-0.00061
	(A * !C_N * D_N * X)	0.00080	0.00080	0.00079
	(A * !C_N * D_N * X)	-0.00072	-0.00072	-0.00072
	(A * !C_N * !D_N * X)	0.00078	0.00080	0.00079
	(A * !C_N * !D_N * X)	-0.00073	-0.00073	-0.00073
	(!A * C_N * !D_N * X)	0.00095	0.00093	0.00091
	(!A * C_N * !D_N * X)	-0.00073	-0.00074	-0.00073
	(!A * !C_N * D_N * X)	0.00079	0.00079	0.00079
	(!A * !C_N * D_N * X)	-0.00088	-0.00089	-0.00088
	(!A * !C_N * !D_N * X)	0.00079	0.00079	0.00079
	(!A * !C_N * !D_N * X)	-0.00088	-0.00089	-0.00088

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00091	0.00091	0.00090
	(A * C_N * D_N * X)	-0.00126	-0.00125	-0.00124
	(A * C_N * !D_N * X)	0.00097	0.00099	0.00099
	(A * C_N * !D_N * X)	-0.00130	-0.00130	-0.00129
	(A * !C_N * D_N * X)	0.00086	0.00087	0.00086
	(A * !C_N * D_N * X)	-0.00136	-0.00136	-0.00135
	(A * !C_N * !D_N * X)	0.00087	0.00087	0.00086
	(A * !C_N * !D_N * X)	-0.00139	-0.00139	-0.00138
	(!A * C_N * !D_N * X)	0.00101	0.00098	0.00094
	(!A * C_N * !D_N * X)	-0.00154	-0.00156	-0.00155
	(!A * !C_N * D_N * X)	0.00087	0.00085	0.00086
	(!A * !C_N * D_N * X)	-0.00168	-0.00168	-0.00168
	(!A * !C_N * !D_N * X)	0.00087	0.00087	0.00086
	(!A * !C_N * !D_N * X)	-0.00168	-0.00169	-0.00168

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4bb_1	**(A * C_N * D_N * X)**	-0.00071	-0.00072	-0.00072
	(A * C_N * D_N * X)	0.00065	0.00065	0.00065
	(A * C_N * !D_N * X)	-0.00074	-0.00074	-0.00074
	(A * C_N * !D_N * X)	0.00066	0.00067	0.00066
	(A * !C_N * D_N * X)	-0.00057	-0.00057	-0.00057
	(A * !C_N * D_N * X)	0.00083	0.00083	0.00082
	(A * !C_N * !D_N * X)	-0.00057	-0.00057	-0.00057
	(A * !C_N * !D_N * X)	0.00084	0.00084	0.00084
	(!A * C_N * !D_N * X)	-0.00077	-0.00076	-0.00074
	(!A * C_N * !D_N * X)	0.00079	0.00079	0.00079
	(!A * !C_N * D_N * X)	-0.00057	-0.00057	-0.00057
	(!A * !C_N * D_N * X)	0.00099	0.00099	0.00099
	(!A * !C_N * !D_N * X)	-0.00057	-0.00057	-0.00057
	(!A * !C_N * !D_N * X)	0.00099	0.00099	0.00099
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00088	-0.00089	-0.00089
	(A * C_N * D_N * X)	0.00059	0.00060	0.00059
	(A * C_N * !D_N * X)	-0.00091	-0.00091	-0.00091
	(A * C_N * !D_N * X)	0.00061	0.00061	0.00061
	(A * !C_N * D_N * X)	-0.00079	-0.00079	-0.00079
	(A * !C_N * D_N * X)	0.00072	0.00072	0.00072
	(A * !C_N * !D_N * X)	-0.00078	-0.00079	-0.00079
	(A * !C_N * !D_N * X)	0.00073	0.00073	0.00073
	(!A * C_N * !D_N * X)	-0.00094	-0.00093	-0.00091
	(!A * C_N * !D_N * X)	0.00074	0.00074	0.00073
	(!A * !C_N * D_N * X)	-0.00078	-0.00079	-0.00079
	(!A * !C_N * D_N * X)	0.00088	0.00089	0.00088
	(!A * !C_N * !D_N * X)	-0.00079	-0.00079	-0.00079
	(!A * !C_N * !D_N * X)	0.00088	0.00089	0.00088

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00089	-0.00089	-0.00090
	(A * C_N * D_N * X)	0.00128	0.00127	0.00126
	(A * C_N * !D_N * X)	-0.00095	-0.00095	-0.00094
	(A * C_N * !D_N * X)	0.00130	0.00130	0.00129
	(A * !C_N * D_N * X)	-0.00086	-0.00086	-0.00086
	(A * !C_N * D_N * X)	0.00136	0.00136	0.00135
	(A * !C_N * !D_N * X)	-0.00086	-0.00086	-0.00086
	(A * !C_N * !D_N * X)	0.00139	0.00139	0.00138
	(!A * C_N * !D_N * X)	-0.00101	-0.00098	-0.00094
	(!A * C_N * !D_N * X)	0.00156	0.00156	0.00155
	(!A * !C_N * D_N * X)	-0.00086	-0.00085	-0.00086
	(!A * !C_N * D_N * X)	0.00168	0.00169	0.00168
	(!A * !C_N * !D_N * X)	-0.00086	-0.00086	-0.00086
	(!A * !C_N * !D_N * X)	0.00168	0.00169	0.00168

Passive power(pJ) for C_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00261	0.00252	0.00246
	(B * X)	0.00070	0.00061	0.00056
	(A * !B * X) + (!A * !B * !D_N * X)	0.00264	0.00256	0.00249
	(A * !B * X) + (!A * !B * !D_N * X)	0.00071	0.00061	0.00056
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00238	0.00229	0.00223
	(B * X)	0.00055	0.00045	0.00040
	(A * !B * X) + (!A * !B * !D_N * X)	0.00242	0.00233	0.00226
	(A * !B * X) + (!A * !B * !D_N * X)	0.00055	0.00045	0.00040
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00296	0.00287	0.00281
	(B * X)	0.00101	0.00091	0.00086
	(A * !B * X) + (!A * !B * !D_N * X)	0.00306	0.00296	0.00289
	(A * !B * X) + (!A * !B * !D_N * X)	0.00103	0.00094	0.00089

Passive power(pJ) for C_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00067	0.00060	0.00057
	(B * X)	0.00258	0.00250	0.00247
	(A * !B * X) + (!A * !B * !D_N * X)	0.00067	0.00060	0.00057
	(A * !B * X) + (!A * !B * !D_N * X)	0.00258	0.00251	0.00247
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00061	0.00053	0.00050
	(B * X)	0.00243	0.00236	0.00233
	(A * !B * X) + (!A * !B * !D_N * X)	0.00061	0.00053	0.00050
	(A * !B * X) + (!A * !B * !D_N * X)	0.00244	0.00237	0.00234
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00109	0.00102	0.00099
	(B * X)	0.00304	0.00296	0.00293
	(A * !B * X) + (!A * !B * !D_N * X)	0.00109	0.00102	0.00099
	(A * !B * X) + (!A * !B * !D_N * X)	0.00304	0.00297	0.00294

Passive power(pJ) for D_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * C_N * X)	0.00229	0.00219	0.00211
	(B * C_N * X)	0.00058	0.00049	0.00042
	(A * !B * C_N * X)	0.00235	0.00226	0.00215
	(A * !B * C_N * X)	0.00062	0.00052	0.00044
	(!C_N * X)	0.00233	0.00223	0.00218
	(!C_N * X)	0.00062	0.00053	0.00048
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00232	0.00223	0.00214
	(B * C_N * X)	0.00063	0.00053	0.00046
	(A * !B * C_N * X)	0.00238	0.00228	0.00218
	(A * !B * C_N * X)	0.00066	0.00056	0.00048
	(!C_N * X)	0.00236	0.00227	0.00221
	(!C_N * X)	0.00067	0.00058	0.00052
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00338	0.00329	0.00315
	(B * C_N * X)	0.00144	0.00133	0.00121
	(A * !B * C_N * X)	0.00353	0.00343	0.00325
	(A * !B * C_N * X)	0.00154	0.00142	0.00127
	(!C_N * X)	0.00352	0.00344	0.00335
	(!C_N * X)	0.00159	0.00149	0.00141

Passive power(pJ) for D_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * C_N * X)	0.00069	0.00062	0.00059
	(B * C_N * X)	0.00238	0.00231	0.00229
	(A * !B * C_N * X)	0.00069	0.00062	0.00059
	(A * !B * C_N * X)	0.00238	0.00231	0.00229
	(!C_N * X)	0.00060	0.00053	0.00051
	(!C_N * X)	0.00230	0.00223	0.00221
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00082	0.00075	0.00072
	(B * C_N * X)	0.00250	0.00244	0.00240
	(A * !B * C_N * X)	0.00082	0.00075	0.00072
	(A * !B * C_N * X)	0.00250	0.00244	0.00240
	(!C_N * X)	0.00073	0.00066	0.00063
	(!C_N * X)	0.00242	0.00235	0.00232
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00132	0.00124	0.00122
	(B * C_N * X)	0.00327	0.00319	0.00316
	(A * !B * C_N * X)	0.00132	0.00124	0.00122
	(A * !B * C_N * X)	0.00327	0.00319	0.00316
	(!C_N * X)	0.00108	0.00100	0.00097
	(!C_N * X)	0.00302	0.00295	0.00291

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	X
0	0	x	0	1
0	0	0	1	0
0	x	1	1	1
x	1	x	x	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4b_1	14.38560
sky130_fd_sc_hs__or4b_2	14.38560
sky130_fd_sc_hs__or4b_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	X
sky130_fd_sc_hs__or4b_1	0.00229	0.00218	0.00227	0.00217	0.18320
sky130_fd_sc_hs__or4b_2	0.00237	0.00228	0.00229	0.00205	0.35885
sky130_fd_sc_hs__or4b_4	0.00340	0.00392	0.00400	0.00226	0.71433

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.00012	0.00021
sky130_fd_sc_hs__or4b_2	0.00000	0.00016	0.00025
sky130_fd_sc_hs__or4b_4	0.00000	0.00027	0.00034

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (RR)	0.26119	1.68285	9.85462
	B->X (RR)	0.25989	1.67466	9.81013
	C->X (RR)	0.25529	1.66331	9.76873
	D_N->X (FR)	0.56238	2.25685	12.72480
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.22338	1.47688	9.94719
	B->X (RR)	0.22291	1.47088	9.91331
	C->X (RR)	0.22033	1.46140	9.87589
	D_N->X (FR)	0.58210	2.10407	13.01090
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.27077	1.42037	10.13300
	B->X (RR)	0.27424	1.41610	10.09790
	C->X (RR)	0.26388	1.39597	10.02290
	D_N->X (FR)	0.66716	2.04428	13.19250

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	2.29529	3.51136	9.68744
	B->X (FF)	2.19405	3.38253	9.59978
	C->X (FF)	2.07380	3.21925	9.52178
	D_N->X (RF)	1.87015	2.70636	5.58896
sky130_fd_sc_hs__or4b_2	A->X (FF)	2.87444	4.15642	10.51830
	B->X (FF)	2.78439	4.03822	10.44960
	C->X (FF)	2.62767	3.84530	10.33370
	D_N->X (RF)	2.50026	3.39035	6.52532
sky130_fd_sc_hs__or4b_4	A->X (FF)	2.70494	3.94093	10.37070
	B->X (FF)	2.67797	3.86892	10.32620
	C->X (FF)	2.46459	3.61537	10.13560
	D_N->X (RF)	2.25307	3.08704	6.23247

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00515	0.00509	0.00500
	A	0.00258	0.00253	0.00245
	B	0.00460	0.00459	0.00452
	B	0.00238	0.00236	0.00229
	C	0.00422	0.00421	0.00411
	C	0.00209	0.00208	0.00199
	D_N	0.00394	0.00395	0.00386
	D_N	0.00518	0.00518	0.00509
sky130_fd_sc_hs__or4b_2	A	0.00662	0.00663	0.00657
	A	0.00402	0.00402	0.00397
	B	0.00609	0.00614	0.00611
	B	0.00380	0.00386	0.00388
	C	0.00567	0.00573	0.00569
	C	0.00349	0.00356	0.00351
	D_N	0.00547	0.00558	0.00555
	D_N	0.00678	0.00690	0.00688
sky130_fd_sc_hs__or4b_4	A	0.01186	0.01197	0.01202
	A	0.00760	0.00771	0.00777
	B	0.01114	0.01127	0.01126
	B	0.00708	0.00722	0.00722
	C	0.01005	0.01021	0.01018
	C	0.00630	0.00648	0.00645
	D_N	0.00943	0.00980	0.00991
	D_N	0.01063	0.01099	0.01112

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00284	0.00285	0.00285
	A	0.00546	0.00547	0.00546
	B	0.00285	0.00288	0.00210
	B	0.00511	0.00514	0.00514
	C	0.00277	0.00280	0.00281
	C	0.00491	0.00493	0.00493
	D_N	0.00586	0.00581	0.00574
	D_N	0.00463	0.00457	0.00450
sky130_fd_sc_hs__or4b_2	A	0.00378	0.00388	0.00388
	A	0.00645	0.00654	0.00660
	B	0.00379	0.00390	0.00389
	B	0.00611	0.00622	0.00629
	C	0.00367	0.00379	0.00357
	C	0.00586	0.00597	0.00605
	D_N	0.00728	0.00726	0.00745
	D_N	0.00595	0.00595	0.00588
sky130_fd_sc_hs__or4b_4	A	0.00813	0.00844	0.00819
	A	0.01257	0.01287	0.01317
	B	0.00804	0.00832	0.00807
	B	0.01221	0.01248	0.01275
	C	0.00778	0.00807	0.00747
	C	0.01154	0.01182	0.01206
	D_N	0.01221	0.01242	0.01290
	D_N	0.01103	0.01122	0.01138

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4b_1	**(B * C * D_N * X)**	0.00070	0.00070	0.00070
	(B * C * D_N * X)	-0.00078	-0.00080	-0.00079
	(B * !D_N * X)	0.00070	0.00070	0.00070
	(B * !D_N * X)	-0.00078	-0.00080	-0.00079
	(B * !C * D_N * X)	0.00070	0.00070	0.00070
	(B * !C * D_N * X)	-0.00078	-0.00080	-0.00079
	(!B * C * D_N * X)	0.00070	0.00070	0.00070
	(!B * C * D_N * X)	-0.00074	-0.00076	-0.00075
	(!B * C * !D_N * X)	0.00070	0.00070	0.00070
	(!B * C * !D_N * X)	-0.00074	-0.00076	-0.00075
	(!B * !C * !D_N * X)	0.00070	0.00070	0.00070
	(!B * !C * !D_N * X)	-0.00074	-0.00075	-0.00075
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00077	0.00077	0.00077
	(B * C * D_N * X)	-0.00080	-0.00081	-0.00080
	(B * !D_N * X)	0.00074	0.00074	0.00074
	(B * !D_N * X)	-0.00083	-0.00084	-0.00083
	(B * !C * D_N * X)	0.00077	0.00077	0.00077
	(B * !C * D_N * X)	-0.00080	-0.00081	-0.00080
	(!B * C * D_N * X)	0.00077	0.00077	0.00077
	(!B * C * D_N * X)	-0.00075	-0.00077	-0.00076
	(!B * C * !D_N * X)	0.00074	0.00074	0.00074
	(!B * C * !D_N * X)	-0.00078	-0.00080	-0.00079
	(!B * !C * !D_N * X)	0.00074	0.00074	0.00074
	(!B * !C * !D_N * X)	-0.00078	-0.00079	-0.00079

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00076	0.00076	0.00076
	(B * C * D_N * X)	-0.00162	-0.00164	-0.00163
	(B * !D_N * X)	0.00076	0.00076	0.00075
	(B * !D_N * X)	-0.00162	-0.00164	-0.00163
	(B * !C * D_N * X)	0.00076	0.00076	0.00076
	(B * !C * D_N * X)	-0.00161	-0.00164	-0.00162
	(!B * C * D_N * X)	0.00077	0.00077	0.00076
	(!B * C * D_N * X)	-0.00152	-0.00155	-0.00154
	(!B * C * !D_N * X)	0.00076	0.00076	0.00075
	(!B * C * !D_N * X)	-0.00153	-0.00155	-0.00155
	(!B * !C * !D_N * X)	0.00076	0.00076	0.00075
	(!B * !C * !D_N * X)	-0.00152	-0.00154	-0.00153

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4b_1	**(B * C * D_N * X)**	-0.00070	-0.00070	-0.00070
	(B * C * D_N * X)	0.00080	0.00080	0.00079
	(B * !D_N * X)	-0.00070	-0.00070	-0.00070
	(B * !D_N * X)	0.00080	0.00080	0.00079
	(B * !C * D_N * X)	-0.00070	-0.00070	-0.00070
	(B * !C * D_N * X)	0.00081	0.00080	0.00079
	(!B * C * D_N * X)	-0.00070	-0.00070	-0.00070
	(!B * C * D_N * X)	0.00076	0.00076	0.00075
	(!B * C * !D_N * X)	-0.00070	-0.00070	-0.00070
	(!B * C * !D_N * X)	0.00076	0.00076	0.00075
	(!B * !C * !D_N * X)	-0.00070	-0.00070	-0.00070
	(!B * !C * !D_N * X)	0.00075	0.00075	0.00075

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00077	-0.00077	-0.00077
	(B * C * D_N * X)	0.00081	0.00081	0.00080
	(B * !D_N * X)	-0.00074	-0.00074	-0.00074
	(B * !D_N * X)	0.00084	0.00084	0.00083
	(B * !C * D_N * X)	-0.00077	-0.00077	-0.00077
	(B * !C * D_N * X)	0.00081	0.00081	0.00080
	(!B * C * D_N * X)	-0.00077	-0.00077	-0.00076
	(!B * C * D_N * X)	0.00077	0.00077	0.00076
	(!B * C * !D_N * X)	-0.00074	-0.00074	-0.00074
	(!B * C * !D_N * X)	0.00079	0.00080	0.00079
	(!B * !C * !D_N * X)	-0.00074	-0.00074	-0.00074
	(!B * !C * !D_N * X)	0.00079	0.00079	0.00079
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00076	-0.00076	-0.00076
	(B * C * D_N * X)	0.00164	0.00164	0.00163
	(B * !D_N * X)	-0.00076	-0.00076	-0.00075
	(B * !D_N * X)	0.00164	0.00164	0.00163
	(B * !C * D_N * X)	-0.00076	-0.00076	-0.00076
	(B * !C * D_N * X)	0.00164	0.00164	0.00162
	(!B * C * D_N * X)	-0.00076	-0.00076	-0.00076
	(!B * C * D_N * X)	0.00154	0.00155	0.00154
	(!B * C * !D_N * X)	-0.00075	-0.00076	-0.00075
	(!B * C * !D_N * X)	0.00155	0.00155	0.00155
	(!B * !C * !D_N * X)	-0.00075	-0.00076	-0.00075
	(!B * !C * !D_N * X)	0.00153	0.00154	0.00153

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4b_1	**(A * C * D_N * X)**	0.00061	0.00061	0.00060
	(A * C * D_N * X)	-0.00061	-0.00061	-0.00061
	(A * C * !D_N * X)	0.00061	0.00061	0.00060
	(A * C * !D_N * X)	-0.00062	-0.00062	-0.00062
	(A * !C * D_N * X)	0.00061	0.00060	0.00060
	(A * !C * D_N * X)	-0.00058	-0.00058	-0.00058
	(A * !C * !D_N * X)	0.00060	0.00060	0.00060
	(A * !C * !D_N * X)	-0.00060	-0.00060	-0.00060
	(!A * C * D_N * X)	0.00060	0.00060	0.00060
	(!A * C * D_N * X)	-0.00076	-0.00077	-0.00077
	(!A * C * !D_N * X)	0.00060	0.00060	0.00060
	(!A * C * !D_N * X)	-0.00076	-0.00077	-0.00077
	(!A * !C * !D_N * X)	0.00060	0.00060	0.00060
	(!A * !C * !D_N * X)	-0.00071	-0.00073	-0.00072
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00069	0.00069	0.00068
	(A * C * D_N * X)	-0.00062	-0.00062	-0.00062
	(A * C * !D_N * X)	0.00066	0.00066	0.00066
	(A * C * !D_N * X)	-0.00066	-0.00066	-0.00065
	(A * !C * D_N * X)	0.00069	0.00068	0.00068
	(A * !C * D_N * X)	-0.00059	-0.00059	-0.00059
	(A * !C * !D_N * X)	0.00066	0.00066	0.00066
	(A * !C * !D_N * X)	-0.00064	-0.00064	-0.00063
	(!A * C * D_N * X)	0.00068	0.00068	0.00068
	(!A * C * D_N * X)	-0.00077	-0.00078	-0.00078
	(!A * C * !D_N * X)	0.00066	0.00066	0.00066
	(!A * C * !D_N * X)	-0.00079	-0.00081	-0.00080
	(!A * !C * !D_N * X)	0.00066	0.00066	0.00066
	(!A * !C * !D_N * X)	-0.00075	-0.00076	-0.00076

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	0.00097	0.00098	0.00098
	(A * C * D_N * X)	-0.00131	-0.00131	-0.00130
	(A * C * !D_N * X)	0.00097	0.00096	0.00096
	(A * C * !D_N * X)	-0.00135	-0.00135	-0.00134
	(A * !C * D_N * X)	0.00097	0.00097	0.00096
	(A * !C * D_N * X)	-0.00125	-0.00125	-0.00124
	(A * !C * !D_N * X)	0.00096	0.00096	0.00095
	(A * !C * !D_N * X)	-0.00130	-0.00130	-0.00129
	(!A * C * D_N * X)	0.00097	0.00098	0.00096
	(!A * C * D_N * X)	-0.00159	-0.00162	-0.00161
	(!A * C * !D_N * X)	0.00096	0.00097	0.00095
	(!A * C * !D_N * X)	-0.00161	-0.00164	-0.00163
	(!A * !C * !D_N * X)	0.00095	0.00096	0.00095
	(!A * !C * !D_N * X)	-0.00153	-0.00156	-0.00155

Passive power(pJ) for B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4b_1	**(A * C * D_N * X)**	-0.00060	-0.00060	-0.00060
	(A * C * D_N * X)	0.00061	0.00061	0.00061
	(A * C * !D_N * X)	-0.00060	-0.00060	-0.00060
	(A * C * !D_N * X)	0.00062	0.00062	0.00062
	(A * !C * D_N * X)	-0.00060	-0.00060	-0.00060
	(A * !C * D_N * X)	0.00059	0.00059	0.00059
	(A * !C * !D_N * X)	-0.00060	-0.00060	-0.00060
	(A * !C * !D_N * X)	0.00060	0.00060	0.00060
	(!A * C * D_N * X)	-0.00060	-0.00060	-0.00060
	(!A * C * D_N * X)	0.00077	0.00077	0.00077
	(!A * C * !D_N * X)	-0.00060	-0.00060	-0.00060
	(!A * C * !D_N * X)	0.00077	0.00077	0.00077
	(!A * !C * !D_N * X)	-0.00060	-0.00060	-0.00060
	(!A * !C * !D_N * X)	0.00072	0.00073	0.00072
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00068	-0.00068	-0.00068
	(A * C * D_N * X)	0.00062	0.00062	0.00062
	(A * C * !D_N * X)	-0.00066	-0.00066	-0.00066
	(A * C * !D_N * X)	0.00066	0.00066	0.00065
	(A * !C * D_N * X)	-0.00068	-0.00068	-0.00068
	(A * !C * D_N * X)	0.00060	0.00060	0.00059
	(A * !C * !D_N * X)	-0.00066	-0.00066	-0.00066
	(A * !C * !D_N * X)	0.00064	0.00064	0.00063
	(!A * C * D_N * X)	-0.00068	-0.00068	-0.00068
	(!A * C * D_N * X)	0.00078	0.00078	0.00078
	(!A * C * !D_N * X)	-0.00066	-0.00066	-0.00066
	(!A * C * !D_N * X)	0.00080	0.00081	0.00080
	(!A * !C * !D_N * X)	-0.00066	-0.00066	-0.00066
	(!A * !C * !D_N * X)	0.00076	0.00076	0.00076

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00097	-0.00097	-0.00097
	(A * C * D_N * X)	0.00131	0.00131	0.00130
	(A * C * !D_N * X)	-0.00096	-0.00096	-0.00095
	(A * C * !D_N * X)	0.00135	0.00135	0.00134
	(A * !C * D_N * X)	-0.00096	-0.00096	-0.00096
	(A * !C * D_N * X)	0.00127	0.00127	0.00126
	(A * !C * !D_N * X)	-0.00095	-0.00095	-0.00095
	(A * !C * !D_N * X)	0.00130	0.00130	0.00129
	(!A * C * D_N * X)	-0.00097	-0.00097	-0.00096
	(!A * C * D_N * X)	0.00162	0.00162	0.00161
	(!A * C * !D_N * X)	-0.00095	-0.00096	-0.00095
	(!A * C * !D_N * X)	0.00163	0.00164	0.00163
	(!A * !C * !D_N * X)	-0.00095	-0.00095	-0.00095
	(!A * !C * !D_N * X)	0.00155	0.00156	0.00155

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(B * D_N * X)	0.00074	0.00073	0.00073
	(B * D_N * X)	-0.00058	-0.00058	-0.00057
	(B * !D_N * X)	0.00066	0.00067	0.00066
	(B * !D_N * X)	-0.00066	-0.00066	-0.00065
	(A * !B * D_N * X)	0.00073	0.00073	0.00073
	(A * !B * D_N * X)	-0.00057	-0.00057	-0.00057
	(A * !B * !D_N * X)	0.00067	0.00067	0.00066
	(A * !B * !D_N * X)	-0.00067	-0.00068	-0.00067
	(!A * !B * !D_N * X)	0.00067	0.00067	0.00066
	(!A * !B * !D_N * X)	-0.00084	-0.00084	-0.00083

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00082	0.00081	0.00081
	(B * D_N * X)	-0.00060	-0.00059	-0.00059
	(B * !D_N * X)	0.00065	0.00065	0.00065
	(B * !D_N * X)	-0.00077	-0.00077	-0.00076
	(A * !B * D_N * X)	0.00082	0.00081	0.00081
	(A * !B * D_N * X)	-0.00060	-0.00059	-0.00059
	(A * !B * !D_N * X)	0.00065	0.00065	0.00065
	(A * !B * !D_N * X)	-0.00078	-0.00078	-0.00078
	(!A * !B * !D_N * X)	0.00066	0.00066	0.00065
	(!A * !B * !D_N * X)	-0.00094	-0.00094	-0.00094
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00121	0.00122	0.00121
	(B * D_N * X)	-0.00120	-0.00121	-0.00121
	(B * !D_N * X)	0.00097	0.00098	0.00097
	(B * !D_N * X)	-0.00150	-0.00150	-0.00149
	(A * !B * D_N * X)	0.00121	0.00122	0.00121
	(A * !B * D_N * X)	-0.00120	-0.00121	-0.00120
	(A * !B * !D_N * X)	0.00097	0.00098	0.00097
	(A * !B * !D_N * X)	-0.00153	-0.00152	-0.00152
	(!A * !B * !D_N * X)	0.00098	0.00098	0.00097
	(!A * !B * !D_N * X)	-0.00186	-0.00185	-0.00185

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4b_1	**(B * D_N * X)**	-0.00072	-0.00072	-0.00072
	(B * D_N * X)	0.00058	0.00058	0.00058
	(B * !D_N * X)	-0.00066	-0.00066	-0.00066
	(B * !D_N * X)	0.00066	0.00066	0.00065
	(A * !B * D_N * X)	-0.00069	-0.00070	-0.00072
	(A * !B * D_N * X)	0.00059	0.00059	0.00058
	(A * !B * !D_N * X)	-0.00066	-0.00066	-0.00066
	(A * !B * !D_N * X)	0.00067	0.00068	0.00067
	(!A * !B * !D_N * X)	-0.00066	-0.00066	-0.00066
	(!A * !B * !D_N * X)	0.00084	0.00084	0.00083
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00080	-0.00080	-0.00080
	(B * D_N * X)	0.00060	0.00060	0.00060
	(B * !D_N * X)	-0.00065	-0.00065	-0.00065
	(B * !D_N * X)	0.00077	0.00077	0.00076
	(A * !B * D_N * X)	-0.00077	-0.00078	-0.00079
	(A * !B * D_N * X)	0.00060	0.00060	0.00060
	(A * !B * !D_N * X)	-0.00065	-0.00065	-0.00065
	(A * !B * !D_N * X)	0.00078	0.00078	0.00078
	(!A * !B * !D_N * X)	-0.00065	-0.00065	-0.00065
	(!A * !B * !D_N * X)	0.00094	0.00094	0.00094
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00120	-0.00121	-0.00121
	(B * D_N * X)	0.00122	0.00122	0.00123
	(B * !D_N * X)	-0.00097	-0.00097	-0.00097
	(B * !D_N * X)	0.00150	0.00150	0.00149
	(A * !B * D_N * X)	-0.00112	-0.00113	-0.00118
	(A * !B * D_N * X)	0.00125	0.00125	0.00123
	(A * !B * !D_N * X)	-0.00097	-0.00097	-0.00097
	(A * !B * !D_N * X)	0.00153	0.00152	0.00152
	(!A * !B * !D_N * X)	-0.00097	-0.00097	-0.00097
	(!A * !B * !D_N * X)	0.00186	0.00185	0.00185

Passive power(pJ) for D_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00234	0.00224	0.00217
	(C * X)	0.00050	0.00040	0.00034
	(B * !C * X)	0.00241	0.00230	0.00221
	(B * !C * X)	0.00053	0.00043	0.00036
	(A * !B * !C * X)	0.00247	0.00236	0.00225
	(A * !B * !C * X)	0.00057	0.00047	0.00038
sky130_fd_sc_hs__or4b_2	(C * X)	0.00261	0.00252	0.00246
	(C * X)	0.00073	0.00063	0.00057
	(B * !C * X)	0.00268	0.00259	0.00250
	(B * !C * X)	0.00077	0.00067	0.00059
	(A * !B * !C * X)	0.00275	0.00265	0.00254
	(A * !B * !C * X)	0.00080	0.00070	0.00061
sky130_fd_sc_hs__or4b_4	(C * X)	0.00316	0.00307	0.00300
	(C * X)	0.00109	0.00099	0.00093
	(B * !C * X)	0.00332	0.00322	0.00310
	(B * !C * X)	0.00118	0.00108	0.00097
	(A * !B * !C * X)	0.00346	0.00336	0.00318
	(A * !B * !C * X)	0.00126	0.00115	0.00101

Passive power(pJ) for D_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00059	0.00051	0.00048
	(C * X)	0.00243	0.00235	0.00232
	(B * !C * X)	0.00059	0.00051	0.00048
	(B * !C * X)	0.00243	0.00235	0.00232
	(A * !B * !C * X)	0.00059	0.00051	0.00048
	(A * !B * !C * X)	0.00243	0.00235	0.00232
sky130_fd_sc_hs__or4b_2	(C * X)	0.00069	0.00062	0.00059
	(C * X)	0.00258	0.00251	0.00248
	(B * !C * X)	0.00069	0.00062	0.00059
	(B * !C * X)	0.00258	0.00251	0.00248
	(A * !B * !C * X)	0.00069	0.00062	0.00059
	(A * !B * !C * X)	0.00258	0.00251	0.00248
sky130_fd_sc_hs__or4b_4	(C * X)	0.00105	0.00098	0.00095
	(C * X)	0.00313	0.00306	0.00303
	(B * !C * X)	0.00105	0.00098	0.00095
	(B * !C * X)	0.00313	0.00306	0.00303
	(A * !B * !C * X)	0.00105	0.00098	0.00095
	(A * !B * !C * X)	0.00314	0.00306	0.00303

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D	X
0	0	0	0	0
0	0	x	1	1
0	x	1	x	1
x	1	x	x	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4_1	11.18880
sky130_fd_sc_hs__or4_2	12.78720
sky130_fd_sc_hs__or4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__or4_1	0.00227	0.00215	0.00221	0.00217	0.18578
sky130_fd_sc_hs__or4_2	0.00237	0.00234	0.00245	0.00247	0.37468
sky130_fd_sc_hs__or4_4	0.00336	0.00396	0.00407	0.00388	0.73253

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.00009	0.00017
sky130_fd_sc_hs__or4_2	0.00000	0.00012	0.00022
sky130_fd_sc_hs__or4_4	0.00000	0.00023	0.00030

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (RR)	0.25340	1.67788	9.92391
	B->X (RR)	0.25314	1.67063	9.87909
	C->X (RR)	0.24838	1.65745	9.83236
	D->X (RR)	0.24133	1.63636	9.75992
sky130_fd_sc_hs__or4_2	A->X (RR)	0.22050	1.45877	9.90949
	B->X (RR)	0.21993	1.45204	9.87076
	C->X (RR)	0.21753	1.44385	9.83661
	D->X (RR)	0.21330	1.43109	9.79123
sky130_fd_sc_hs__or4_4	A->X (RR)	0.25582	1.40163	10.24390
	B->X (RR)	0.26391	1.40550	10.21730
	C->X (RR)	0.25182	1.38060	10.13870
	D->X (RR)	0.24549	1.36335	10.08050

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	2.18295	3.38595	9.55254
	B->X (FF)	2.08967	3.26204	9.47259
	C->X (FF)	1.93785	3.07421	9.35544
	D->X (FF)	1.65893	2.69590	8.52003
sky130_fd_sc_hs__or4_2	A->X (FF)	2.78966	4.06122	10.43010
	B->X (FF)	2.69538	3.93198	10.34830
	C->X (FF)	2.57163	3.77110	10.26480
	D->X (FF)	2.31820	3.40478	9.40511
sky130_fd_sc_hs__or4_4	A->X (FF)	2.55217	3.76559	10.16840
	B->X (FF)	2.53599	3.69974	10.13030
	C->X (FF)	2.33654	3.45971	9.95468
	D->X (FF)	1.99656	3.03714	9.04728

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00559	0.00553	0.00543
	A	0.00260	0.00255	0.00246
	B	0.00505	0.00503	0.00495
	B	0.00236	0.00234	0.00227
	C	0.00453	0.00451	0.00442
	C	0.00205	0.00204	0.00195
	D	0.00399	0.00395	0.00387
	D	0.00171	0.00168	0.00160
sky130_fd_sc_hs__or4_2	A	0.00705	0.00705	0.00699
	A	0.00389	0.00390	0.00384
	B	0.00649	0.00653	0.00650
	B	0.00360	0.00365	0.00363
	C	0.00603	0.00609	0.00603
	C	0.00335	0.00342	0.00337
	D	0.00551	0.00555	0.00548
	D	0.00302	0.00306	0.00300
sky130_fd_sc_hs__or4_4	A	0.01291	0.01300	0.01305
	A	0.00789	0.00799	0.00809
	B	0.01220	0.01227	0.01216
	B	0.00735	0.00742	0.00733
	C	0.01095	0.01109	0.01104
	C	0.00660	0.00673	0.00669
	D	0.00976	0.00986	0.00985
	D	0.00589	0.00600	0.00601

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00206	0.00207	0.00207
	A	0.00513	0.00514	0.00513
	B	0.00207	0.00210	0.00182
	B	0.00481	0.00483	0.00483
	C	0.00207	0.00210	0.00211
	C	0.00457	0.00460	0.00460
	D	0.00203	0.00205	0.00203
	D	0.00430	0.00432	0.00431
sky130_fd_sc_hs__or4_2	A	0.00329	0.00340	0.00318
	A	0.00653	0.00665	0.00673
	B	0.00331	0.00344	0.00323
	B	0.00623	0.00636	0.00645
	C	0.00329	0.00341	0.00306
	C	0.00599	0.00611	0.00619
	D	0.00327	0.00337	0.00343
	D	0.00575	0.00586	0.00591
sky130_fd_sc_hs__or4_4	A	0.00645	0.00678	0.00622
	A	0.01168	0.01200	0.01228
	B	0.00637	0.00666	0.00616
	B	0.01138	0.01165	0.01190
	C	0.00640	0.00668	0.00581
	C	0.01081	0.01109	0.01131
	D	0.00621	0.00652	0.00457
	D	0.01007	0.01039	0.01055

Passive power(pJ) for A rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00069	0.00069	0.00069
	(B * D * X)	-0.00079	-0.00081	-0.00080
	(B * C * !D * X)	0.00069	0.00069	0.00068
	(B * C * !D * X)	-0.00079	-0.00081	-0.00080
	(B * !C * !D * X)	0.00069	0.00069	0.00069
	(B * !C * !D * X)	-0.00079	-0.00081	-0.00080
	(!B * C * D * X)	0.00069	0.00069	0.00068
	(!B * C * D * X)	-0.00075	-0.00077	-0.00076
	(!B * C * !D * X)	0.00069	0.00069	0.00068
	(!B * C * !D * X)	-0.00075	-0.00077	-0.00076
	(!B * !C * D * X)	0.00069	0.00068	0.00068
	(!B * !C * D * X)	-0.00075	-0.00076	-0.00075
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00076	0.00076	0.00075
	(B * D * X)	-0.00081	-0.00082	-0.00082
	(B * C * !D * X)	0.00076	0.00076	0.00075
	(B * C * !D * X)	-0.00081	-0.00082	-0.00082
	(B * !C * !D * X)	0.00076	0.00076	0.00075
	(B * !C * !D * X)	-0.00081	-0.00082	-0.00082
	(!B * C * D * X)	0.00076	0.00076	0.00075
	(!B * C * D * X)	-0.00077	-0.00078	-0.00078
	(!B * C * !D * X)	0.00076	0.00076	0.00075
	(!B * C * !D * X)	-0.00077	-0.00078	-0.00078
	(!B * !C * D * X)	0.00076	0.00075	0.00075
	(!B * !C * D * X)	-0.00076	-0.00077	-0.00077

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00076	0.00077	0.00076
	(B * D * X)	-0.00160	-0.00162	-0.00161
	(B * C * !D * X)	0.00076	0.00077	0.00076
	(B * C * !D * X)	-0.00160	-0.00162	-0.00161
	(B * !C * !D * X)	0.00076	0.00077	0.00076
	(B * !C * !D * X)	-0.00159	-0.00162	-0.00161
	(!B * C * D * X)	0.00077	0.00077	0.00076
	(!B * C * D * X)	-0.00151	-0.00153	-0.00152
	(!B * C * !D * X)	0.00077	0.00077	0.00076
	(!B * C * !D * X)	-0.00151	-0.00153	-0.00152
	(!B * !C * D * X)	0.00076	0.00076	0.00076
	(!B * !C * D * X)	-0.00149	-0.00152	-0.00151

Passive power(pJ) for A falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00069	-0.00069	-0.00068
	(B * D * X)	0.00081	0.00081	0.00080
	(B * C * !D * X)	-0.00069	-0.00069	-0.00068
	(B * C * !D * X)	0.00081	0.00081	0.00080
	(B * !C * !D * X)	-0.00069	-0.00069	-0.00068
	(B * !C * !D * X)	0.00082	0.00081	0.00080
	(!B * C * D * X)	-0.00068	-0.00069	-0.00068
	(!B * C * D * X)	0.00077	0.00077	0.00076
	(!B * C * !D * X)	-0.00068	-0.00069	-0.00068
	(!B * C * !D * X)	0.00077	0.00077	0.00076
	(!B * !C * D * X)	-0.00068	-0.00068	-0.00068
	(!B * !C * D * X)	0.00076	0.00076	0.00075

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00075	-0.00076	-0.00075
	(B * D * X)	0.00082	0.00082	0.00082
	(B * C * !D * X)	-0.00075	-0.00076	-0.00075
	(B * C * !D * X)	0.00082	0.00082	0.00082
	(B * !C * !D * X)	-0.00075	-0.00076	-0.00075
	(B * !C * !D * X)	0.00082	0.00082	0.00082
	(!B * C * D * X)	-0.00075	-0.00076	-0.00075
	(!B * C * D * X)	0.00078	0.00078	0.00078
	(!B * C * !D * X)	-0.00075	-0.00076	-0.00075
	(!B * C * !D * X)	0.00078	0.00078	0.00078
	(!B * !C * D * X)	-0.00075	-0.00075	-0.00075
	(!B * !C * D * X)	0.00077	0.00077	0.00077
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00076	-0.00076	-0.00076
	(B * D * X)	0.00162	0.00162	0.00161
	(B * C * !D * X)	-0.00076	-0.00076	-0.00076
	(B * C * !D * X)	0.00162	0.00162	0.00161
	(B * !C * !D * X)	-0.00076	-0.00076	-0.00076
	(B * !C * !D * X)	0.00161	0.00162	0.00161
	(!B * C * D * X)	-0.00076	-0.00076	-0.00076
	(!B * C * D * X)	0.00153	0.00153	0.00152
	(!B * C * !D * X)	-0.00076	-0.00076	-0.00076
	(!B * C * !D * X)	0.00153	0.00153	0.00152
	(!B * !C * D * X)	-0.00076	-0.00076	-0.00076
	(!B * !C * D * X)	0.00151	0.00152	0.00151

Passive power(pJ) for B rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4_1	**(A * C * D * X)**	0.00061	0.00061	0.00060
	(A * C * D * X)	-0.00065	-0.00065	-0.00064
	(A * C * !D * X)	0.00061	0.00060	0.00060
	(A * C * !D * X)	-0.00064	-0.00064	-0.00063
	(A * !C * D * X)	0.00060	0.00060	0.00060
	(A * !C * D * X)	-0.00062	-0.00062	-0.00062
	(A * !C * !D * X)	0.00060	0.00060	0.00060
	(A * !C * !D * X)	-0.00060	-0.00060	-0.00060
	(!A * C * D * X)	0.00060	0.00061	0.00060
	(!A * C * D * X)	-0.00078	-0.00079	-0.00079
	(!A * C * !D * X)	0.00060	0.00061	0.00060
	(!A * C * !D * X)	-0.00078	-0.00079	-0.00079
	(!A * !C * D * X)	0.00060	0.00060	0.00060
	(!A * !C * D * X)	-0.00073	-0.00074	-0.00074
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00067	0.00067	0.00067
	(A * C * D * X)	-0.00069	-0.00069	-0.00068
	(A * C * !D * X)	0.00067	0.00067	0.00067
	(A * C * !D * X)	-0.00068	-0.00068	-0.00067
	(A * !C * D * X)	0.00067	0.00067	0.00067
	(A * !C * D * X)	-0.00066	-0.00066	-0.00066
	(A * !C * !D * X)	0.00067	0.00067	0.00067
	(A * !C * !D * X)	-0.00065	-0.00064	-0.00064
	(!A * C * D * X)	0.00067	0.00067	0.00067
	(!A * C * D * X)	-0.00083	-0.00084	-0.00083
	(!A * C * !D * X)	0.00067	0.00067	0.00067
	(!A * C * !D * X)	-0.00083	-0.00084	-0.00083
	(!A * !C * D * X)	0.00067	0.00067	0.00067
	(!A * !C * D * X)	-0.00077	-0.00079	-0.00078

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00100	0.00100	0.00099
	(A * C * D * X)	-0.00134	-0.00134	-0.00133
	(A * C * !D * X)	0.00099	0.00100	0.00099
	(A * C * !D * X)	-0.00131	-0.00131	-0.00130
	(A * !C * D * X)	0.00099	0.00099	0.00099
	(A * !C * D * X)	-0.00128	-0.00128	-0.00128
	(A * !C * !D * X)	0.00099	0.00099	0.00099
	(A * !C * !D * X)	-0.00125	-0.00125	-0.00124
	(!A * C * D * X)	0.00099	0.00100	0.00099
	(!A * C * D * X)	-0.00159	-0.00162	-0.00161
	(!A * C * !D * X)	0.00099	0.00100	0.00099
	(!A * C * !D * X)	-0.00159	-0.00162	-0.00161
	(!A * !C * D * X)	0.00098	0.00099	0.00098
	(!A * !C * D * X)	-0.00151	-0.00154	-0.00153

Passive power(pJ) for B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4_1	**(A * C * D * X)**	-0.00060	-0.00060	-0.00060
	(A * C * D * X)	0.00065	0.00065	0.00064
	(A * C * !D * X)	-0.00060	-0.00060	-0.00060
	(A * C * !D * X)	0.00064	0.00064	0.00063
	(A * !C * D * X)	-0.00060	-0.00060	-0.00060
	(A * !C * D * X)	0.00062	0.00062	0.00062
	(A * !C * !D * X)	-0.00060	-0.00060	-0.00060
	(A * !C * !D * X)	0.00060	0.00061	0.00061
	(!A * C * D * X)	-0.00060	-0.00060	-0.00060
	(!A * C * D * X)	0.00079	0.00079	0.00079
	(!A * C * !D * X)	-0.00060	-0.00060	-0.00060
	(!A * C * !D * X)	0.00079	0.00079	0.00079
	(!A * !C * D * X)	-0.00060	-0.00060	-0.00060
	(!A * !C * D * X)	0.00074	0.00074	0.00074
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00067	-0.00067	-0.00066
	(A * C * D * X)	0.00069	0.00069	0.00068
	(A * C * !D * X)	-0.00067	-0.00067	-0.00066
	(A * C * !D * X)	0.00068	0.00068	0.00067
	(A * !C * D * X)	-0.00067	-0.00067	-0.00066
	(A * !C * D * X)	0.00066	0.00066	0.00066
	(A * !C * !D * X)	-0.00067	-0.00067	-0.00066
	(A * !C * !D * X)	0.00065	0.00065	0.00065
	(!A * C * D * X)	-0.00067	-0.00067	-0.00066
	(!A * C * D * X)	0.00084	0.00084	0.00083
	(!A * C * !D * X)	-0.00067	-0.00067	-0.00066
	(!A * C * !D * X)	0.00084	0.00084	0.00083
	(!A * !C * D * X)	-0.00067	-0.00067	-0.00066
	(!A * !C * D * X)	0.00078	0.00079	0.00078

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00099	-0.00099	-0.00099
	(A * C * D * X)	0.00134	0.00134	0.00133
	(A * C * !D * X)	-0.00099	-0.00099	-0.00099
	(A * C * !D * X)	0.00131	0.00131	0.00130
	(A * !C * D * X)	-0.00098	-0.00099	-0.00098
	(A * !C * D * X)	0.00128	0.00128	0.00128
	(A * !C * !D * X)	-0.00099	-0.00099	-0.00098
	(A * !C * !D * X)	0.00127	0.00126	0.00126
	(!A * C * D * X)	-0.00099	-0.00099	-0.00099
	(!A * C * D * X)	0.00162	0.00162	0.00161
	(!A * C * !D * X)	-0.00099	-0.00099	-0.00099
	(!A * C * !D * X)	0.00162	0.00162	0.00161
	(!A * !C * D * X)	-0.00098	-0.00099	-0.00098
	(!A * !C * D * X)	0.00153	0.00154	0.00153

Passive power(pJ) for C rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00061	0.00062	0.00061
	(B * D * X)	-0.00062	-0.00061	-0.00061
	(B * !D * X)	0.00062	0.00062	0.00061
	(B * !D * X)	-0.00060	-0.00059	-0.00059
	(A * !B * D * X)	0.00061	0.00062	0.00061
	(A * !B * D * X)	-0.00062	-0.00063	-0.00063
	(A * !B * !D * X)	0.00062	0.00062	0.00061
	(A * !B * !D * X)	-0.00059	-0.00059	-0.00059
	(!A * !B * D * X)	0.00062	0.00062	0.00061
	(!A * !B * D * X)	-0.00078	-0.00078	-0.00078

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00071	0.00072	0.00072
	(B * D * X)	-0.00062	-0.00062	-0.00062
	(B * !D * X)	0.00073	0.00072	0.00071
	(B * !D * X)	-0.00060	-0.00060	-0.00060
	(A * !B * D * X)	0.00072	0.00072	0.00072
	(A * !B * D * X)	-0.00064	-0.00064	-0.00063
	(A * !B * !D * X)	0.00073	0.00072	0.00072
	(A * !B * !D * X)	-0.00060	-0.00060	-0.00060
	(!A * !B * D * X)	0.00072	0.00072	0.00072
	(!A * !B * D * X)	-0.00079	-0.00079	-0.00079
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00101	0.00102	0.00101
	(B * D * X)	-0.00128	-0.00128	-0.00127
	(B * !D * X)	0.00102	0.00102	0.00101
	(B * !D * X)	-0.00124	-0.00123	-0.00123
	(A * !B * D * X)	0.00101	0.00101	0.00101
	(A * !B * D * X)	-0.00129	-0.00130	-0.00129
	(A * !B * !D * X)	0.00102	0.00102	0.00101
	(A * !B * !D * X)	-0.00123	-0.00123	-0.00122
	(!A * !B * D * X)	0.00101	0.00102	0.00100
	(!A * !B * D * X)	-0.00162	-0.00163	-0.00162

Passive power(pJ) for C falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00061	-0.00061	-0.00061
	(B * D * X)	0.00062	0.00061	0.00061
	(B * !D * X)	-0.00061	-0.00061	-0.00061
	(B * !D * X)	0.00061	0.00060	0.00060
	(A * !B * D * X)	-0.00061	-0.00061	-0.00061
	(A * !B * D * X)	0.00062	0.00063	0.00063
	(A * !B * !D * X)	-0.00058	-0.00059	-0.00060
	(A * !B * !D * X)	0.00061	0.00061	0.00060
	(!A * !B * D * X)	-0.00061	-0.00061	-0.00061
	(!A * !B * D * X)	0.00078	0.00078	0.00078
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00071	-0.00072	-0.00071
	(B * D * X)	0.00062	0.00062	0.00062
	(B * !D * X)	-0.00072	-0.00072	-0.00071
	(B * !D * X)	0.00061	0.00061	0.00061
	(A * !B * D * X)	-0.00072	-0.00072	-0.00071
	(A * !B * D * X)	0.00064	0.00064	0.00063
	(A * !B * !D * X)	-0.00069	-0.00070	-0.00070
	(A * !B * !D * X)	0.00062	0.00061	0.00061
	(!A * !B * D * X)	-0.00072	-0.00072	-0.00071
	(!A * !B * D * X)	0.00079	0.00079	0.00079
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00101	-0.00101	-0.00101
	(B * D * X)	0.00128	0.00128	0.00127
	(B * !D * X)	-0.00101	-0.00101	-0.00101
	(B * !D * X)	0.00125	0.00125	0.00125
	(A * !B * D * X)	-0.00100	-0.00101	-0.00101
	(A * !B * D * X)	0.00129	0.00130	0.00129
	(A * !B * !D * X)	-0.00094	-0.00095	-0.00097
	(A * !B * !D * X)	0.00128	0.00127	0.00125
	(!A * !B * D * X)	-0.00100	-0.00101	-0.00100
	(!A * !B * D * X)	0.00163	0.00163	0.00162

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00070	0.00070	0.00069
	(C * X)	-0.00056	-0.00056	-0.00055
	(B * !C * X)	0.00070	0.00070	0.00069
	(B * !C * X)	-0.00056	-0.00056	-0.00055
	(A * !B * !C * X)	0.00070	0.00070	0.00069
	(A * !B * !C * X)	-0.00056	-0.00056	-0.00055
sky130_fd_sc_hs__or4_2	(C * X)	0.00084	0.00083	0.00083
	(C * X)	-0.00056	-0.00055	-0.00055
	(B * !C * X)	0.00084	0.00083	0.00083
	(B * !C * X)	-0.00056	-0.00055	-0.00055
	(A * !B * !C * X)	0.00083	0.00083	0.00083
	(A * !B * !C * X)	-0.00055	-0.00055	-0.00055
sky130_fd_sc_hs__or4_4	(C * X)	0.00117	0.00118	0.00116
	(C * X)	-0.00109	-0.00110	-0.00109
	(B * !C * X)	0.00117	0.00118	0.00116
	(B * !C * X)	-0.00109	-0.00110	-0.00108
	(A * !B * !C * X)	0.00117	0.00118	0.00116
	(A * !B * !C * X)	-0.00109	-0.00110	-0.00108

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00069	-0.00069	-0.00069
	(C * X)	0.00057	0.00057	0.00056
	(B * !C * X)	-0.00062	-0.00062	-0.00068
	(B * !C * X)	0.00062	0.00061	0.00057
	(A * !B * !C * X)	-0.00054	-0.00055	-0.00066
	(A * !B * !C * X)	0.00066	0.00066	0.00058
sky130_fd_sc_hs__or4_2	(C * X)	-0.00082	-0.00082	-0.00083
	(C * X)	0.00057	0.00056	0.00055
	(B * !C * X)	-0.00075	-0.00076	-0.00082
	(B * !C * X)	0.00060	0.00061	0.00056
	(A * !B * !C * X)	-0.00068	-0.00069	-0.00080
	(A * !B * !C * X)	0.00065	0.00065	0.00057
sky130_fd_sc_hs__or4_4	(C * X)	-0.00115	-0.00115	-0.00116
	(C * X)	0.00112	0.00112	0.00109
	(B * !C * X)	-0.00098	-0.00099	-0.00114
	(B * !C * X)	0.00123	0.00123	0.00111
	(A * !B * !C * X)	-0.00084	-0.00085	-0.00109
	(A * !B * !C * X)	0.00132	0.00131	0.00114

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT						OUTPUT	
D	SCD	SCE	RESET_B	SET_B	CLK_N	Q	Q_N
0	0	x	1	1	F	0	1
0	1	0	1	1	F	0	1
x	1	1	1	1	F	1	0
1	x	0	1	1	F	1	0
1	0	1	1	1	F	0	1
x	x	x	x	0	x	1	0
x	x	x	0	1	x	0	1
x	x	x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbn_1	55.94400
sky130_fd_sc_hs__sdfbbn_2	60.73920

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	SCD	SCE	RESET_B	SET_B	CLK_N	Q	Q_N
sky130_fd_sc_hs__sdfbbn_1	0.00177	0.00153	0.00375	0.00162	0.00506	0.00273	0.18875	0.18727
sky130_fd_sc_hs__sdfbbn_2	0.00179	0.00154	0.00380	0.00150	0.00499	0.00269	0.37161	0.37888

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	0.00066	0.00074
sky130_fd_sc_hs__sdfbbn_2	0.00000	0.00074	0.00082

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q (FR)	2.41225	4.06930	15.33160
	SET_B->Q (FR)	1.00267	2.67161	13.98930
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	2.76238	4.17282	15.52210
	SET_B->Q (FR)	1.15637	2.60794	14.08650

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q (FF)	2.15558	3.19401	9.20089
	RESET_B->Q (FF)	1.11037	2.12663	7.99438
	SET_B->Q (RF)	0.52632	1.25010	4.43797
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	2.27073	3.29013	9.32543
	RESET_B->Q (FF)	1.26219	2.25613	8.16025
	SET_B->Q (RF)	0.67817	1.39998	4.73110

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q_N (FR)	2.00794	3.73367	14.92660
	RESET_B->Q_N (FR)	0.96326	2.67316	13.74370
	SET_B->Q_N (RR)	0.37754	1.80006	10.22020
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	1.96014	3.51160	14.91900
	RESET_B->Q_N (FR)	0.95225	2.48517	13.76930
	SET_B->Q_N (RR)	0.36819	1.62568	10.36920

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbn_1	CLK_N->Q_N (FF)	2.05091	3.30571	9.56479
	SET_B->Q_N (FF)	0.71496	1.85426	8.19289
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	2.25753	3.53851	9.90846
	SET_B->Q_N (FF)	0.81800	1.94121	8.38664

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	0.22351	0.35745	3.24202
	setup	CLK_N (F)	0.69312	0.48679	-2.95662
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.21581	0.34586	3.20162
	setup	CLK_N (F)	0.70106	0.49720	-2.91637

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-1.63106	-1.64123	-2.95112
	setup	CLK_N (F)	1.80804	1.79877	3.18894
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-1.74042	-1.74418	-3.09815
	setup	CLK_N (F)	1.93507	1.91637	3.32648

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	0.22351	0.35745	3.24202
	setup	CLK_N (F)	0.69312	0.48679	-2.95662
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.21581	0.34586	3.20162
	setup	CLK_N (F)	0.70106	0.49720	-2.91637

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-1.63106	-1.64123	-2.95112
	setup	CLK_N (F)	1.80804	1.79877	3.18894
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-1.74042	-1.74418	-3.09815
	setup	CLK_N (F)	1.93507	1.91637	3.32648

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	0.20023	0.34986	3.11520
	setup	CLK_N (F)	0.71714	0.51374	-2.83925
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.19217	0.33993	3.08400
	setup	CLK_N (F)	0.72813	0.51305	-2.80313

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-1.92121	-2.00746	-3.68085
	setup	CLK_N (F)	2.12742	2.17701	3.94743
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-2.02935	-2.11511	-3.81418
	setup	CLK_N (F)	2.25602	2.30144	4.08633

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	0.19974	0.34869	3.11520
	hold	CLK_N (F)	0.20023	0.34986	3.11501
	setup	CLK_N (F)	0.71714	0.51374	-2.83925
	setup	CLK_N (F)	0.71403	0.51278	-2.84202
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.19217	0.33941	3.08400
	hold	CLK_N (F)	0.19153	0.33993	3.08333
	setup	CLK_N (F)	0.72813	0.51305	-2.80313
	setup	CLK_N (F)	0.72510	0.51061	-2.81171

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-1.92121	-2.00746	-3.68085
	hold	CLK_N (F)	-1.93882	-2.01262	-3.74032
	setup	CLK_N (F)	2.10059	2.16755	3.88633
	setup	CLK_N (F)	2.12742	2.17701	3.94743
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-2.02935	-2.11511	-3.81418
	hold	CLK_N (F)	-2.05193	-2.11619	-3.87089
	setup	CLK_N (F)	2.23164	2.29041	4.02856
	setup	CLK_N (F)	2.25602	2.30144	4.08633

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	0.22576	0.35269	3.20492
	setup	CLK_N (F)	2.01881	1.87877	-0.26398
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.21950	0.34516	3.16685
	setup	CLK_N (F)	2.14867	2.00372	-0.12471

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.08458	-0.07600	0.49395
	setup	CLK_N (F)	1.80604	1.85182	3.57482
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.09475	-0.08832	0.47959
	setup	CLK_N (F)	1.93560	1.97518	3.72576

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-1.83598	-1.72397	0.45448
	hold	CLK_N (F)	0.22576	0.35269	3.20492
	setup	CLK_N (F)	2.01881	1.87877	-0.26398
	setup	CLK_N (F)	0.69877	0.49971	-2.91204
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-1.94750	-1.83008	0.33310
	hold	CLK_N (F)	0.21950	0.34516	3.16685
	setup	CLK_N (F)	2.14867	2.00372	-0.12471
	setup	CLK_N (F)	0.70883	0.50776	-2.87206

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	hold	CLK_N (F)	-0.08458	-0.07600	0.49395
	hold	CLK_N (F)	-1.63118	-1.69856	-3.36355
	setup	CLK_N (F)	0.99113	0.92631	-0.31091
	setup	CLK_N (F)	1.80604	1.85182	3.57482
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.09475	-0.08832	0.47959
	hold	CLK_N (F)	-1.73707	-1.80041	-3.49792
	setup	CLK_N (F)	1.00295	0.93610	-0.29285
	setup	CLK_N (F)	1.93560	1.97518	3.72576

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	recovery	CLK_N (F)	0.58670	0.37938	-3.32005
	removal	CLK_N (F)	0.39391	0.53245	3.66429
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.58020	0.36864	-3.33858
	removal	CLK_N (F)	0.45273	0.56181	3.70491

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	recovery	CLK_N (F)	0.58670	0.37938	-3.32005
	recovery	CLK_N (F)	0.58526	0.37867	-3.32023
	recovery	CLK_N (F)	0.58502	0.37847	-3.32378
	removal	CLK_N (F)	0.39195	0.52995	3.66429
	removal	CLK_N (F)	0.39391	0.53245	3.66179
	removal	CLK_N (F)	0.39391	0.53245	3.66179
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.58020	0.36742	-3.33893
	recovery	CLK_N (F)	0.58014	0.36864	-3.34057
	recovery	CLK_N (F)	0.58002	0.36656	-3.33858
	removal	CLK_N (F)	0.45103	0.56181	3.70491
	removal	CLK_N (F)	0.45273	0.56174	3.70154
	removal	CLK_N (F)	0.45273	0.56174	3.70154

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	min_pulse_width	RESET_B ()	1.15219	1.74139	16.50020
	min_pulse_width	RESET_B ()	0.94108	1.74139	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	1.11122	1.75179	16.50020
	min_pulse_width	RESET_B ()	0.95901	1.75179	16.50020

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	recovery	CLK_N (F)	-0.34098	-0.53257	-3.70870
	removal	CLK_N (F)	0.39053	0.59136	3.83511
	hold	RESET_B (R)	-0.18893	-0.32638	-1.42021
	setup	RESET_B (R)	0.80932	0.70951	1.77522
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.33050	-0.51524	-3.63574
	removal	CLK_N (F)	0.38253	0.58134	3.79208
	hold	RESET_B (R)	-0.24703	-0.40344	-1.70600
	setup	RESET_B (R)	0.76357	0.68366	1.92511

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	recovery	CLK_N (F)	-0.34269	-0.53290	-3.70870
	recovery	CLK_N (F)	-0.34116	-0.53346	-3.70917
	recovery	CLK_N (F)	-0.34098	-0.53257	-3.70947
	removal	CLK_N (F)	0.39052	0.59136	3.83255
	removal	CLK_N (F)	0.39053	0.59136	3.83255
	removal	CLK_N (F)	0.38908	0.58881	3.83511
	hold	RESET_B (R)	-0.18893	-0.32764	-1.42383
	hold	RESET_B (R)	-0.18925	-0.32638	-1.42021
	setup	RESET_B (R)	0.80932	0.70951	1.69922
	setup	RESET_B (R)	0.45988	0.48028	1.77522
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.33066	-0.51524	-3.63912
	recovery	CLK_N (F)	-0.33050	-0.51542	-3.63831
	recovery	CLK_N (F)	-0.33061	-0.51531	-3.63574
	removal	CLK_N (F)	0.37997	0.58134	3.79208
	removal	CLK_N (F)	0.37997	0.58134	3.79208
	removal	CLK_N (F)	0.38253	0.57877	3.79065
	hold	RESET_B (R)	-0.26188	-0.41717	-1.70839
	hold	RESET_B (R)	-0.24703	-0.40344	-1.70600
	setup	RESET_B (R)	0.76357	0.68366	1.92511
	setup	RESET_B (R)	0.49515	0.51062	1.91446

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	min_pulse_width	SET_B ()	0.77626	1.82112	16.50020
	min_pulse_width	SET_B ()	0.77026	1.83152	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.92413	1.98059	16.50020
	min_pulse_width	SET_B ()	0.87924	1.92512	16.50020

Constraints(ns) for CLK_N rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	min_pulse_width	CLK_N ()	1.00866	1.45020	16.50020
	min_pulse_width	CLK_N ()	0.77886	1.45020	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	1.02415	1.45020	16.50020
	min_pulse_width	CLK_N ()	0.83308	1.45020	16.50020

Constraints(ns) for CLK_N falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbn_1	min_pulse_width	CLK_N ()	1.32144	1.72752	16.50020
	min_pulse_width	CLK_N ()	1.39796	1.66512	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	1.48808	1.78992	16.50020
	min_pulse_width	CLK_N ()	1.38028	1.65819	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00717	0.00719	0.00710
	CLK_N	0.00829	0.00831	0.00823
	SET_B	0.00720	0.00716	0.00712
	SET_B	0.00929	0.00924	0.00910
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00843	0.00853	0.00853
	CLK_N	0.00950	0.00960	0.00960
	SET_B	0.00854	0.00859	0.00876
	SET_B	0.01056	0.01061	0.01055

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00772	0.00772	0.00749
	CLK_N	0.00868	0.00867	0.00845
	RESET_B	0.00898	0.00904	0.00873
	RESET_B	0.00956	0.00962	0.00930
	SET_B	0.00931	0.00922	0.00890
	SET_B	0.00723	0.00714	0.00682
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00901	0.00912	0.00873
	CLK_N	0.00999	0.01010	0.00985
	RESET_B	0.01053	0.01069	0.01034
	RESET_B	0.01113	0.01129	0.01094
	SET_B	0.01080	0.01079	0.01047
	SET_B	0.00878	0.00880	0.00844

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00773	0.00772	0.00765
	CLK_N	0.00869	0.00868	0.00864
	RESET_B	0.00899	0.00905	0.00898
	RESET_B	0.00957	0.00963	0.00950
	SET_B	0.00931	0.00922	0.00911
	SET_B	0.00724	0.00715	0.00703
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00902	0.00911	0.00888
	CLK_N	0.01000	0.01009	0.01011
	RESET_B	0.01054	0.01070	0.01069
	RESET_B	0.01114	0.01130	0.01122
	SET_B	0.01081	0.01081	0.01074
	SET_B	0.00879	0.00882	0.00872

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00716	0.00718	0.00693
	CLK_N	0.00828	0.00830	0.00805
	SET_B	0.00717	0.00712	0.00681
	SET_B	0.00926	0.00919	0.00886
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.00842	0.00853	0.00827
	CLK_N	0.00949	0.00960	0.00934
	SET_B	0.00851	0.00855	0.00821
	SET_B	0.01053	0.01057	0.01020

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * SCD * SCE)**	0.00060	0.00061	0.00060
	(CLK_N * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00602	0.00595	0.00585
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00473	0.00466	0.00456
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00414	0.00410	0.00403
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00261	0.00256	0.00249
	(CLK_N * !SCD * SCE)	0.00027	0.00027	0.00026
	(CLK_N * !SCD * SCE)	-0.00070	-0.00071	-0.00071
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00361	0.00356	0.00349
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00209	0.00204	0.00197
	(!CLK_N * SCD * SCE)	0.00060	0.00061	0.00060
	(!CLK_N * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK_N * !SCE)	0.00240	0.00233	0.00226
	(!CLK_N * !SCE)	0.00087	0.00081	0.00075
	(!CLK_N * !SCD * SCE)	0.00027	0.00027	0.00026
	(!CLK_N * !SCD * SCE)	-0.00070	-0.00071	-0.00071

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00062	0.00062	0.00062
	(CLK_N * SCD * SCE)	-0.00037	-0.00037	-0.00036
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00608	0.00601	0.00591
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00476	0.00468	0.00458
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00422	0.00418	0.00411
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00266	0.00262	0.00255
	(CLK_N * !SCD * SCE)	0.00029	0.00029	0.00028
	(CLK_N * !SCD * SCE)	-0.00070	-0.00071	-0.00071
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00364	0.00360	0.00352
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00209	0.00205	0.00197
	(!CLK_N * SCD * SCE)	0.00061	0.00062	0.00062
	(!CLK_N * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK_N * !SCE)	0.00236	0.00230	0.00224
	(!CLK_N * !SCE)	0.00081	0.00075	0.00069
	(!CLK_N * !SCD * SCE)	0.00029	0.00029	0.00028
	(!CLK_N * !SCD * SCE)	-0.00070	-0.00071	-0.00071

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * SCD * SCE)**	-0.00059	-0.00060	-0.00060
	(CLK_N * SCD * SCE)	0.00038	0.00038	0.00037
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00581	0.00571	0.00557
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00710	0.00701	0.00683
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00187	0.00177	0.00171
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00340	0.00331	0.00323
	(CLK_N * !SCD * SCE)	-0.00026	-0.00026	-0.00026
	(CLK_N * !SCD * SCE)	0.00071	0.00071	0.00071
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00240	0.00230	0.00225
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00391	0.00382	0.00375
	(!CLK_N * SCD * SCE)	-0.00058	-0.00060	-0.00060
	(!CLK_N * SCD * SCE)	0.00038	0.00038	0.00037
	(!CLK_N * !SCE)	0.00125	0.00116	0.00114
	(!CLK_N * !SCE)	0.00277	0.00268	0.00266
	(!CLK_N * !SCD * SCE)	-0.00026	-0.00026	-0.00026
	(!CLK_N * !SCD * SCE)	0.00071	0.00071	0.00071

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00061	-0.00062	-0.00062
	(CLK_N * SCD * SCE)	0.00038	0.00038	0.00037
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00633	0.00623	0.00603
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00766	0.00756	0.00733
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00205	0.00196	0.00187
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00362	0.00352	0.00342
	(CLK_N * !SCD * SCE)	-0.00028	-0.00028	-0.00028
	(CLK_N * !SCD * SCE)	0.00072	0.00071	0.00071
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00262	0.00253	0.00246
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00417	0.00408	0.00399
	(!CLK_N * SCD * SCE)	-0.00060	-0.00062	-0.00062
	(!CLK_N * SCD * SCE)	0.00037	0.00038	0.00037
	(!CLK_N * !SCE)	0.00140	0.00132	0.00129
	(!CLK_N * !SCE)	0.00296	0.00286	0.00284
	(!CLK_N * !SCD * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK_N * !SCD * SCE)	0.00071	0.00071	0.00071

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00464	0.00460	0.00454
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00277	0.00274	0.00268
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00651	0.00645	0.00636
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00489	0.00484	0.00475
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00411	0.00407	0.00399
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00225	0.00222	0.00215
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00486	0.00482	0.00474
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00298	0.00295	0.00288
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00674	0.00668	0.00657
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00511	0.00505	0.00495
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00432	0.00429	0.00420
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00246	0.00243	0.00235
	(!CLK_N * D * SCE)	0.00290	0.00285	0.00279
	(!CLK_N * D * SCE)	0.00104	0.00100	0.00094
	(!CLK_N * !D * SCE)	0.00311	0.00307	0.00299
	(!CLK_N * !D * SCE)	0.00125	0.00121	0.00114
	!SCE	0.00045	0.00045	0.00044
	!SCE	-0.00058	-0.00059	-0.00059

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00471	0.00467	0.00461
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00284	0.00281	0.00275
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00656	0.00650	0.00641
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00493	0.00487	0.00478
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00413	0.00409	0.00402
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00227	0.00224	0.00217
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00492	0.00489	0.00481
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00305	0.00302	0.00294
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00678	0.00673	0.00661
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00514	0.00508	0.00497
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00434	0.00431	0.00422
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00248	0.00244	0.00236
	(!CLK_N * D * SCE)	0.00285	0.00281	0.00274
	(!CLK_N * D * SCE)	0.00100	0.00096	0.00090
	(!CLK_N * !D * SCE)	0.00306	0.00303	0.00294
	(!CLK_N * !D * SCE)	0.00120	0.00116	0.00109
	!SCE	0.00044	0.00044	0.00044
	!SCE	-0.00059	-0.00060	-0.00060

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00245	0.00241	0.00224
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00433	0.00428	0.00406
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00639	0.00635	0.00589
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00801	0.00797	0.00745
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00298	0.00294	0.00274
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00484	0.00480	0.00454
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00228	0.00224	0.00207
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00415	0.00411	0.00387
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00621	0.00618	0.00574
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00784	0.00781	0.00725
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00280	0.00277	0.00257
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00466	0.00463	0.00435
	(!CLK_N * D * SCE)	0.00185	0.00181	0.00179
	(!CLK_N * D * SCE)	0.00370	0.00367	0.00362
	(!CLK_N * !D * SCE)	0.00167	0.00164	0.00164
	(!CLK_N * !D * SCE)	0.00353	0.00350	0.00348
	!SCE	-0.00044	-0.00045	-0.00044
	!SCE	0.00058	0.00059	0.00059

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00264	0.00260	0.00237
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00452	0.00448	0.00418
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00691	0.00687	0.00616
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00855	0.00851	0.00773
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00321	0.00318	0.00290
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00507	0.00503	0.00470
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00246	0.00243	0.00220
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00434	0.00430	0.00399
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00673	0.00670	0.00603
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00838	0.00834	0.00755
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00303	0.00300	0.00273
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00490	0.00486	0.00450
	(!CLK_N * D * SCE)	0.00201	0.00197	0.00195
	(!CLK_N * D * SCE)	0.00386	0.00383	0.00379
	(!CLK_N * !D * SCE)	0.00183	0.00179	0.00179
	(!CLK_N * !D * SCE)	0.00369	0.00365	0.00364
	!SCE	-0.00044	-0.00044	-0.00044
	!SCE	0.00060	0.00060	0.00060

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00253	0.00246	0.00240
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00017	-0.00027	-0.00033
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00931	0.00925	0.00914
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00706	0.00699	0.00686
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00537	0.00531	0.00518
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00338	0.00329	0.00315
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00591	0.00584	0.00573
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00389	0.00380	0.00368
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00634	0.00622	0.00608
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00302	0.00289	0.00277
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00822	0.00806	0.00790
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00514	0.00498	0.00484
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00254	0.00247	0.00242
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00005	-0.00013	-0.00018
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00581	0.00568	0.00554
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00250	0.00237	0.00225
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00259	0.00252	0.00246
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00011	-0.00021	-0.00027
	(!CLK_N * D * !SCD)	0.00487	0.00477	0.00465
	(!CLK_N * D * !SCD)	0.00286	0.00274	0.00261
	(!CLK_N * !D * SCD)	0.00466	0.00452	0.00439
	(!CLK_N * !D * SCD)	0.00134	0.00120	0.00109

sky130_fd_sc_hs__sdfbbn_2	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00257	0.00251	0.00243
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00017	-0.00028	-0.00032
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00985	0.00980	0.00969
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00760	0.00753	0.00740
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00559	0.00553	0.00540
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00357	0.00349	0.00335
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00617	0.00610	0.00599
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00413	0.00405	0.00393
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00646	0.00632	0.00620
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00308	0.00296	0.00284
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00832	0.00816	0.00800
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00518	0.00502	0.00487
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00258	0.00250	0.00245
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00006	-0.00014	-0.00018
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00587	0.00575	0.00561
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00251	0.00239	0.00226
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00263	0.00255	0.00250
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00011	-0.00021	-0.00026
	(!CLK_N * D * !SCD)	0.00506	0.00496	0.00484
	(!CLK_N * D * !SCD)	0.00303	0.00291	0.00278
	(!CLK_N * !D * SCD)	0.00465	0.00452	0.00439
	(!CLK_N * !D * SCD)	0.00130	0.00116	0.00105

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00023	-0.00028	-0.00030
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00249	0.00243	0.00242
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00563	0.00563	0.00555
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00791	0.00789	0.00782
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00376	0.00376	0.00371
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00579	0.00577	0.00573
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00323	0.00322	0.00317
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00527	0.00525	0.00521
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00190	0.00176	0.00166
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00520	0.00506	0.00495
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00585	0.00571	0.00546
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00891	0.00877	0.00848
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00014	-0.00020	-0.00022
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00244	0.00239	0.00237
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00243	0.00228	0.00219
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00571	0.00558	0.00546
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00029	-0.00034	-0.00036
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00243	0.00238	0.00236
	(!CLK_N * D * !SCD)	0.00198	0.00195	0.00189
	(!CLK_N * D * !SCD)	0.00402	0.00398	0.00392
	(!CLK_N * !D * SCD)	0.00123	0.00109	0.00106
	(!CLK_N * !D * SCD)	0.00451	0.00438	0.00435

sky130_fd_sc_hs__sdfbbn_2	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00027	-0.00032	-0.00034
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00249	0.00243	0.00241
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00566	0.00565	0.00558
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00794	0.00792	0.00785
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00380	0.00379	0.00375
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00585	0.00583	0.00578
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00322	0.00321	0.00316
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00528	0.00526	0.00521
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00206	0.00191	0.00178
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00541	0.00527	0.00512
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00633	0.00619	0.00587
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00947	0.00932	0.00894
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00018	-0.00023	-0.00025
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00246	0.00239	0.00238
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00263	0.00248	0.00235
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00597	0.00583	0.00567
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00034	-0.00039	-0.00041
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00243	0.00237	0.00235
	(!CLK_N * D * !SCD)	0.00190	0.00188	0.00181
	(!CLK_N * D * !SCD)	0.00397	0.00392	0.00387
	(!CLK_N * !D * SCD)	0.00135	0.00121	0.00118
	(!CLK_N * !D * SCD)	0.00469	0.00456	0.00453

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00597	0.00586	0.00578
	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00465	0.00453	0.00445
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00356	0.00350	0.00346
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00200	0.00195	0.00191
	(!SET_B * Q * !Q_N)	0.00355	0.00350	0.00346
	(!SET_B * Q * !Q_N)	0.00197	0.00191	0.00187

sky130_fd_sc_hs__sdfbbn_2	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00580	0.00568	0.00559
	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00452	0.00439	0.00431
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00337	0.00332	0.00328
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00187	0.00181	0.00177
	(!SET_B * Q * !Q_N)	0.00346	0.00341	0.00336
	(!SET_B * Q * !Q_N)	0.00193	0.00187	0.00182

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)**	0.00523	0.00515	0.00506
	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00656	0.00648	0.00638
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00168	0.00162	0.00160
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00325	0.00318	0.00316
	(!SET_B * Q * !Q_N)	0.00134	0.00128	0.00122
	(!SET_B * Q * !Q_N)	0.00295	0.00288	0.00281

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)**	0.00558	0.00550	0.00540
	(CLK_N * D * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00688	0.00679	0.00669
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00178	0.00171	0.00169
	(CLK_N * D * !SCD * SCE * SET_B * !Q * Q_N) + (CLK_N * !D * SCD * !SCE * SET_B * !Q * Q_N) + (CLK_N * !D * !SCD * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00329	0.00322	0.00320
	(!SET_B * Q * !Q_N)	0.00136	0.00129	0.00122
	(!SET_B * Q * !Q_N)	0.00291	0.00284	0.00276

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)**	0.00161	0.00162	0.00161
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00197	-0.00198	-0.00197
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00553	0.00546	0.00541
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00166	0.00158	0.00153

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)**	0.00166	0.00167	0.00166
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00190	-0.00191	-0.00190
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00586	0.00579	0.00575
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00203	0.00196	0.00191

Passive power(pJ) for SET_B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)**	-0.00160	-0.00162	-0.00161
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00198	0.00199	0.00197
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00066	0.00054	0.00046
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00453	0.00442	0.00434

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)**	-0.00165	-0.00167	-0.00166
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00190	0.00191	0.00190
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00058	0.00046	0.00039
	(CLK_N * D * RESET_B * !SCD * SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * Q * !Q_N)	0.00441	0.00430	0.00422

Passive power(pJ) for CLK_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01032	0.01018	0.01018
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00847	0.00834	0.00833
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00656	0.00640	0.00627
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00449	0.00432	0.00419
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01037	0.01022	0.01022
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00852	0.00838	0.00837
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00661	0.00644	0.00632
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00453	0.00436	0.00423
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01123	0.01102	0.01087
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00894	0.00872	0.00857
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00635	0.00617	0.00605
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00428	0.00409	0.00397
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00714	0.00691	0.00674
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00507	0.00484	0.00467
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00796	0.00781	0.00781
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00588	0.00574	0.00573
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00800	0.00786	0.00785
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00593	0.00579	0.00578
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01032	0.01018	0.01017
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00847	0.00834	0.00833
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00656	0.00640	0.00627
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00449	0.00432	0.00419
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01126	0.01104	0.01089
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.00895	0.00873	0.00859
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01123	0.01101	0.01087
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00893	0.00871	0.00856
	(!D * !SCE * SET_B * !Q * Q_N)	0.00639	0.00622	0.00609
	(!D * !SCE * SET_B * !Q * Q_N)	0.00432	0.00414	0.00402
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00718	0.00695	0.00678
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00512	0.00488	0.00471
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00635	0.00617	0.00605
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00428	0.00410	0.00397
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00714	0.00691	0.00674
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00507	0.00484	0.00467
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00796	0.00781	0.00781
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00588	0.00574	0.00573

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01044	0.01029	0.01029
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00861	0.00846	0.00846
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00651	0.00633	0.00621
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00446	0.00429	0.00416
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01048	0.01033	0.01033
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00866	0.00851	0.00850
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00655	0.00638	0.00625
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00450	0.00433	0.00420
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01147	0.01125	0.01110
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00922	0.00900	0.00885
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00633	0.00614	0.00602
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00428	0.00410	0.00397
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00707	0.00684	0.00667
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00503	0.00480	0.00463
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00802	0.00787	0.00786
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00598	0.00583	0.00582
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00806	0.00791	0.00790
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00602	0.00587	0.00586
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01044	0.01029	0.01029
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00861	0.00846	0.00845
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00651	0.00634	0.00621
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00446	0.00429	0.00416
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01149	0.01127	0.01112
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.00923	0.00901	0.00886
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01147	0.01124	0.01109
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00921	0.00899	0.00884
	(!D * !SCE * SET_B * !Q * Q_N)	0.00637	0.00618	0.00606
	(!D * !SCE * SET_B * !Q * Q_N)	0.00432	0.00414	0.00401
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00711	0.00688	0.00670
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00507	0.00484	0.00466
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00633	0.00614	0.00602
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00428	0.00410	0.00397
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00707	0.00684	0.00667
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00504	0.00480	0.00463
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00802	0.00787	0.00786
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00598	0.00583	0.00582

Passive power(pJ) for CLK_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00518	0.00502	0.00491
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00727	0.00711	0.00698
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00514	0.00498	0.00486
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00723	0.00706	0.00694
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00531	0.00515	0.00504
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00740	0.00723	0.00712
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00698	0.00681	0.00664
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00906	0.00888	0.00872
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00702	0.00686	0.00666
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00911	0.00894	0.00874
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00698	0.00682	0.00662
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00907	0.00890	0.00870
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00518	0.00502	0.00491
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00727	0.00711	0.00698
	(!D * !SCE * SET_B * !Q * Q_N)	0.00527	0.00511	0.00499
	(!D * !SCE * SET_B * !Q * Q_N)	0.00736	0.00719	0.00707
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00694	0.00677	0.00660
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00902	0.00884	0.00867
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00531	0.00515	0.00504
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00740	0.00723	0.00712
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00698	0.00681	0.00664
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00906	0.00888	0.00872
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00702	0.00686	0.00666
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00911	0.00894	0.00874

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00518	0.00502	0.00490
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00723	0.00707	0.00695
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00514	0.00498	0.00486
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00719	0.00703	0.00690
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00528	0.00512	0.00500
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00734	0.00717	0.00705
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00698	0.00681	0.00664
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00903	0.00885	0.00868
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00712	0.00696	0.00674
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00918	0.00901	0.00878
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00708	0.00692	0.00670
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00914	0.00897	0.00874
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00518	0.00502	0.00490
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00723	0.00707	0.00695
	(!D * !SCE * SET_B * !Q * Q_N)	0.00524	0.00508	0.00496
	(!D * !SCE * SET_B * !Q * Q_N)	0.00730	0.00713	0.00701
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00694	0.00677	0.00660
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00899	0.00881	0.00864
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00528	0.00512	0.00500
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00734	0.00717	0.00705
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00698	0.00680	0.00664
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00902	0.00885	0.00867
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00712	0.00696	0.00674
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00918	0.00901	0.00878

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT						OUTPUT	
D	SCD	SCE	RESET_B	SET_B	CLK	Q	Q_N
0	0	x	1	1	R	0	1
0	1	0	1	1	R	0	1
x	1	1	1	1	R	1	0
1	x	0	1	1	R	1	0
1	0	1	1	1	R	0	1
x	x	x	x	0	x	1	0
x	x	x	0	1	x	0	1
x	x	x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbp_1	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	SCD	SCE	RESET_B	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__sdfbbp_1	0.00177	0.00155	0.00365	0.00151	0.00582	0.00268	0.18616	0.18084

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	0.00066	0.00074

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RR)	2.17726	3.50737	11.63240
	SET_B->Q (FR)	0.93932	2.61268	13.86430

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	1.42288	2.10906	4.99036
	RESET_B->Q (FF)	1.05035	2.06434	7.84595
	SET_B->Q (RF)	0.54222	1.24481	4.37770

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q_N (RR)	1.27200	2.65261	10.74840
	RESET_B->Q_N (FR)	0.89996	2.62156	13.62560
	SET_B->Q_N (RR)	0.39153	1.80488	10.18410

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q_N (RF)	1.81473	2.72778	5.81483
	SET_B->Q_N (FF)	0.66680	1.77903	8.04112

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.20935	-0.35210	-1.34357
	setup	CLK (R)	0.61995	0.65443	1.52424

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-1.59477	-1.66676	-4.83479
	setup	CLK (R)	2.00537	2.06939	5.07462

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.20935	-0.35210	-1.34357
	setup	CLK (R)	0.61995	0.65443	1.52424

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-1.59477	-1.66676	-4.83479
	setup	CLK (R)	2.00537	2.06939	5.07462

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.22992	-0.36299	-1.53606
	setup	CLK (R)	0.64828	0.67251	1.68828

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-1.89555	-2.04604	-5.55923
	setup	CLK (R)	2.34932	2.48933	5.79240

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.23133	-0.36331	-1.53933
	hold	CLK (R)	-0.22992	-0.36299	-1.53606
	setup	CLK (R)	0.64828	0.67251	1.68828
	setup	CLK (R)	0.64639	0.67187	1.68439

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-1.89555	-2.04604	-5.56681
	hold	CLK (R)	-1.91614	-2.07064	-5.55923
	setup	CLK (R)	2.31465	2.45956	5.78255
	setup	CLK (R)	2.34932	2.48933	5.79240

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.21771	-0.36601	-1.44123
	setup	CLK (R)	2.24065	2.17564	1.73617

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.52013	-0.78517	-4.21796
	setup	CLK (R)	2.00495	2.13000	5.40388

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-1.81968	-1.76325	-1.50586
	hold	CLK (R)	-0.21771	-0.36601	-1.44123
	setup	CLK (R)	2.24065	2.17564	1.73617
	setup	CLK (R)	0.62991	0.67265	1.61552

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	hold	CLK (R)	-0.52013	-0.78517	-4.21796
	hold	CLK (R)	-1.58697	-1.72360	-5.17674
	setup	CLK (R)	0.93063	1.09323	4.32532
	setup	CLK (R)	2.00495	2.13000	5.40388

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	recovery	CLK (R)	0.51905	0.53359	0.76141
	removal	CLK (R)	-0.10706	-0.13252	-0.18658

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	recovery	CLK (R)	0.51905	0.53359	0.76141
	recovery	CLK (R)	0.51448	0.53272	0.75766
	recovery	CLK (R)	0.51545	0.53286	0.75780
	removal	CLK (R)	-0.10706	-0.13263	-0.18831
	removal	CLK (R)	-0.10996	-0.13252	-0.18658
	removal	CLK (R)	-0.10996	-0.13252	-0.18658

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	min_pulse_width	RESET_B ()	0.95692	1.68246	16.50020
	min_pulse_width	RESET_B ()	0.96907	1.68246	16.50020

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	recovery	CLK (R)	0.03758	-0.00619	0.19540
	removal	CLK (R)	0.37963	0.42274	0.65882
	hold	RESET_B (R)	-0.20147	-0.38258	-1.62705
	setup	RESET_B (R)	0.60564	0.64410	1.96294

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	recovery	CLK (R)	0.03628	-0.00626	0.19345
	recovery	CLK (R)	0.03758	-0.00619	0.19362
	recovery	CLK (R)	0.03421	-0.00891	0.19540
	removal	CLK (R)	0.37620	0.42163	0.65792
	removal	CLK (R)	0.37620	0.42163	0.65882
	removal	CLK (R)	0.37963	0.42274	0.65598
	hold	RESET_B (R)	-0.20147	-0.38514	-1.62960
	hold	RESET_B (R)	-0.20274	-0.38258	-1.62705
	setup	RESET_B (R)	0.56842	0.60855	1.96294
	setup	RESET_B (R)	0.60564	0.64410	1.95247

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	min_pulse_width	SET_B ()	0.67561	1.74832	16.50020
	min_pulse_width	SET_B ()	0.69746	1.76566	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	min_pulse_width	CLK ()	0.41995	1.45020	16.50020
	min_pulse_width	CLK ()	0.73496	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfbbp_1	min_pulse_width	CLK ()	1.10433	1.67552	16.50020
	min_pulse_width	CLK ()	1.84772	2.00139	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00829	0.00833	0.00835
	CLK	0.00724	0.00728	0.00730
	SET_B	0.00703	0.00700	0.00699
	SET_B	0.00927	0.00924	0.00910

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00830	0.00824	0.00798
	CLK	0.00712	0.00707	0.00681
	RESET_B	0.00816	0.00821	0.00787
	RESET_B	0.00869	0.00873	0.00837
	SET_B	0.00875	0.00863	0.00828
	SET_B	0.00651	0.00640	0.00603

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00825	0.00818	0.00815
	CLK	0.00707	0.00701	0.00698
	RESET_B	0.00817	0.00821	0.00824
	RESET_B	0.00869	0.00874	0.00860
	SET_B	0.00876	0.00864	0.00850
	SET_B	0.00651	0.00641	0.00626

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.00827	0.00832	0.00816
	CLK	0.00722	0.00727	0.00711
	SET_B	0.00699	0.00696	0.00663
	SET_B	0.00923	0.00920	0.00885

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00060	0.00061	0.00061
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCE)	0.00232	0.00225	0.00219
	(CLK * !SCE)	0.00079	0.00071	0.00066
	(CLK * !SCD * SCE)	0.00027	0.00027	0.00027
	(CLK * !SCD * SCE)	-0.00070	-0.00071	-0.00071
	(!CLK * SCD * SCE)	0.00060	0.00061	0.00061
	(!CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00605	0.00597	0.00586
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00463	0.00455	0.00444
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00394	0.00389	0.00382
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00227	0.00222	0.00215
	(!CLK * !SCD * SCE)	0.00027	0.00027	0.00027
	(!CLK * !SCD * SCE)	-0.00070	-0.00071	-0.00071
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00348	0.00344	0.00336
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00182	0.00177	0.00170

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00059	-0.00060	-0.00061
	(CLK * SCD * SCE)	0.00037	0.00038	0.00036
	(CLK * !SCE)	0.00066	0.00058	0.00056
	(CLK * !SCE)	0.00219	0.00211	0.00209
	(CLK * !SCD * SCE)	-0.00027	-0.00027	-0.00026
	(CLK * !SCD * SCE)	0.00071	0.00071	0.00071
	(!CLK * SCD * SCE)	-0.00059	-0.00060	-0.00061
	(!CLK * SCD * SCE)	0.00038	0.00038	0.00036
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00459	0.00449	0.00436
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00601	0.00590	0.00575
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00181	0.00171	0.00163
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00348	0.00339	0.00330
	(!CLK * !SCD * SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * !SCD * SCE)	0.00071	0.00071	0.00071
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00222	0.00213	0.00208
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00389	0.00380	0.00373

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00284	0.00281	0.00274
	(CLK * D * SCE)	0.00099	0.00093	0.00088
	(CLK * !D * SCE)	0.00306	0.00303	0.00294
	(CLK * !D * SCE)	0.00119	0.00115	0.00108
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00445	0.00442	0.00436
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00246	0.00242	0.00236
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00656	0.00650	0.00639
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00482	0.00475	0.00465
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00400	0.00397	0.00390
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00201	0.00197	0.00190
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00467	0.00464	0.00456
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00267	0.00263	0.00255
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00678	0.00673	0.00660
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00503	0.00497	0.00485
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00422	0.00419	0.00410
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00222	0.00218	0.00210
	!SCE	0.00045	0.00045	0.00045
	!SCE	-0.00059	-0.00060	-0.00059

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00125	0.00122	0.00120
	(CLK * D * SCE)	0.00312	0.00309	0.00305
	(CLK * !D * SCE)	0.00108	0.00105	0.00105
	(CLK * !D * SCE)	0.00296	0.00292	0.00291
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00238	0.00234	0.00216
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00440	0.00436	0.00412
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00515	0.00511	0.00472
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00691	0.00687	0.00639
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00279	0.00276	0.00258
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00480	0.00476	0.00453
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00221	0.00218	0.00199
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00424	0.00420	0.00394
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00498	0.00495	0.00457
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00674	0.00671	0.00620
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00262	0.00259	0.00241
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00463	0.00460	0.00434
	!SCE	-0.00044	-0.00045	-0.00045
	!SCE	0.00060	0.00060	0.00059

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00251	0.00243	0.00236
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00016	-0.00025	-0.00030
	(CLK * D * !SCD)	0.00420	0.00408	0.00397
	(CLK * D * !SCD)	0.00226	0.00213	0.00199
	(CLK * !D * SCD)	0.00450	0.00437	0.00424
	(CLK * !D * SCD)	0.00125	0.00109	0.00098
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00262	0.00253	0.00248
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00005	-0.00014	-0.00020
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00815	0.00810	0.00798
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00609	0.00600	0.00589
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00538	0.00532	0.00518
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00358	0.00349	0.00334
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00580	0.00573	0.00562
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00399	0.00389	0.00377
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00623	0.00610	0.00597
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00282	0.00269	0.00258
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00834	0.00818	0.00801
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00518	0.00503	0.00487
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00263	0.00255	0.00250
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00009	0.00001	-0.00004
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00578	0.00565	0.00551
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00237	0.00224	0.00212

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00017	-0.00023	-0.00025
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00248	0.00244	0.00242
	(CLK * D * !SCD)	0.00203	0.00198	0.00191
	(CLK * D * !SCD)	0.00400	0.00394	0.00388
	(CLK * !D * SCD)	0.00074	0.00061	0.00058
	(CLK * !D * SCD)	0.00399	0.00387	0.00385
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00027	-0.00034	-0.00035
	(!CLK * D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (!CLK * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (!CLK * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00237	0.00233	0.00231
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00561	0.00559	0.00552
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00770	0.00767	0.00760
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00351	0.00349	0.00344
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00534	0.00531	0.00526
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00305	0.00303	0.00298
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00489	0.00486	0.00481
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00178	0.00164	0.00153
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00517	0.00504	0.00491
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00456	0.00443	0.00422
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00771	0.00757	0.00732
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00021	-0.00026	-0.00028
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00234	0.00227	0.00226
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00219	0.00205	0.00197
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00557	0.00545	0.00534

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SET_B * !Q * Q_N) + (!CLK * D * !SCD * SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N)	0.00294	0.00289	0.00284
	(CLK * SET_B * !Q * Q_N) + (!CLK * D * !SCD * SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N)	0.00167	0.00161	0.00157
	(!SET_B * Q * !Q_N)	0.00322	0.00315	0.00311
	(!SET_B * Q * !Q_N)	0.00192	0.00186	0.00181
	(!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * !SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00556	0.00542	0.00533
	(!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * !SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00454	0.00440	0.00431

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SET_B * !Q * Q_N) + (!CLK * D * !SCD * SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N)	0.00157	0.00151	0.00149
	(CLK * SET_B * !Q * Q_N) + (!CLK * D * !SCD * SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N)	0.00285	0.00278	0.00276
	(!SET_B * Q * !Q_N)	0.00096	0.00090	0.00084
	(!SET_B * Q * !Q_N)	0.00228	0.00220	0.00214
	(!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * !SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00419	0.00411	0.00401
	(!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * !SCD * !SCE * SET_B * !Q * Q_N) + (!CLK * !D * SCD * SCE * SET_B * !Q * Q_N)	0.00523	0.00513	0.00503

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SCE * Q * !Q_N)	0.00170	0.00171	0.00169
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SCE * Q * !Q_N)	-0.00240	-0.00240	-0.00239
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	0.00436	0.00430	0.00425
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	-0.00001	-0.00011	-0.00015

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SCE * Q * !Q_N)	-0.00168	-0.00170	-0.00169
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SCE * Q * !Q_N)	0.00240	0.00241	0.00239
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	0.00091	0.00080	0.00072
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	0.00531	0.00519	0.00512

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00756	0.00739	0.00725
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00533	0.00517	0.00502
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00768	0.00751	0.00737
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00545	0.00529	0.00515
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00741	0.00723	0.00710
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00519	0.00500	0.00488
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00942	0.00925	0.00916
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00705	0.00689	0.00680
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00898	0.00875	0.00860
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00689	0.00667	0.00651
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00911	0.00888	0.00872
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00702	0.00679	0.00663
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00756	0.00739	0.00725
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00533	0.00517	0.00502
	(!D * !SCE * SET_B * !Q * Q_N)	0.00753	0.00735	0.00723
	(!D * !SCE * SET_B * !Q * Q_N)	0.00531	0.00512	0.00500
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00954	0.00938	0.00929
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00717	0.00701	0.00692
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00741	0.00723	0.00710
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00519	0.00500	0.00488
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00943	0.00926	0.00916
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00706	0.00690	0.00680
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00898	0.00875	0.00860
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00690	0.00667	0.00651

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00799	0.00783	0.00764
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01034	0.01017	0.00998
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00418	0.00403	0.00392
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00642	0.00626	0.00615
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00788	0.00771	0.00751
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01023	0.01005	0.00985
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00406	0.00391	0.00380
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00630	0.00613	0.00603
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00867	0.00850	0.00844
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01081	0.01064	0.01055
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00424	0.00409	0.00398
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00647	0.00631	0.00620
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00584	0.00565	0.00561
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00822	0.00802	0.00798
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00528	0.00512	0.00497
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00738	0.00721	0.00706
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00516	0.00500	0.00485
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00726	0.00709	0.00694
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00799	0.00782	0.00763
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01034	0.01017	0.00997
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00418	0.00403	0.00392
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00642	0.00626	0.00615
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.00853	0.00836	0.00832
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01066	0.01049	0.01042
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.00866	0.00850	0.00842
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01080	0.01063	0.01051
	(!D * !SCE * SET_B * !Q * Q_N)	0.00412	0.00396	0.00386
	(!D * !SCE * SET_B * !Q * Q_N)	0.00635	0.00619	0.00609
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00572	0.00553	0.00550
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00810	0.00790	0.00786
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00424	0.00409	0.00398
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00647	0.00631	0.00620
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00584	0.00566	0.00561
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00822	0.00803	0.00797
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00528	0.00512	0.00497
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00738	0.00721	0.00706

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT	
D	SCD	SCE	RESET_B	CLK	Q	Q_N
0	0	x	1	R	0	1
0	1	0	1	R	0	1
x	1	1	1	R	1	0
1	x	0	1	R	1	0
1	0	1	1	R	0	1
x	x	x	0	x	0	1
x	x	x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrbp_1	46.35360
sky130_fd_sc_hs__sdfrbp_2	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	SCD	SCE	RESET_B	CLK	Q	Q_N
sky130_fd_sc_hs__sdfrbp_1	0.00168	0.00171	0.00383	0.00541	0.00281	0.18472	0.18877
sky130_fd_sc_hs__sdfrbp_2	0.00170	0.00173	0.00395	0.00543	0.00276	0.37796	0.37436

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.00060	0.00068
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.00067	0.00077

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RR)	1.43763	2.74182	10.67340
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	1.77779	2.86571	11.25490

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.95052	1.64914	4.52253
	RESET_B->Q (FF)	1.49929	2.53755	8.91438
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	1.08804	1.77373	4.71112
	RESET_B->Q (FF)	1.64677	2.67367	9.11623

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q_N (RR)	0.79855	2.19089	10.26290
	RESET_B->Q_N (FR)	1.34912	3.07111	14.64080
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.79074	2.00951	10.24530
	RESET_B->Q_N (FR)	1.35153	2.90236	14.63340

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q_N (RF)	1.06090	2.01648	5.09162
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	1.26547	2.22943	5.38571

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.20728	-0.37111	-1.39802
	setup	CLK (R)	0.63658	0.67795	1.84154
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.21688	-0.38687	-1.45928
	setup	CLK (R)	0.55266	0.61826	1.89181

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.24596	-0.48146	-4.27311
	setup	CLK (R)	2.18405	2.24000	5.33747
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.38653	-0.65318	-4.41377
	setup	CLK (R)	2.27375	2.33436	5.42646

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.20728	-0.37240	-1.39882
	hold	CLK (R)	-0.20807	-0.37111	-1.39802
	setup	CLK (R)	0.63658	0.67795	1.84154
	setup	CLK (R)	0.63553	0.67631	1.83854
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.21735	-0.38687	-1.45968
	hold	CLK (R)	-0.21688	-0.38741	-1.45928
	setup	CLK (R)	0.55266	0.61826	1.89153
	setup	CLK (R)	0.55258	0.61800	1.89181

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.24596	-0.48193	-4.27311
	hold	CLK (R)	-0.24605	-0.48146	-4.27498
	setup	CLK (R)	2.18374	2.23996	5.33747
	setup	CLK (R)	2.18405	2.24000	5.33695
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.38653	-0.65424	-4.41377
	hold	CLK (R)	-0.38960	-0.65318	-4.41469
	setup	CLK (R)	2.27375	2.33436	5.42646
	setup	CLK (R)	2.27104	2.33427	5.42373

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.24165	-0.39914	-1.64329
	setup	CLK (R)	0.66959	0.70021	2.00661
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.24854	-0.40793	-1.68256
	setup	CLK (R)	0.58432	0.63749	2.04404

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.34810	-0.65201	-5.06506
	setup	CLK (R)	2.51707	2.62716	6.04105
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.49588	-0.82828	-5.18451
	setup	CLK (R)	2.59864	2.71404	6.12270

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.24275	-0.39932	-1.65531
	hold	CLK (R)	-0.24165	-0.39914	-1.64329
	setup	CLK (R)	0.66959	0.70021	2.00661
	setup	CLK (R)	0.66023	0.69481	1.99564
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.24854	-0.40793	-1.68817
	hold	CLK (R)	-0.25229	-0.41050	-1.68256
	setup	CLK (R)	0.58432	0.63749	2.04404
	setup	CLK (R)	0.57933	0.63135	2.03898

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.37986	-0.67816	-5.14524
	hold	CLK (R)	-0.34810	-0.65201	-5.06506
	setup	CLK (R)	2.48609	2.60645	6.02829
	setup	CLK (R)	2.51707	2.62716	6.04105
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.53565	-0.87309	-5.23915
	hold	CLK (R)	-0.49588	-0.82828	-5.18451
	setup	CLK (R)	2.56090	2.68465	6.10610
	setup	CLK (R)	2.59864	2.71404	6.12270

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.20726	-0.36691	-1.30197
	setup	CLK (R)	2.41514	2.37270	2.13934
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.21368	-0.37864	-1.38477
	setup	CLK (R)	2.49988	2.44899	2.15678

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.29422	-0.58540	-4.46805
	setup	CLK (R)	2.23156	2.34774	5.74116
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.42321	-0.74286	-4.42212
	setup	CLK (R)	2.30588	2.43130	5.82326

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.30790	-0.45619	-1.30197
	hold	CLK (R)	-0.20726	-0.36691	-1.44326
	setup	CLK (R)	2.41514	2.37270	2.13934
	setup	CLK (R)	0.62362	0.66833	1.86855
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.47296	-0.64666	-1.38477
	hold	CLK (R)	-0.21368	-0.37864	-1.48334
	setup	CLK (R)	2.49988	2.44899	2.15678
	setup	CLK (R)	0.54046	0.60274	1.90854

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	hold	CLK (R)	-0.58269	-0.87833	-4.46805
	hold	CLK (R)	-0.29422	-0.58540	-4.83130
	setup	CLK (R)	1.01227	1.17860	4.71110
	setup	CLK (R)	2.23156	2.34774	5.74116
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.57120	-0.86800	-4.42212
	hold	CLK (R)	-0.42321	-0.74286	-4.94580
	setup	CLK (R)	0.90849	1.09391	4.67300
	setup	CLK (R)	2.30588	2.43130	5.82326

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	recovery	CLK (R)	0.70599	0.71209	1.96534
	removal	CLK (R)	-0.42506	-0.51105	-1.81445
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.62210	0.64695	1.99463
	removal	CLK (R)	-0.45153	-0.53489	-1.85246

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	recovery	CLK (R)	0.70599	0.71209	1.96534
	recovery	CLK (R)	0.70447	0.70744	1.91861
	recovery	CLK (R)	0.69492	0.69227	1.87308
	recovery	CLK (R)	0.69521	0.70474	1.95605
	removal	CLK (R)	-0.44465	-0.53562	-1.90885
	removal	CLK (R)	-0.43092	-0.52742	-1.86069
	removal	CLK (R)	-0.42506	-0.51105	-1.81445
	removal	CLK (R)	-0.42798	-0.52801	-1.90328
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.62067	0.64695	1.99463
	recovery	CLK (R)	0.62210	0.64469	1.95231
	recovery	CLK (R)	0.61378	0.62686	1.90895
	recovery	CLK (R)	0.61417	0.63732	1.99442
	removal	CLK (R)	-0.45817	-0.55071	-1.94329
	removal	CLK (R)	-0.45842	-0.54874	-1.89721
	removal	CLK (R)	-0.45153	-0.53489	-1.85246
	removal	CLK (R)	-0.45236	-0.54757	-1.93991

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	min_pulse_width	RESET_B ()	0.95468	2.04298	16.50020
	min_pulse_width	RESET_B ()	0.69852	1.79686	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.96669	2.05338	16.50020
	min_pulse_width	RESET_B ()	0.73575	1.82806	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	min_pulse_width	CLK ()	0.96993	1.45020	16.50020
	min_pulse_width	CLK ()	0.35281	1.45020	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	1.31076	1.45020	16.50020
	min_pulse_width	CLK ()	0.37863	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrbp_1	min_pulse_width	CLK ()	1.02273	1.66512	16.50020
	min_pulse_width	CLK ()	1.95524	2.08112	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.93086	1.66166	16.50020
	min_pulse_width	CLK ()	1.96497	2.09152	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00760	0.00758	0.00752
	CLK	0.00646	0.00643	0.00638
sky130_fd_sc_hs__sdfrbp_2	CLK	0.00891	0.00899	0.00902
	CLK	0.00774	0.00782	0.00785

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00775	0.00773	0.00758
	CLK	0.00663	0.00660	0.00646
	RESET_B	0.00636	0.00632	0.00604
	RESET_B	0.00890	0.00886	0.00856
sky130_fd_sc_hs__sdfrbp_2	CLK	0.00901	0.00909	0.00889
	CLK	0.00796	0.00804	0.00785
	RESET_B	0.00768	0.00776	0.00743
	RESET_B	0.01028	0.01035	0.01002

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00775	0.00773	0.00776
	CLK	0.00663	0.00660	0.00664
	RESET_B	0.00638	0.00634	0.00623
	RESET_B	0.00892	0.00887	0.00875
sky130_fd_sc_hs__sdfrbp_2	CLK	0.00901	0.00910	0.00917
	CLK	0.00797	0.00805	0.00812
	RESET_B	0.00770	0.00777	0.00766
	RESET_B	0.01031	0.01037	0.01031

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00760	0.00757	0.00733
	CLK	0.00646	0.00643	0.00619
sky130_fd_sc_hs__sdfrbp_2	CLK	0.00891	0.00899	0.00878
	CLK	0.00773	0.00781	0.00761

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00059	0.00060	0.00059
	(CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00272	0.00266	0.00261
	(CLK * RESET_B * SCD * !SCE)	0.00101	0.00095	0.00090
	(CLK * RESET_B * !SCD * !SCE)	0.00272	0.00266	0.00261
	(CLK * RESET_B * !SCD * !SCE)	0.00101	0.00095	0.00090
	(CLK * !SCD * SCE)	0.00034	0.00034	0.00034
	(CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00062
	(CLK * !RESET_B * SCD * SCE)	0.00033	0.00033	0.00033
	(CLK * !RESET_B * SCD * SCE)	-0.00062	-0.00062	-0.00062
	(CLK * !RESET_B * SCD * !SCE)	0.00025	0.00025	0.00021
	(CLK * !RESET_B * SCD * !SCE)	-0.00069	-0.00070	-0.00075
	(CLK * !RESET_B * !SCD * !SCE)	0.00024	0.00024	0.00021
	(CLK * !RESET_B * !SCD * !SCE)	-0.00072	-0.00072	-0.00075
	(!CLK * RESET_B * SCD * SCE)	0.00059	0.00060	0.00059
	(!CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00616	0.00611	0.00602
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00435	0.00430	0.00421
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00616	0.00611	0.00602
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00435	0.00430	0.00421
	(!CLK * !SCD * SCE)	0.00034	0.00035	0.00034
	(!CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00062
	(!CLK * !RESET_B * SCD * SCE)	0.00033	0.00033	0.00033
	(!CLK * !RESET_B * SCD * SCE)	-0.00062	-0.00062	-0.00062
	(!CLK * !RESET_B * SCD * !SCE)	0.00025	0.00025	0.00021
	(!CLK * !RESET_B * SCD * !SCE)	-0.00069	-0.00070	-0.00075
	(!CLK * !RESET_B * !SCD * !SCE)	0.00024	0.00024	0.00021
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00072	-0.00072	-0.00075

	(CLK * RESET_B * SCD * SCE)	0.00061	0.00061	0.00061
	(CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00290	0.00284	0.00279
	(CLK * RESET_B * SCD * !SCE)	0.00116	0.00110	0.00104
	(CLK * RESET_B * !SCD * !SCE)	0.00290	0.00284	0.00279
	(CLK * RESET_B * !SCD * !SCE)	0.00116	0.00110	0.00104
	(CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(CLK * !RESET_B * SCD * SCE)	0.00033	0.00034	0.00033
	(CLK * !RESET_B * SCD * SCE)	-0.00062	-0.00063	-0.00063
	(CLK * !RESET_B * SCD * !SCE)	0.00024	0.00024	0.00021
	(CLK * !RESET_B * SCD * !SCE)	-0.00072	-0.00072	-0.00077
	(CLK * !RESET_B * !SCD * !SCE)	0.00023	0.00023	0.00021
	(CLK * !RESET_B * !SCD * !SCE)	-0.00074	-0.00074	-0.00078
	(!CLK * RESET_B * SCD * SCE)	0.00061	0.00061	0.00061
	(!CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00635	0.00631	0.00622
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00451	0.00446	0.00437
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00636	0.00631	0.00622
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00451	0.00447	0.00437
	(!CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(!CLK * !RESET_B * SCD * SCE)	0.00033	0.00034	0.00033
	(!CLK * !RESET_B * SCD * SCE)	-0.00062	-0.00063	-0.00063
	(!CLK * !RESET_B * SCD * !SCE)	0.00024	0.00024	0.00021
	(!CLK * !RESET_B * SCD * !SCE)	-0.00072	-0.00072	-0.00077
	(!CLK * !RESET_B * !SCD * !SCE)	0.00023	0.00023	0.00021
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00074	-0.00074	-0.00078

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	-0.00058	-0.00059	-0.00059
	(CLK * RESET_B * SCD * SCE)	0.00036	0.00036	0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00040	0.00032	0.00031
	(CLK * RESET_B * SCD * !SCE)	0.00212	0.00204	0.00202
	(CLK * RESET_B * !SCD * !SCE)	0.00040	0.00032	0.00031
	(CLK * RESET_B * !SCD * !SCE)	0.00212	0.00204	0.00201
	(CLK * !SCD * SCE)	-0.00033	-0.00033	-0.00033
	(CLK * !SCD * SCE)	0.00062	0.00062	0.00062
	(CLK * !RESET_B * SCD * SCE)	-0.00033	-0.00033	-0.00032
	(CLK * !RESET_B * SCD * SCE)	0.00062	0.00062	0.00062
	(CLK * !RESET_B * SCD * !SCE)	-0.00020	-0.00021	-0.00020
	(CLK * !RESET_B * SCD * !SCE)	0.00075	0.00076	0.00076
	(CLK * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00020
	(CLK * !RESET_B * !SCD * !SCE)	0.00075	0.00076	0.00076
	(!CLK * RESET_B * SCD * SCE)	-0.00058	-0.00059	-0.00059
	(!CLK * RESET_B * SCD * SCE)	0.00036	0.00036	0.00035
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00356	0.00346	0.00325
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00537	0.00528	0.00499
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00356	0.00346	0.00325
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00537	0.00528	0.00499
	(!CLK * !SCD * SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * !SCD * SCE)	0.00062	0.00062	0.00062
	(!CLK * !RESET_B * SCD * SCE)	-0.00033	-0.00033	-0.00032
	(!CLK * !RESET_B * SCD * SCE)	0.00062	0.00062	0.00062
	(!CLK * !RESET_B * SCD * !SCE)	-0.00020	-0.00021	-0.00020
	(!CLK * !RESET_B * SCD * !SCE)	0.00075	0.00076	0.00076
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00020
	(!CLK * !RESET_B * !SCD * !SCE)	0.00075	0.00076	0.00076

	(CLK * RESET_B * SCD * SCE)	-0.00059	-0.00060	-0.00061
	(CLK * RESET_B * SCD * SCE)	0.00036	0.00036	0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00047	0.00038	0.00037
	(CLK * RESET_B * SCD * !SCE)	0.00222	0.00213	0.00211
	(CLK * RESET_B * !SCD * !SCE)	0.00047	0.00038	0.00037
	(CLK * RESET_B * !SCD * !SCE)	0.00222	0.00213	0.00211
	(CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(CLK * !SCD * SCE)	0.00063	0.00063	0.00062
	(CLK * !RESET_B * SCD * SCE)	-0.00033	-0.00033	-0.00033
	(CLK * !RESET_B * SCD * SCE)	0.00063	0.00063	0.00063
	(CLK * !RESET_B * SCD * !SCE)	-0.00020	-0.00020	-0.00019
	(CLK * !RESET_B * SCD * !SCE)	0.00077	0.00078	0.00078
	(CLK * !RESET_B * !SCD * !SCE)	-0.00020	-0.00020	-0.00019
	(CLK * !RESET_B * !SCD * !SCE)	0.00077	0.00078	0.00078
	(!CLK * RESET_B * SCD * SCE)	-0.00060	-0.00060	-0.00061
	(!CLK * RESET_B * SCD * SCE)	0.00036	0.00036	0.00035
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00362	0.00353	0.00328
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00547	0.00538	0.00504
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00362	0.00353	0.00328
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00547	0.00538	0.00504
	(!CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(!CLK * !SCD * SCE)	0.00063	0.00063	0.00062
	(!CLK * !RESET_B * SCD * SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * !RESET_B * SCD * SCE)	0.00063	0.00063	0.00063
	(!CLK * !RESET_B * SCD * !SCE)	-0.00020	-0.00020	-0.00019
	(!CLK * !RESET_B * SCD * !SCE)	0.00077	0.00078	0.00078
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00020	-0.00020	-0.00020
	(!CLK * !RESET_B * !SCD * !SCE)	0.00077	0.00078	0.00078

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00328	0.00323	0.00318
	(CLK * D * RESET_B * SCE)	0.00121	0.00116	0.00111
	(CLK * D * RESET_B * !SCE)	0.00048	0.00049	0.00048
	(CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00060
	(CLK * D * !RESET_B * SCE)	0.00030	0.00030	0.00029
	(CLK * D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00065
	(CLK * D * !RESET_B * !SCE)	0.00022	0.00022	0.00022
	(CLK * D * !RESET_B * !SCE)	-0.00071	-0.00072	-0.00072
	(CLK * !D * RESET_B * SCE)	0.00350	0.00345	0.00338
	(CLK * !D * RESET_B * SCE)	0.00142	0.00138	0.00131
	(CLK * !D * !RESET_B * SCE)	0.00030	0.00030	0.00030
	(CLK * !D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00065
	(!D * RESET_B * !SCE)	0.00038	0.00038	0.00038
	(!D * RESET_B * !SCE)	-0.00070	-0.00071	-0.00070
	(!D * !RESET_B * !SCE)	0.00024	0.00024	0.00024
	(!D * !RESET_B * !SCE)	-0.00073	-0.00074	-0.00074
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00671	0.00667	0.00658
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00455	0.00450	0.00442
	(!CLK * D * RESET_B * !SCE)	0.00049	0.00049	0.00048
	(!CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00060
	(!CLK * D * !RESET_B * SCE)	0.00030	0.00030	0.00029
	(!CLK * D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00065
	(!CLK * D * !RESET_B * !SCE)	0.00022	0.00022	0.00022
	(!CLK * D * !RESET_B * !SCE)	-0.00071	-0.00072	-0.00072
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00693	0.00689	0.00680
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00476	0.00472	0.00462
	(!CLK * !D * !RESET_B * SCE)	0.00030	0.00030	0.00030
	(!CLK * !D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00065

	(CLK * D * RESET_B * SCE)	0.00342	0.00338	0.00332
	(CLK * D * RESET_B * SCE)	0.00132	0.00127	0.00122
	(CLK * D * RESET_B * !SCE)	0.00050	0.00050	0.00050
	(CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00060
	(CLK * D * !RESET_B * SCE)	0.00031	0.00031	0.00031
	(CLK * D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00065
	(CLK * D * !RESET_B * !SCE)	0.00023	0.00023	0.00023
	(CLK * D * !RESET_B * !SCE)	-0.00072	-0.00073	-0.00072
	(CLK * !D * RESET_B * SCE)	0.00364	0.00360	0.00353
	(CLK * !D * RESET_B * SCE)	0.00153	0.00148	0.00142
	(CLK * !D * !RESET_B * SCE)	0.00032	0.00031	0.00031
	(CLK * !D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00065
	(!D * RESET_B * !SCE)	0.00039	0.00039	0.00039
	(!D * RESET_B * !SCE)	-0.00070	-0.00071	-0.00071
	(!D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(!D * !RESET_B * !SCE)	-0.00074	-0.00075	-0.00075
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00687	0.00684	0.00675
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00468	0.00463	0.00455
	(!CLK * D * RESET_B * !SCE)	0.00050	0.00050	0.00050
	(!CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00060
	(!CLK * D * !RESET_B * SCE)	0.00031	0.00031	0.00031
	(!CLK * D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00065
	(!CLK * D * !RESET_B * !SCE)	0.00023	0.00023	0.00023
	(!CLK * D * !RESET_B * !SCE)	-0.00072	-0.00073	-0.00072
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00710	0.00706	0.00696
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00489	0.00484	0.00475
	(!CLK * !D * !RESET_B * SCE)	0.00032	0.00031	0.00031
	(!CLK * !D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00065

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00094	0.00087	0.00083
	(CLK * D * RESET_B * SCE)	0.00302	0.00294	0.00288
	(CLK * D * RESET_B * !SCE)	-0.00048	-0.00049	-0.00048
	(CLK * D * RESET_B * !SCE)	0.00060	0.00060	0.00060
	(CLK * D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * SCE)	0.00067	0.00067	0.00066
	(CLK * D * !RESET_B * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * D * !RESET_B * !SCE)	0.00072	0.00072	0.00072
	(CLK * !D * RESET_B * SCE)	0.00073	0.00066	0.00065
	(CLK * !D * RESET_B * SCE)	0.00281	0.00274	0.00271
	(CLK * !D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !D * !RESET_B * SCE)	0.00067	0.00067	0.00066
	(!D * RESET_B * !SCE)	-0.00037	-0.00038	-0.00038
	(!D * RESET_B * !SCE)	0.00070	0.00071	0.00070
	(!D * !RESET_B * !SCE)	-0.00024	-0.00024	-0.00024
	(!D * !RESET_B * !SCE)	0.00075	0.00075	0.00075
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00408	0.00400	0.00339
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00625	0.00617	0.00542
	(!CLK * D * RESET_B * !SCE)	-0.00048	-0.00049	-0.00048
	(!CLK * D * RESET_B * !SCE)	0.00060	0.00060	0.00060
	(!CLK * D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * SCE)	0.00067	0.00067	0.00066
	(!CLK * D * !RESET_B * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * D * !RESET_B * !SCE)	0.00072	0.00072	0.00072
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00387	0.00380	0.00321
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00605	0.00597	0.00521
	(!CLK * !D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !D * !RESET_B * SCE)	0.00067	0.00067	0.00066

	(CLK * D * RESET_B * SCE)	0.00100	0.00091	0.00088
	(CLK * D * RESET_B * SCE)	0.00310	0.00302	0.00297
	(CLK * D * RESET_B * !SCE)	-0.00049	-0.00050	-0.00050
	(CLK * D * RESET_B * !SCE)	0.00060	0.00060	0.00060
	(CLK * D * !RESET_B * SCE)	-0.00029	-0.00029	-0.00030
	(CLK * D * !RESET_B * SCE)	0.00067	0.00067	0.00066
	(CLK * D * !RESET_B * !SCE)	-0.00023	-0.00023	-0.00023
	(CLK * D * !RESET_B * !SCE)	0.00073	0.00073	0.00073
	(CLK * !D * RESET_B * SCE)	0.00081	0.00074	0.00072
	(CLK * !D * RESET_B * SCE)	0.00292	0.00285	0.00282
	(CLK * !D * !RESET_B * SCE)	-0.00029	-0.00029	-0.00030
	(CLK * !D * !RESET_B * SCE)	0.00067	0.00067	0.00066
	(!D * RESET_B * !SCE)	-0.00038	-0.00039	-0.00039
	(!D * RESET_B * !SCE)	0.00071	0.00071	0.00071
	(!D * !RESET_B * !SCE)	-0.00025	-0.00025	-0.00025
	(!D * !RESET_B * !SCE)	0.00075	0.00076	0.00075
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00413	0.00405	0.00336
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00634	0.00626	0.00542
	(!CLK * D * RESET_B * !SCE)	-0.00049	-0.00050	-0.00050
	(!CLK * D * RESET_B * !SCE)	0.00060	0.00060	0.00060
	(!CLK * D * !RESET_B * SCE)	-0.00029	-0.00029	-0.00030
	(!CLK * D * !RESET_B * SCE)	0.00067	0.00067	0.00066
	(!CLK * D * !RESET_B * !SCE)	-0.00023	-0.00023	-0.00023
	(!CLK * D * !RESET_B * !SCE)	0.00073	0.00073	0.00073
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00395	0.00387	0.00320
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00616	0.00609	0.00522
	(!CLK * !D * !RESET_B * SCE)	-0.00029	-0.00029	-0.00030
	(!CLK * !D * !RESET_B * SCE)	0.00067	0.00067	0.00066

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00308	0.00298	0.00291
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00014	0.00002	-0.00005
	(CLK * D * RESET_B * !SCD)	0.00442	0.00430	0.00415
	(CLK * D * RESET_B * !SCD)	0.00240	0.00227	0.00211
	(CLK * !D * RESET_B * SCD)	0.00562	0.00546	0.00533
	(CLK * !D * RESET_B * SCD)	0.00187	0.00171	0.00159
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00308	0.00298	0.00291
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00014	0.00002	-0.00005
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00749	0.00742	0.00729
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00557	0.00548	0.00535
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00307	0.00296	0.00289
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00024	0.00011	0.00005
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00905	0.00890	0.00873
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00521	0.00505	0.00489

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00285	0.00274	0.00267
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00019	-0.00033	-0.00039
	(CLK * D * RESET_B * !SCD)	0.00428	0.00415	0.00400
	(CLK * D * RESET_B * !SCD)	0.00218	0.00203	0.00187
	(CLK * !D * RESET_B * SCD)	0.00553	0.00536	0.00523
	(CLK * !D * RESET_B * SCD)	0.00166	0.00149	0.00137
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00285	0.00274	0.00267
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00019	-0.00033	-0.00039
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00735	0.00728	0.00714
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00535	0.00525	0.00511
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00287	0.00275	0.00268
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00007	-0.00021	-0.00027
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00899	0.00882	0.00865
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00501	0.00485	0.00469

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00010	-0.00020	-0.00023
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00284	0.00275	0.00271
	(CLK * D * RESET_B * !SCD)	0.00253	0.00244	0.00236
	(CLK * D * RESET_B * !SCD)	0.00458	0.00446	0.00438
	(CLK * !D * RESET_B * SCD)	0.00068	0.00050	0.00046
	(CLK * !D * RESET_B * SCD)	0.00440	0.00424	0.00420
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00010	-0.00020	-0.00023
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00284	0.00275	0.00272
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00595	0.00588	0.00580
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00790	0.00781	0.00774
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00010	-0.00019	-0.00023
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00274	0.00263	0.00260
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00383	0.00365	0.00325
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00765	0.00749	0.00696

sky130_fd_sc_hs__sdfrbp_2	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00007	-0.00017	-0.00021
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00297	0.00288	0.00285
	(CLK * D * RESET_B * !SCD)	0.00275	0.00265	0.00256
	(CLK * D * RESET_B * !SCD)	0.00487	0.00476	0.00468
	(CLK * !D * RESET_B * SCD)	0.00073	0.00056	0.00052
	(CLK * !D * RESET_B * SCD)	0.00460	0.00443	0.00438
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00007	-0.00017	-0.00020
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00297	0.00288	0.00285
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00618	0.00611	0.00603
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00820	0.00812	0.00805
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00009	-0.00019	-0.00023
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00285	0.00275	0.00271
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00389	0.00371	0.00326
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00785	0.00768	0.00709

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00473	0.00466	0.00462
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00014	-0.00020	-0.00025
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00463	0.00458	0.00455
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00008	-0.00017	-0.00019
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00164	0.00164	0.00163
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00208	-0.00209	-0.00209
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00448	0.00442	0.00438
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00008	-0.00017	-0.00020
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00495	0.00491	0.00483
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00007	0.00001	-0.00005
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00162	0.00163	0.00162
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00210	-0.00211	-0.00210
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00164	0.00165	0.00163
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00208	-0.00209	-0.00209
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00163	0.00163	0.00162
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00211	-0.00211	-0.00210
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00847	0.00833	0.00820
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00352	0.00338	0.00324
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00837	0.00824	0.00812
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00357	0.00342	0.00330
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00164	0.00164	0.00164
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00208	-0.00209	-0.00208
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00822	0.00808	0.00796
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00357	0.00342	0.00330
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00869	0.00856	0.00840
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00373	0.00360	0.00344
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00162	0.00162	0.00162
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00209	-0.00210	-0.00209
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00163	0.00164	0.00164
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00208	-0.00209	-0.00208
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00162	0.00163	0.00162
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00210	-0.00210	-0.00210

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00480	0.00475	0.00469
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00008	-0.00016	-0.00019
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00475	0.00470	0.00466
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00001	-0.00007	-0.00009
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00157	0.00158	0.00157
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00213	-0.00214	-0.00214
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00460	0.00454	0.00450
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00002	-0.00007	-0.00010
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00502	0.00497	0.00490
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00013	0.00006	0.00001
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00154	0.00156	0.00155
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00214	-0.00215	-0.00215
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00158	0.00158	0.00157
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00213	-0.00214	-0.00214
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00155	0.00157	0.00156
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00214	-0.00215	-0.00215
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00852	0.00841	0.00827
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00358	0.00344	0.00330
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00849	0.00836	0.00824
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00367	0.00353	0.00340
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00157	0.00158	0.00157
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00214	-0.00215	-0.00214
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00833	0.00820	0.00807
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00367	0.00353	0.00340
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00875	0.00863	0.00847
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00379	0.00366	0.00351
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00155	0.00156	0.00155
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00215	-0.00215	-0.00215
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00156	0.00158	0.00157
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00214	-0.00215	-0.00214
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00155	0.00156	0.00155
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00216	-0.00216	-0.00215

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00011	0.00002	-0.00005
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00501	0.00491	0.00481
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00022	-0.00032	-0.00040
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00454	0.00443	0.00434
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00161	-0.00164	-0.00163
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00208	0.00211	0.00209
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00034	-0.00045	-0.00051
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00423	0.00414	0.00407
	(CLK * !D * SCD * SCE * !Q * Q_N)	-0.00010	-0.00019	-0.00024
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00481	0.00470	0.00464
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00160	-0.00163	-0.00162
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00211	0.00211	0.00210
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00161	-0.00165	-0.00163
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00208	0.00211	0.00209
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00161	-0.00163	-0.00162
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00212	0.00212	0.00210
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00351	0.00330	0.00308
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00848	0.00826	0.00803
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00318	0.00296	0.00274
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00802	0.00779	0.00755
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00162	-0.00164	-0.00164
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00208	0.00210	0.00209
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00306	0.00284	0.00263
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00773	0.00750	0.00728
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00331	0.00309	0.00289
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00828	0.00806	0.00785
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00160	-0.00162	-0.00162
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00211	0.00211	0.00209
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00162	-0.00164	-0.00164
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00208	0.00210	0.00209
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00161	-0.00163	-0.00162
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00211	0.00212	0.00210

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00022	0.00013	0.00006
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00514	0.00503	0.00494
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00014	-0.00024	-0.00031
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00464	0.00453	0.00444
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00155	-0.00157	-0.00157
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00213	0.00214	0.00214
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00026	-0.00036	-0.00042
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00435	0.00424	0.00417
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00004	-0.00005	-0.00010
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00496	0.00486	0.00478
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00154	-0.00155	-0.00155
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00216	0.00215	0.00215
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00155	-0.00157	-0.00157
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00213	0.00214	0.00214
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00154	-0.00156	-0.00156
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00217	0.00215	0.00215
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00364	0.00342	0.00322
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00862	0.00841	0.00816
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00328	0.00306	0.00284
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00813	0.00791	0.00767
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00155	-0.00157	-0.00157
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00214	0.00215	0.00214
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00316	0.00294	0.00273
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00784	0.00762	0.00740
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00346	0.00325	0.00305
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00845	0.00824	0.00802
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00153	-0.00155	-0.00155
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00217	0.00215	0.00215
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00155	-0.00157	-0.00157
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00214	0.00215	0.00214
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00154	-0.00156	-0.00155
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00217	0.00216	0.00216

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00729	0.00712	0.00700
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00503	0.00486	0.00473
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00729	0.00712	0.00700
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00503	0.00485	0.00473
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00729	0.00712	0.00700
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00503	0.00485	0.00473
	(D * !SCD * SCE * !Q * Q_N)	0.00756	0.00738	0.00725
	(D * !SCD * SCE * !Q * Q_N)	0.00530	0.00511	0.00499
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00756	0.00739	0.00726
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00530	0.00512	0.00499
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00756	0.00739	0.00726
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00530	0.00512	0.00499
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00756	0.00739	0.00726
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00530	0.00512	0.00499
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00729	0.00712	0.00700
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00503	0.00485	0.00473
	(!D * !SCE * !Q * Q_N)	0.00756	0.00738	0.00725
	(!D * !SCE * !Q * Q_N)	0.00530	0.00511	0.00499
	(!D * !SCD * SCE * !Q * Q_N)	0.00756	0.00738	0.00725
	(!D * !SCD * SCE * !Q * Q_N)	0.00530	0.00511	0.00499
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00756	0.00739	0.00726
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00530	0.00512	0.00499

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00732	0.00713	0.00701
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00511	0.00492	0.00479
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00732	0.00713	0.00701
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00511	0.00492	0.00479
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00732	0.00713	0.00701
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00511	0.00492	0.00479
	(D * !SCD * SCE * !Q * Q_N)	0.00754	0.00736	0.00722
	(D * !SCD * SCE * !Q * Q_N)	0.00533	0.00514	0.00500
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00754	0.00736	0.00723
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00533	0.00514	0.00501
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00754	0.00736	0.00723
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00533	0.00514	0.00501
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00754	0.00736	0.00723
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00533	0.00514	0.00501
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00732	0.00713	0.00701
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00511	0.00492	0.00479
	(!D * !SCE * !Q * Q_N)	0.00754	0.00736	0.00722
	(!D * !SCE * !Q * Q_N)	0.00533	0.00514	0.00500
	(!D * !SCD * SCE * !Q * Q_N)	0.00754	0.00736	0.00722
	(!D * !SCD * SCE * !Q * Q_N)	0.00533	0.00514	0.00501
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00754	0.00736	0.00723
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00533	0.00514	0.00501

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00404	0.00389	0.00378
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00632	0.00616	0.00605
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00735	0.00718	0.00702
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00952	0.00934	0.00919
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00404	0.00389	0.00378
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00632	0.00616	0.00605
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00731	0.00715	0.00699
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00949	0.00931	0.00916
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00761	0.00747	0.00732
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00999	0.00985	0.00964
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00404	0.00389	0.00378
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00632	0.00616	0.00605
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00731	0.00715	0.00699
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00949	0.00931	0.00916
	(D * !SCD * SCE * !Q * Q_N)	0.00377	0.00361	0.00351
	(D * !SCD * SCE * !Q * Q_N)	0.00604	0.00588	0.00577
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00377	0.00362	0.00351
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00604	0.00588	0.00578
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00377	0.00362	0.00351
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00604	0.00588	0.00578
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00377	0.00362	0.00351
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00604	0.00588	0.00578
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00404	0.00389	0.00378
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00632	0.00616	0.00605
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00736	0.00720	0.00704
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00953	0.00936	0.00920
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00759	0.00745	0.00733
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00996	0.00982	0.00962
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00760	0.00746	0.00730
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00998	0.00983	0.00958
	(!D * !SCE * !Q * Q_N)	0.00377	0.00361	0.00351
	(!D * !SCE * !Q * Q_N)	0.00604	0.00588	0.00577
	(!D * !SCD * SCE * !Q * Q_N)	0.00377	0.00361	0.00351
	(!D * !SCD * SCE * !Q * Q_N)	0.00604	0.00588	0.00577
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00377	0.00362	0.00351
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00604	0.00588	0.00578

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00402	0.00387	0.00377
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00625	0.00609	0.00599
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00737	0.00720	0.00705
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00949	0.00932	0.00917
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00402	0.00387	0.00377
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00625	0.00609	0.00599
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00734	0.00717	0.00702
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00946	0.00929	0.00913
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00761	0.00745	0.00729
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00995	0.00978	0.00956
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00402	0.00387	0.00377
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00625	0.00609	0.00599
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00734	0.00717	0.00702
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00946	0.00929	0.00913
	(D * !SCD * SCE * !Q * Q_N)	0.00379	0.00364	0.00353
	(D * !SCD * SCE * !Q * Q_N)	0.00601	0.00586	0.00575
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00379	0.00364	0.00353
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00602	0.00586	0.00575
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00379	0.00364	0.00353
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00601	0.00586	0.00575
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00379	0.00364	0.00353
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00601	0.00586	0.00575
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00402	0.00387	0.00377
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00625	0.00609	0.00599
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00739	0.00722	0.00707
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00950	0.00933	0.00918
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00759	0.00743	0.00730
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00992	0.00975	0.00954
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00760	0.00744	0.00727
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00993	0.00976	0.00951
	(!D * !SCE * !Q * Q_N)	0.00379	0.00364	0.00353
	(!D * !SCE * !Q * Q_N)	0.00601	0.00586	0.00575
	(!D * !SCD * SCE * !Q * Q_N)	0.00379	0.00364	0.00353
	(!D * !SCD * SCE * !Q * Q_N)	0.00601	0.00586	0.00575
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00379	0.00364	0.00353
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00602	0.00586	0.00575

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK_N	Q
0	0	x	1	F	0
0	1	0	1	F	0
x	1	1	1	F	1
1	x	0	1	F	1
1	0	1	1	F	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtn_1	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK_N	Q
sky130_fd_sc_hs__sdfrtn_1	0.00179	0.00170	0.00377	0.00539	0.00262	0.18506

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.00056	0.00064

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtn_1	CLK_N->Q (FR)	1.65615	3.36074	14.47110

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtn_1	CLK_N->Q (FF)	1.05064	2.07992	8.17033
	RESET_B->Q (FF)	1.46039	2.49660	8.86662

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	0.26021	0.38416	3.25356
	setup	CLK_N (F)	0.16657	-0.01624	-2.73235

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.51627	-0.57745	-3.05059
	setup	CLK_N (F)	2.58321	2.42500	3.96880

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	0.26021	0.38416	3.25337
	hold	CLK_N (F)	0.25829	0.38354	3.25356
	setup	CLK_N (F)	0.16259	-0.01624	-2.73406
	setup	CLK_N (F)	0.16657	-0.01716	-2.73235

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.51630	-0.57745	-3.05059
	hold	CLK_N (F)	-0.51627	-0.58860	-3.05111
	setup	CLK_N (F)	2.57385	2.42500	3.96848
	setup	CLK_N (F)	2.58321	2.42100	3.96880

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	0.22748	0.37046	3.08991
	setup	CLK_N (F)	0.19675	0.00533	-2.65055

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.66734	-0.79798	-3.72425
	setup	CLK_N (F)	2.88919	2.79428	4.69247

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	0.22748	0.37046	3.08991
	hold	CLK_N (F)	0.22358	0.36500	3.07269
	setup	CLK_N (F)	0.19675	0.00533	-2.65055
	setup	CLK_N (F)	0.19041	0.00053	-2.65861

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.74977	-0.89249	-3.72425
	hold	CLK_N (F)	-0.66734	-0.79798	-3.78968
	setup	CLK_N (F)	2.83802	2.75668	4.62956
	setup	CLK_N (F)	2.88919	2.79428	4.69247

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	0.25983	0.38465	3.22713
	setup	CLK_N (F)	2.79052	2.53242	0.65410

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.09991	-0.09734	0.36468
	setup	CLK_N (F)	2.62772	2.53707	4.38716

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.67749	-0.64576	0.21897
	hold	CLK_N (F)	0.25983	0.38465	3.22713
	setup	CLK_N (F)	2.79052	2.53242	0.65410
	setup	CLK_N (F)	0.15327	-0.01953	-2.72251

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	hold	CLK_N (F)	-0.09991	-0.09734	0.36468
	hold	CLK_N (F)	-0.56885	-0.68101	-3.50479
	setup	CLK_N (F)	0.52075	0.47201	-0.18089
	setup	CLK_N (F)	2.62772	2.53707	4.38716

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	recovery	CLK_N (F)	0.23402	0.02365	-2.72660
	removal	CLK_N (F)	0.01493	0.19705	2.93868

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	recovery	CLK_N (F)	0.23402	0.02365	-2.72660
	recovery	CLK_N (F)	0.23189	0.01801	-2.76954
	recovery	CLK_N (F)	0.22561	0.00187	-2.80870
	recovery	CLK_N (F)	0.22604	0.01831	-2.73544
	removal	CLK_N (F)	0.01069	0.18166	2.86193
	removal	CLK_N (F)	0.00603	0.18450	2.90344
	removal	CLK_N (F)	0.01493	0.19705	2.93868
	removal	CLK_N (F)	0.01245	0.18450	2.85992

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	min_pulse_width	RESET_B ()	0.69734	1.79339	16.50020
	min_pulse_width	RESET_B ()	0.93973	2.04298	16.50020

Constraints(ns) for CLK_N rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	min_pulse_width	CLK_N ()	0.47675	1.45020	16.50020
	min_pulse_width	CLK_N ()	1.72406	1.45020	16.50020

Constraints(ns) for CLK_N falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtn_1	min_pulse_width	CLK_N ()	1.16994	1.64779	16.50020
	min_pulse_width	CLK_N ()	0.73105	1.72752	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01218	0.01206	0.01226
	CLK_N	0.01449	0.01437	0.01455

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01133	0.01121	0.01098
	CLK_N	0.01334	0.01321	0.01297
	RESET_B	0.01167	0.01153	0.01122
	RESET_B	0.01648	0.01634	0.01599

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * RESET_B * SCD * SCE)**	0.00061	0.00062	0.00061
	(CLK_N * RESET_B * SCD * SCE)	-0.00040	-0.00041	-0.00040
	(CLK_N * RESET_B * SCD * !SCE)	0.00655	0.00651	0.00642
	(CLK_N * RESET_B * SCD * !SCE)	0.00478	0.00474	0.00465
	(CLK_N * RESET_B * !SCD * !SCE)	0.00655	0.00651	0.00642
	(CLK_N * RESET_B * !SCD * !SCE)	0.00478	0.00474	0.00465
	(CLK_N * !SCD * SCE)	0.00038	0.00038	0.00038
	(CLK_N * !SCD * SCE)	-0.00063	-0.00065	-0.00064
	(CLK_N * !RESET_B * SCD * SCE)	0.00037	0.00037	0.00037
	(CLK_N * !RESET_B * SCD * SCE)	-0.00064	-0.00065	-0.00065
	(CLK_N * !RESET_B * SCD * !SCE)	0.00021	0.00021	0.00018
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00080	-0.00081	-0.00085
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00021	0.00020	0.00018
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00083	-0.00083	-0.00086
	(!CLK_N * RESET_B * SCD * SCE)	0.00061	0.00062	0.00061
	(!CLK_N * RESET_B * SCD * SCE)	-0.00040	-0.00041	-0.00040
	(!CLK_N * RESET_B * SCD * !SCE)	0.00287	0.00281	0.00276
	(!CLK_N * RESET_B * SCD * !SCE)	0.00108	0.00103	0.00098
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00287	0.00281	0.00276
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00108	0.00103	0.00098
	(!CLK_N * !SCD * SCE)	0.00038	0.00038	0.00038
	(!CLK_N * !SCD * SCE)	-0.00063	-0.00064	-0.00065
	(!CLK_N * !RESET_B * SCD * SCE)	0.00037	0.00037	0.00037
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00064	-0.00065	-0.00065
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00021	0.00021	0.00018
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00080	-0.00081	-0.00085
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00021	0.00020	0.00018
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00083	-0.00083	-0.00086

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * RESET_B * SCD * SCE)**	-0.00060	-0.00061	-0.00061
	(CLK_N * RESET_B * SCD * SCE)	0.00041	0.00041	0.00040
	(CLK_N * RESET_B * SCD * !SCE)	0.00425	0.00417	0.00386
	(CLK_N * RESET_B * SCD * !SCE)	0.00602	0.00594	0.00553
	(CLK_N * RESET_B * !SCD * !SCE)	0.00425	0.00417	0.00386
	(CLK_N * RESET_B * !SCD * !SCE)	0.00602	0.00594	0.00553
	(CLK_N * !SCD * SCE)	-0.00038	-0.00038	-0.00038
	(CLK_N * !SCD * SCE)	0.00065	0.00065	0.00064
	(CLK_N * !RESET_B * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK_N * !RESET_B * SCD * SCE)	0.00065	0.00065	0.00065
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00017	-0.00018	-0.00017
	(CLK_N * !RESET_B * SCD * !SCE)	0.00086	0.00087	0.00086
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00017	-0.00018	-0.00017
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00086	0.00087	0.00086
	(!CLK_N * RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00061
	(!CLK_N * RESET_B * SCD * SCE)	0.00041	0.00041	0.00040
	(!CLK_N * RESET_B * SCD * !SCE)	0.00069	0.00061	0.00060
	(!CLK_N * RESET_B * SCD * !SCE)	0.00248	0.00240	0.00238
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00069	0.00061	0.00060
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00248	0.00240	0.00238
	(!CLK_N * !SCD * SCE)	-0.00038	-0.00038	-0.00037
	(!CLK_N * !SCD * SCE)	0.00065	0.00065	0.00065
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK_N * !RESET_B * SCD * SCE)	0.00065	0.00065	0.00065
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00017	-0.00018	-0.00017
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00086	0.00087	0.00086
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00017	-0.00018	-0.00017
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00086	0.00087	0.00086

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * D * RESET_B * SCE)**	0.00711	0.00707	0.00700
	(CLK_N * D * RESET_B * SCE)	0.00505	0.00501	0.00494
	(CLK_N * D * RESET_B * !SCE)	0.00045	0.00045	0.00045
	(CLK_N * D * RESET_B * !SCE)	-0.00064	-0.00065	-0.00064
	(CLK_N * D * !RESET_B * SCE)	0.00034	0.00034	0.00034
	(CLK_N * D * !RESET_B * SCE)	-0.00063	-0.00062	-0.00062
	(CLK_N * D * !RESET_B * !SCE)	0.00023	0.00023	0.00022
	(CLK_N * D * !RESET_B * !SCE)	-0.00072	-0.00073	-0.00073
	(CLK_N * !D * RESET_B * SCE)	0.00732	0.00729	0.00720
	(CLK_N * !D * RESET_B * SCE)	0.00525	0.00522	0.00513
	(CLK_N * !D * !RESET_B * SCE)	0.00035	0.00035	0.00034
	(CLK_N * !D * !RESET_B * SCE)	-0.00063	-0.00063	-0.00062
	(!D * RESET_B * !SCE)	0.00039	0.00039	0.00039
	(!D * RESET_B * !SCE)	-0.00070	-0.00071	-0.00071
	(!D * !RESET_B * !SCE)	0.00024	0.00025	0.00024
	(!D * !RESET_B * !SCE)	-0.00074	-0.00075	-0.00075
	(!CLK_N * D * RESET_B * SCE)	0.00343	0.00339	0.00335
	(!CLK_N * D * RESET_B * SCE)	0.00135	0.00131	0.00126
	(!CLK_N * D * RESET_B * !SCE)	0.00045	0.00045	0.00045
	(!CLK_N * D * RESET_B * !SCE)	-0.00064	-0.00065	-0.00064
	(!CLK_N * D * !RESET_B * SCE)	0.00034	0.00034	0.00034
	(!CLK_N * D * !RESET_B * SCE)	-0.00063	-0.00062	-0.00062
	(!CLK_N * D * !RESET_B * !SCE)	0.00023	0.00023	0.00022
	(!CLK_N * D * !RESET_B * !SCE)	-0.00072	-0.00073	-0.00073
	(!CLK_N * !D * RESET_B * SCE)	0.00364	0.00361	0.00354
	(!CLK_N * !D * RESET_B * SCE)	0.00156	0.00152	0.00146
	(!CLK_N * !D * !RESET_B * SCE)	0.00035	0.00035	0.00034
	(!CLK_N * !D * !RESET_B * SCE)	-0.00063	-0.00063	-0.00062

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(CLK_N * D * RESET_B * SCE)**	0.00469	0.00462	0.00347
	(CLK_N * D * RESET_B * SCE)	0.00676	0.00669	0.00544
	(CLK_N * D * RESET_B * !SCE)	-0.00044	-0.00045	-0.00045
	(CLK_N * D * RESET_B * !SCE)	0.00065	0.00065	0.00064
	(CLK_N * D * !RESET_B * SCE)	-0.00032	-0.00033	-0.00033
	(CLK_N * D * !RESET_B * SCE)	0.00063	0.00064	0.00063
	(CLK_N * D * !RESET_B * !SCE)	-0.00023	-0.00022	-0.00022
	(CLK_N * D * !RESET_B * !SCE)	0.00073	0.00073	0.00073
	(CLK_N * !D * RESET_B * SCE)	0.00452	0.00445	0.00329
	(CLK_N * !D * RESET_B * SCE)	0.00660	0.00653	0.00523
	(CLK_N * !D * !RESET_B * SCE)	-0.00032	-0.00033	-0.00033
	(CLK_N * !D * !RESET_B * SCE)	0.00063	0.00064	0.00063
	(!D * RESET_B * !SCE)	-0.00038	-0.00039	-0.00039
	(!D * RESET_B * !SCE)	0.00071	0.00071	0.00071
	(!D * !RESET_B * !SCE)	-0.00024	-0.00025	-0.00024
	(!D * !RESET_B * !SCE)	0.00076	0.00076	0.00076
	(!CLK_N * D * RESET_B * SCE)	0.00115	0.00108	0.00105
	(!CLK_N * D * RESET_B * SCE)	0.00323	0.00317	0.00312
	(!CLK_N * D * RESET_B * !SCE)	-0.00044	-0.00045	-0.00045
	(!CLK_N * D * RESET_B * !SCE)	0.00064	0.00065	0.00064
	(!CLK_N * D * !RESET_B * SCE)	-0.00032	-0.00033	-0.00033
	(!CLK_N * D * !RESET_B * SCE)	0.00063	0.00064	0.00063
	(!CLK_N * D * !RESET_B * !SCE)	-0.00023	-0.00022	-0.00022
	(!CLK_N * D * !RESET_B * !SCE)	0.00073	0.00073	0.00073
	(!CLK_N * !D * RESET_B * SCE)	0.00098	0.00091	0.00089
	(!CLK_N * !D * RESET_B * SCE)	0.00306	0.00300	0.00298
	(!CLK_N * !D * !RESET_B * SCE)	-0.00032	-0.00033	-0.00033
	(!CLK_N * !D * !RESET_B * SCE)	0.00063	0.00064	0.00063

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	(CLK_N * D * RESET_B * SCD)	0.00279	0.00269	0.00262
	(CLK_N * D * RESET_B * SCD)	-0.00018	-0.00030	-0.00035
	(CLK_N * D * RESET_B * !SCD)	0.00786	0.00781	0.00768
	(CLK_N * D * RESET_B * !SCD)	0.00580	0.00573	0.00559
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00279	0.00269	0.00262
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00007	-0.00020	-0.00025
	(CLK_N * !D * RESET_B * SCD)	0.00916	0.00901	0.00885
	(CLK_N * !D * RESET_B * SCD)	0.00542	0.00526	0.00511
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00279	0.00268	0.00262
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00018	-0.00029	-0.00035
	(!CLK_N * D * RESET_B * !SCD)	0.00438	0.00427	0.00413
	(!CLK_N * D * RESET_B * !SCD)	0.00233	0.00221	0.00206
	(!CLK_N * !D * RESET_B * SCD)	0.00548	0.00533	0.00520
	(!CLK_N * !D * RESET_B * SCD)	0.00172	0.00155	0.00143

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	(CLK_N * D * RESET_B * SCD)	-0.00008	-0.00017	-0.00020
	(CLK_N * D * RESET_B * SCD)	0.00288	0.00281	0.00278
	(CLK_N * D * RESET_B * !SCD)	0.00642	0.00637	0.00629
	(CLK_N * D * RESET_B * !SCD)	0.00851	0.00843	0.00837
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00010	-0.00018	-0.00021
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00278	0.00269	0.00265
	(CLK_N * !D * RESET_B * SCD)	0.00450	0.00433	0.00379
	(CLK_N * !D * RESET_B * SCD)	0.00824	0.00808	0.00740
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00008	-0.00017	-0.00020
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00288	0.00281	0.00278
	(!CLK_N * D * RESET_B * !SCD)	0.00276	0.00269	0.00260
	(!CLK_N * D * RESET_B * !SCD)	0.00483	0.00473	0.00466
	(!CLK_N * !D * RESET_B * SCD)	0.00094	0.00077	0.00073
	(!CLK_N * !D * RESET_B * SCD)	0.00470	0.00453	0.00450

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00909	0.00896	0.00881
	(CLK_N * D * SCD * SCE * !Q)	0.00423	0.00409	0.00394
	(CLK_N * D * SCD * !SCE * !Q)	0.00905	0.00890	0.00878
	(CLK_N * D * SCD * !SCE * !Q)	0.00433	0.00419	0.00405
	(CLK_N * D * !SCD * SCE * !Q)	0.00189	0.00191	0.00188
	(CLK_N * D * !SCD * SCE * !Q)	-0.00186	-0.00187	-0.00186
	(CLK_N * D * !SCD * !SCE * !Q)	0.00888	0.00874	0.00861
	(CLK_N * D * !SCD * !SCE * !Q)	0.00434	0.00419	0.00404
	(CLK_N * !D * SCD * SCE * !Q)	0.00930	0.00918	0.00901
	(CLK_N * !D * SCD * SCE * !Q)	0.00443	0.00431	0.00414
	(CLK_N * !D * SCD * !SCE * !Q)	0.00186	0.00187	0.00186
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00187	-0.00188	-0.00187
	(CLK_N * !D * !SCD * SCE * !Q)	0.00189	0.00191	0.00188
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00186	-0.00187	-0.00185
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00187	0.00188	0.00187
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00188	-0.00188	-0.00187
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00508	0.00504	0.00498
	(!CLK_N * D * SCD * SCE * !Q)	0.00020	0.00012	0.00008
	(!CLK_N * D * SCD * !SCE * !Q)	0.00505	0.00499	0.00495
	(!CLK_N * D * SCD * !SCE * !Q)	0.00029	0.00021	0.00019
	(!CLK_N * D * !SCD * SCE * !Q)	0.00183	0.00185	0.00183
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00191	-0.00193	-0.00191
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00489	0.00482	0.00479
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00029	0.00022	0.00018
	(!CLK_N * !D * SCD * SCE * !Q)	0.00529	0.00525	0.00517
	(!CLK_N * !D * SCD * SCE * !Q)	0.00041	0.00034	0.00028
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00181	0.00181	0.00181
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00192	-0.00193	-0.00192
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00184	0.00185	0.00183
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00192	-0.00193	-0.00191
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00181	0.00183	0.00181
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00193	-0.00194	-0.00193

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00393	0.00372	0.00351
	(CLK_N * D * SCD * SCE * !Q)	0.00881	0.00859	0.00835
	(CLK_N * D * SCD * !SCE * !Q)	0.00356	0.00335	0.00314
	(CLK_N * D * SCD * !SCE * !Q)	0.00831	0.00809	0.00784
	(CLK_N * D * !SCD * SCE * !Q)	-0.00188	-0.00190	-0.00188
	(CLK_N * D * !SCD * SCE * !Q)	0.00187	0.00187	0.00186
	(CLK_N * D * !SCD * !SCE * !Q)	0.00344	0.00323	0.00303
	(CLK_N * D * !SCD * !SCE * !Q)	0.00802	0.00780	0.00758
	(CLK_N * !D * SCD * SCE * !Q)	0.00376	0.00355	0.00335
	(CLK_N * !D * SCD * SCE * !Q)	0.00864	0.00843	0.00822
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00184	-0.00187	-0.00186
	(CLK_N * !D * SCD * !SCE * !Q)	0.00188	0.00189	0.00187
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00188	-0.00190	-0.00188
	(CLK_N * !D * !SCD * SCE * !Q)	0.00187	0.00187	0.00186
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00185	-0.00188	-0.00187
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00189	0.00190	0.00187
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00010	-0.00001	-0.00008
	(!CLK_N * D * SCD * SCE * !Q)	0.00500	0.00491	0.00482
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00026	-0.00038	-0.00045
	(!CLK_N * D * SCD * !SCE * !Q)	0.00450	0.00440	0.00431
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00182	-0.00184	-0.00183
	(!CLK_N * D * !SCD * SCE * !Q)	0.00192	0.00193	0.00191
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00039	-0.00050	-0.00056
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00421	0.00411	0.00405
	(!CLK_N * !D * SCD * SCE * !Q)	-0.00007	-0.00018	-0.00023
	(!CLK_N * !D * SCD * SCE * !Q)	0.00484	0.00474	0.00468
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00179	-0.00181	-0.00181
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00193	0.00194	0.00192
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00182	-0.00184	-0.00183
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00192	0.00193	0.00191
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00180	-0.00183	-0.00181
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00194	0.00195	0.00193

Passive power(pJ) for CLK_N rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtn_1	**(D * RESET_B * SCD * SCE * Q)**	0.00669	0.00646	0.00633
	(D * RESET_B * SCD * SCE * Q)	0.00454	0.00430	0.00418
	(D * RESET_B * SCD * SCE * !Q)	0.01059	0.01037	0.01031
	(D * RESET_B * SCD * SCE * !Q)	0.00846	0.00824	0.00818
	(D * RESET_B * SCD * !SCE * Q)	0.00669	0.00646	0.00633
	(D * RESET_B * SCD * !SCE * Q)	0.00454	0.00430	0.00418
	(D * RESET_B * SCD * !SCE * !Q)	0.01057	0.01036	0.01030
	(D * RESET_B * SCD * !SCE * !Q)	0.00844	0.00823	0.00816
	(D * RESET_B * !SCD * SCE * Q)	0.01018	0.00989	0.00973
	(D * RESET_B * !SCD * SCE * Q)	0.00802	0.00773	0.00757
	(D * RESET_B * !SCD * !SCE * Q)	0.00669	0.00646	0.00633
	(D * RESET_B * !SCD * !SCE * Q)	0.00454	0.00430	0.00418
	(D * RESET_B * !SCD * !SCE * !Q)	0.01057	0.01036	0.01030
	(D * RESET_B * !SCD * !SCE * !Q)	0.00844	0.00823	0.00816
	(D * !SCD * SCE * !Q)	0.00661	0.00638	0.00624
	(D * !SCD * SCE * !Q)	0.00446	0.00422	0.00409
	(D * !RESET_B * SCD * SCE * !Q)	0.00661	0.00638	0.00624
	(D * !RESET_B * SCD * SCE * !Q)	0.00446	0.00422	0.00409
	(D * !RESET_B * SCD * !SCE * !Q)	0.00661	0.00638	0.00624
	(D * !RESET_B * SCD * !SCE * !Q)	0.00446	0.00422	0.00409
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00661	0.00638	0.00624
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00446	0.00422	0.00409
	(!D * RESET_B * SCD * SCE * Q)	0.00669	0.00646	0.00633
	(!D * RESET_B * SCD * SCE * Q)	0.00454	0.00430	0.00418
	(!D * RESET_B * SCD * SCE * !Q)	0.01062	0.01040	0.01033
	(!D * RESET_B * SCD * SCE * !Q)	0.00848	0.00826	0.00819
	(!D * RESET_B * !SCE * Q)	0.01016	0.00987	0.00972
	(!D * RESET_B * !SCE * Q)	0.00800	0.00770	0.00755
	(!D * RESET_B * !SCD * SCE * Q)	0.01018	0.00989	0.00973
	(!D * RESET_B * !SCD * SCE * Q)	0.00802	0.00772	0.00757
	(!D * !SCE * !Q)	0.00661	0.00638	0.00624
	(!D * !SCE * !Q)	0.00446	0.00422	0.00409
	(!D * !SCD * SCE * !Q)	0.00661	0.00638	0.00624
	(!D * !SCD * SCE * !Q)	0.00446	0.00422	0.00409
	(!D * !RESET_B * SCD * SCE * !Q)	0.00661	0.00638	0.00624
	(!D * !RESET_B * SCD * SCE * !Q)	0.00446	0.00422	0.00409

Passive power(pJ) for CLK_N falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	(D * RESET_B * SCD * SCE * Q)	0.00495	0.00479	0.00467
	(D * RESET_B * SCD * SCE * Q)	0.00711	0.00694	0.00682
	(D * RESET_B * SCD * !SCE * Q)	0.00495	0.00479	0.00467
	(D * RESET_B * SCD * !SCE * Q)	0.00711	0.00694	0.00682
	(D * RESET_B * !SCD * !SCE * Q)	0.00495	0.00479	0.00467
	(D * RESET_B * !SCD * !SCE * Q)	0.00711	0.00694	0.00682
	(D * !SCD * SCE * !Q)	0.00501	0.00485	0.00473
	(D * !SCD * SCE * !Q)	0.00717	0.00700	0.00688
	(D * !RESET_B * SCD * SCE * !Q)	0.00501	0.00485	0.00473
	(D * !RESET_B * SCD * SCE * !Q)	0.00717	0.00700	0.00689
	(D * !RESET_B * SCD * !SCE * !Q)	0.00501	0.00485	0.00473
	(D * !RESET_B * SCD * !SCE * !Q)	0.00717	0.00700	0.00689
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00501	0.00485	0.00473
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00717	0.00700	0.00689
	(!D * RESET_B * SCD * SCE * Q)	0.00495	0.00479	0.00467
	(!D * RESET_B * SCD * SCE * Q)	0.00711	0.00694	0.00682
	(!D * !SCE * !Q)	0.00501	0.00485	0.00473
	(!D * !SCE * !Q)	0.00717	0.00700	0.00688
	(!D * !SCD * SCE * !Q)	0.00501	0.00485	0.00473
	(!D * !SCD * SCE * !Q)	0.00717	0.00700	0.00688
	(!D * !RESET_B * SCD * SCE * !Q)	0.00501	0.00485	0.00473
	(!D * !RESET_B * SCD * SCE * !Q)	0.00717	0.00700	0.00689

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtp_1	44.75520
sky130_fd_sc_hs__sdfrtp_2	47.95200
sky130_fd_sc_hs__sdfrtp_4	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK	Q
sky130_fd_sc_hs__sdfrtp_1	0.00171	0.00174	0.00378	0.00531	0.00283	0.18776
sky130_fd_sc_hs__sdfrtp_2	0.00165	0.00175	0.00386	0.00539	0.00283	0.37793
sky130_fd_sc_hs__sdfrtp_4	0.00165	0.00173	0.00389	0.00531	0.00282	0.73281

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.00056	0.00064
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.00060	0.00069
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.00069	0.00078

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	**CLK->Q (RR)**	1.06216	2.43352	10.46380
sky130_fd_sc_hs__sdfrtp_2	**CLK->Q (RR)**	1.14337	2.33126	10.62000
sky130_fd_sc_hs__sdfrtp_4	**CLK->Q (RR)**	1.30455	2.35323	10.80080

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	**CLK->Q (RF)**	0.92643	1.62002	4.50007
	RESET_B->Q (FF)	1.46425	2.49517	8.88225
sky130_fd_sc_hs__sdfrtp_2	**CLK->Q (RF)**	1.00278	1.69844	4.62933
	RESET_B->Q (FF)	1.56713	2.60042	9.04700
sky130_fd_sc_hs__sdfrtp_4	**CLK->Q (RF)**	1.01791	1.69252	4.63953
	RESET_B->Q (FF)	1.57678	2.59006	9.05532

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.23604	-0.41075	-1.54954
	setup	CLK (R)	0.72203	0.76443	1.98153
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.22376	-0.38952	-1.46864
	setup	CLK (R)	0.74073	0.77283	1.92588
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.21993	-0.38868	-1.46938
	setup	CLK (R)	0.69979	0.74046	1.90586

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.21425	-0.44461	-3.72055
	setup	CLK (R)	2.34246	2.39963	5.51367
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.20905	-0.44199	-3.71965
	setup	CLK (R)	2.24996	2.31738	5.40164
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.22669	-0.46129	-4.03812
	setup	CLK (R)	2.23404	2.29364	5.39535

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.23691	-0.41075	-1.54980
	hold	CLK (R)	-0.23604	-0.41154	-1.54954
	setup	CLK (R)	0.72203	0.76443	1.98153
	setup	CLK (R)	0.72038	0.76036	1.97801
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.22391	-0.38984	-1.47152
	hold	CLK (R)	-0.22376	-0.38952	-1.46864
	setup	CLK (R)	0.74011	0.77278	1.92341
	setup	CLK (R)	0.74073	0.77283	1.92588
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.21993	-0.39056	-1.46938
	hold	CLK (R)	-0.22222	-0.38868	-1.47076
	setup	CLK (R)	0.69585	0.74007	1.90586
	setup	CLK (R)	0.69979	0.74046	1.90555

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.21544	-0.44461	-3.72274
	hold	CLK (R)	-0.21425	-0.44614	-3.72055
	setup	CLK (R)	2.34026	2.39963	5.51298
	setup	CLK (R)	2.34246	2.39671	5.51367
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.20913	-0.44402	-3.72083
	hold	CLK (R)	-0.20905	-0.44199	-3.71965
	setup	CLK (R)	2.24996	2.31726	5.40046
	setup	CLK (R)	2.24991	2.31738	5.40164
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.22669	-0.46129	-4.03812
	hold	CLK (R)	-0.22783	-0.46502	-4.03953
	setup	CLK (R)	2.23404	2.29291	5.39410
	setup	CLK (R)	2.23267	2.29364	5.39535

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.26719	-0.43194	-1.75601
	setup	CLK (R)	0.75135	0.77991	2.11957
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.25789	-0.41605	-1.69906
	setup	CLK (R)	0.77415	0.79612	2.07728
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.25413	-0.41335	-1.69412
	setup	CLK (R)	0.73275	0.76214	2.05900

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.30495	-0.60210	-4.80103
	setup	CLK (R)	2.66688	2.77948	6.20403
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.31752	-0.60844	-4.72615
	setup	CLK (R)	2.59553	2.71473	6.11891
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.33563	-0.63119	-4.91179
	setup	CLK (R)	2.57685	2.69516	6.10468

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.26719	-0.43194	-1.76394
	hold	CLK (R)	-0.27098	-0.43218	-1.75601
	setup	CLK (R)	0.75135	0.77991	2.11957
	setup	CLK (R)	0.74640	0.77416	2.11823
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.25789	-0.41615	-1.70303
	hold	CLK (R)	-0.26026	-0.41605	-1.69906
	setup	CLK (R)	0.77415	0.79612	2.07728
	setup	CLK (R)	0.76730	0.79169	2.07051
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.25413	-0.41597	-1.70843
	hold	CLK (R)	-0.25782	-0.41335	-1.69412
	setup	CLK (R)	0.73275	0.76214	2.05900
	setup	CLK (R)	0.72281	0.75479	2.04960

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.32713	-0.63093	-4.81599
	hold	CLK (R)	-0.30495	-0.60210	-4.80103
	setup	CLK (R)	2.62934	2.74490	6.18336
	setup	CLK (R)	2.66688	2.77948	6.20403
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.33805	-0.63819	-4.89420
	hold	CLK (R)	-0.31752	-0.60844	-4.72615
	setup	CLK (R)	2.55813	2.68126	6.10099
	setup	CLK (R)	2.59553	2.71473	6.11891
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.36077	-0.65892	-5.00105
	hold	CLK (R)	-0.33563	-0.63119	-4.91179
	setup	CLK (R)	2.54793	2.66928	6.09279
	setup	CLK (R)	2.57685	2.69516	6.10468

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.23086	-0.40388	-1.18534
	setup	CLK (R)	2.57164	2.52033	2.23731
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.22311	-0.38860	-1.09301
	setup	CLK (R)	2.47892	2.43667	2.12401
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.21903	-0.38387	-1.18262
	setup	CLK (R)	2.47138	2.41987	2.11711

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.25241	-0.54021	-4.44591
	setup	CLK (R)	2.37079	2.48636	5.89695
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.25644	-0.54264	-4.39252
	setup	CLK (R)	2.29026	2.41224	5.80868
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.27464	-0.56295	-4.39216
	setup	CLK (R)	2.27481	2.39340	5.79658

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.26623	-0.41213	-1.18534
	hold	CLK (R)	-0.23086	-0.40388	-1.56848
	setup	CLK (R)	2.57164	2.52033	2.23731
	setup	CLK (R)	0.70924	0.74930	1.99504
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.26004	-0.40170	-1.09301
	hold	CLK (R)	-0.22311	-0.38860	-1.50290
	setup	CLK (R)	2.47892	2.43667	2.12401
	setup	CLK (R)	0.72869	0.76504	1.95673
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.28445	-0.42431	-1.18262
	hold	CLK (R)	-0.21903	-0.38387	-1.50008
	setup	CLK (R)	2.47138	2.41987	2.11711
	setup	CLK (R)	0.68756	0.73143	1.92903

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	hold	CLK (R)	-0.58877	-0.88679	-4.44591
	hold	CLK (R)	-0.25241	-0.54021	-4.57584
	setup	CLK (R)	1.07188	1.23498	4.69674
	setup	CLK (R)	2.37079	2.48636	5.89695
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.55963	-0.85797	-4.39252
	hold	CLK (R)	-0.25644	-0.54264	-4.58976
	setup	CLK (R)	1.07725	1.23906	4.64771
	setup	CLK (R)	2.29026	2.41224	5.80868
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.56129	-0.85733	-4.39216
	hold	CLK (R)	-0.27464	-0.56295	-4.71126
	setup	CLK (R)	1.03716	1.20411	4.63717
	setup	CLK (R)	2.27481	2.39340	5.79658

Constraints(ns) for RESET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	recovery	CLK (R)	0.78919	0.79342	2.06233
	removal	CLK (R)	-0.43992	-0.53209	-1.88330
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.80859	0.80633	2.02606
	removal	CLK (R)	-0.42801	-0.51899	-1.83464
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.76861	0.77329	2.00690
	removal	CLK (R)	-0.43250	-0.52077	-1.84397

Constraints(ns) for RESET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	recovery	CLK (R)	0.78562	0.79342	2.06233
	recovery	CLK (R)	0.78919	0.78914	2.01931
	recovery	CLK (R)	0.78199	0.77839	1.97697
	recovery	CLK (R)	0.78087	0.78672	2.05967
	removal	CLK (R)	-0.44372	-0.54803	-1.97013
	removal	CLK (R)	-0.44422	-0.54545	-1.92302
	removal	CLK (R)	-0.43992	-0.53209	-1.88330
	removal	CLK (R)	-0.44276	-0.54704	-1.96531
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.80710	0.80633	2.02606
	recovery	CLK (R)	0.80859	0.80274	1.97716
	recovery	CLK (R)	0.80137	0.78723	1.93728
	recovery	CLK (R)	0.80296	0.80212	2.02257
	removal	CLK (R)	-0.43703	-0.53758	-1.93001
	removal	CLK (R)	-0.43417	-0.53237	-1.88236
	removal	CLK (R)	-0.42801	-0.51899	-1.83464
	removal	CLK (R)	-0.43458	-0.53719	-1.92700
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.76639	0.77329	2.00690
	recovery	CLK (R)	0.76861	0.77047	1.96266
	recovery	CLK (R)	0.76086	0.75536	1.91667
	recovery	CLK (R)	0.75938	0.76581	1.99953
	removal	CLK (R)	-0.43902	-0.53707	-1.93592
	removal	CLK (R)	-0.43870	-0.53449	-1.88575
	removal	CLK (R)	-0.43250	-0.52077	-1.84397
	removal	CLK (R)	-0.43804	-0.53619	-1.92790

Constraints(ns) for RESET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	min_pulse_width	RESET_B ()	0.94051	2.03605	16.50020
	min_pulse_width	RESET_B ()	0.66888	1.77606	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.96744	2.06378	16.50020
	min_pulse_width	RESET_B ()	0.68223	1.79686	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.96067	2.05685	16.50020
	min_pulse_width	RESET_B ()	0.66982	1.76912	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	min_pulse_width	CLK ()	0.62393	1.45020	16.50020
	min_pulse_width	CLK ()	0.34507	1.45020	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.71689	1.45020	16.50020
	min_pulse_width	CLK ()	0.34507	1.45020	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.84857	1.45020	16.50020
	min_pulse_width	CLK ()	0.34765	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfrtp_1	min_pulse_width	CLK ()	1.07802	1.67206	16.50020
	min_pulse_width	CLK ()	1.95906	2.08112	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	1.12996	1.68246	16.50020
	min_pulse_width	CLK ()	2.02011	2.15045	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	1.07802	1.67206	16.50020
	min_pulse_width	CLK ()	1.99350	2.12618	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.01358	0.01342	0.01334
	CLK	0.01130	0.01114	0.01106
sky130_fd_sc_hs__sdfrtp_2	CLK	0.01535	0.01529	0.01529
	CLK	0.01298	0.01293	0.01294
sky130_fd_sc_hs__sdfrtp_4	CLK	0.01847	0.01854	0.01872
	CLK	0.01617	0.01624	0.01650

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.01407	0.01398	0.01395
	CLK	0.01184	0.01175	0.01172
	RESET_B	0.01132	0.01112	0.01080
	RESET_B	0.01634	0.01616	0.01581
sky130_fd_sc_hs__sdfrtp_2	CLK	0.01550	0.01554	0.01552
	CLK	0.01331	0.01335	0.01332
	RESET_B	0.01298	0.01293	0.01252
	RESET_B	0.01808	0.01801	0.01767
sky130_fd_sc_hs__sdfrtp_4	CLK	0.01919	0.01945	0.01946
	CLK	0.01695	0.01721	0.01721
	RESET_B	0.01669	0.01687	0.01647
	RESET_B	0.02169	0.02188	0.02157

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(CLK * RESET_B * SCD * SCE)**	0.00061	0.00061	0.00061
	(CLK * RESET_B * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * RESET_B * SCD * !SCE)	0.00321	0.00315	0.00309
	(CLK * RESET_B * SCD * !SCE)	0.00145	0.00139	0.00134
	(CLK * RESET_B * !SCD * !SCE)	0.00320	0.00315	0.00309
	(CLK * RESET_B * !SCD * !SCE)	0.00145	0.00139	0.00134
	(CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(CLK * !SCD * SCE)	-0.00063	-0.00064	-0.00065
	(CLK * !RESET_B * SCD * SCE)	0.00034	0.00034	0.00033
	(CLK * !RESET_B * SCD * SCE)	-0.00064	-0.00065	-0.00065
	(CLK * !RESET_B * SCD * !SCE)	0.00025	0.00025	0.00022
	(CLK * !RESET_B * SCD * !SCE)	-0.00072	-0.00073	-0.00078
	(CLK * !RESET_B * !SCD * !SCE)	0.00025	0.00025	0.00022
	(CLK * !RESET_B * !SCD * !SCE)	-0.00075	-0.00075	-0.00078
	(!CLK * RESET_B * SCD * SCE)	0.00061	0.00061	0.00061
	(!CLK * RESET_B * SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * RESET_B * SCD * !SCE)	0.00668	0.00664	0.00654
	(!CLK * RESET_B * SCD * !SCE)	0.00482	0.00477	0.00468
	(!CLK * RESET_B * !SCD * !SCE)	0.00668	0.00663	0.00654
	(!CLK * RESET_B * !SCD * !SCE)	0.00482	0.00477	0.00468
	(!CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(!CLK * !SCD * SCE)	-0.00063	-0.00064	-0.00064
	(!CLK * !RESET_B * SCD * SCE)	0.00034	0.00034	0.00033
	(!CLK * !RESET_B * SCD * SCE)	-0.00064	-0.00065	-0.00065
	(!CLK * !RESET_B * SCD * !SCE)	0.00025	0.00025	0.00022
	(!CLK * !RESET_B * SCD * !SCE)	-0.00072	-0.00073	-0.00078
	(!CLK * !RESET_B * !SCD * !SCE)	0.00025	0.00025	0.00022
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00075	-0.00075	-0.00078

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00058	0.00058	0.00058
	(CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00270	0.00264	0.00259
	(CLK * RESET_B * SCD * !SCE)	0.00103	0.00097	0.00092
	(CLK * RESET_B * !SCD * !SCE)	0.00270	0.00264	0.00260
	(CLK * RESET_B * !SCD * !SCE)	0.00103	0.00097	0.00092
	(CLK * !SCD * SCE)	0.00034	0.00034	0.00033
	(CLK * !SCD * SCE)	-0.00059	-0.00060	-0.00060
	(CLK * !RESET_B * SCD * SCE)	0.00032	0.00033	0.00032
	(CLK * !RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00061
	(CLK * !RESET_B * SCD * !SCE)	0.00024	0.00024	0.00021
	(CLK * !RESET_B * SCD * !SCE)	-0.00068	-0.00068	-0.00073
	(CLK * !RESET_B * !SCD * !SCE)	0.00024	0.00024	0.00021
	(CLK * !RESET_B * !SCD * !SCE)	-0.00070	-0.00071	-0.00074
	(!CLK * RESET_B * SCD * SCE)	0.00058	0.00058	0.00058
	(!CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * RESET_B * SCD * !SCE)	0.00633	0.00629	0.00619
	(!CLK * RESET_B * SCD * !SCE)	0.00456	0.00452	0.00442
	(!CLK * RESET_B * !SCD * !SCE)	0.00634	0.00629	0.00619
	(!CLK * RESET_B * !SCD * !SCE)	0.00456	0.00452	0.00442
	(!CLK * !SCD * SCE)	0.00034	0.00034	0.00033
	(!CLK * !SCD * SCE)	-0.00059	-0.00060	-0.00060
	(!CLK * !RESET_B * SCD * SCE)	0.00032	0.00033	0.00032
	(!CLK * !RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00061
	(!CLK * !RESET_B * SCD * !SCE)	0.00024	0.00024	0.00021
	(!CLK * !RESET_B * SCD * !SCE)	-0.00068	-0.00068	-0.00073
	(!CLK * !RESET_B * !SCD * !SCE)	0.00024	0.00024	0.00021
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00070	-0.00071	-0.00074

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00057	0.00058	0.00058
	(CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00274	0.00268	0.00263
	(CLK * RESET_B * SCD * !SCE)	0.00104	0.00098	0.00093
	(CLK * RESET_B * !SCD * !SCE)	0.00274	0.00268	0.00263
	(CLK * RESET_B * !SCD * !SCE)	0.00105	0.00098	0.00093
	(CLK * !SCD * SCE)	0.00034	0.00034	0.00033
	(CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00061
	(CLK * !RESET_B * SCD * SCE)	0.00032	0.00032	0.00032
	(CLK * !RESET_B * SCD * SCE)	-0.00061	-0.00061	-0.00061
	(CLK * !RESET_B * SCD * !SCE)	0.00025	0.00025	0.00022
	(CLK * !RESET_B * SCD * !SCE)	-0.00068	-0.00068	-0.00073
	(CLK * !RESET_B * !SCD * !SCE)	0.00024	0.00024	0.00022
	(CLK * !RESET_B * !SCD * !SCE)	-0.00070	-0.00070	-0.00074
	(!CLK * RESET_B * SCD * SCE)	0.00058	0.00058	0.00058
	(!CLK * RESET_B * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * RESET_B * SCD * !SCE)	0.00637	0.00633	0.00623
	(!CLK * RESET_B * SCD * !SCE)	0.00458	0.00453	0.00444
	(!CLK * RESET_B * !SCD * !SCE)	0.00638	0.00633	0.00624
	(!CLK * RESET_B * !SCD * !SCE)	0.00458	0.00453	0.00444
	(!CLK * !SCD * SCE)	0.00034	0.00034	0.00033
	(!CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00061
	(!CLK * !RESET_B * SCD * SCE)	0.00032	0.00032	0.00032
	(!CLK * !RESET_B * SCD * SCE)	-0.00061	-0.00061	-0.00061
	(!CLK * !RESET_B * SCD * !SCE)	0.00025	0.00025	0.00022
	(!CLK * !RESET_B * SCD * !SCE)	-0.00068	-0.00068	-0.00073
	(!CLK * !RESET_B * !SCD * !SCE)	0.00024	0.00024	0.00022
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00070	-0.00070	-0.00074

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(CLK * RESET_B * SCD * SCE)**	-0.00060	-0.00061	-0.00061
	(CLK * RESET_B * SCD * SCE)	0.00038	0.00038	0.00037
	(CLK * RESET_B * SCD * !SCE)	0.00045	0.00036	0.00034
	(CLK * RESET_B * SCD * !SCE)	0.00221	0.00212	0.00210
	(CLK * RESET_B * !SCD * !SCE)	0.00045	0.00036	0.00034
	(CLK * RESET_B * !SCD * !SCE)	0.00221	0.00212	0.00210
	(CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(CLK * !SCD * SCE)	0.00065	0.00065	0.00065
	(CLK * !RESET_B * SCD * SCE)	-0.00034	-0.00034	-0.00033
	(CLK * !RESET_B * SCD * SCE)	0.00065	0.00065	0.00065
	(CLK * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK * !RESET_B * SCD * !SCE)	0.00078	0.00079	0.00079
	(CLK * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK * !RESET_B * !SCD * !SCE)	0.00078	0.00079	0.00079
	(!CLK * RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00061
	(!CLK * RESET_B * SCD * SCE)	0.00038	0.00038	0.00037
	(!CLK * RESET_B * SCD * !SCE)	0.00363	0.00354	0.00324
	(!CLK * RESET_B * SCD * !SCE)	0.00549	0.00541	0.00500
	(!CLK * RESET_B * !SCD * !SCE)	0.00363	0.00354	0.00324
	(!CLK * RESET_B * !SCD * !SCE)	0.00549	0.00541	0.00500
	(!CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(!CLK * !SCD * SCE)	0.00065	0.00065	0.00064
	(!CLK * !RESET_B * SCD * SCE)	-0.00034	-0.00034	-0.00033
	(!CLK * !RESET_B * SCD * SCE)	0.00065	0.00065	0.00065
	(!CLK * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK * !RESET_B * SCD * !SCE)	0.00078	0.00079	0.00079
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK * !RESET_B * !SCD * !SCE)	0.00078	0.00079	0.00079

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00056	-0.00057	-0.00058
	(CLK * RESET_B * SCD * SCE)	0.00036	0.00036	0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00048	0.00040	0.00038
	(CLK * RESET_B * SCD * !SCE)	0.00216	0.00208	0.00206
	(CLK * RESET_B * !SCD * !SCE)	0.00048	0.00040	0.00038
	(CLK * RESET_B * !SCD * !SCE)	0.00216	0.00208	0.00206
	(CLK * !SCD * SCE)	-0.00033	-0.00033	-0.00033
	(CLK * !SCD * SCE)	0.00061	0.00060	0.00060
	(CLK * !RESET_B * SCD * SCE)	-0.00032	-0.00032	-0.00032
	(CLK * !RESET_B * SCD * SCE)	0.00061	0.00061	0.00061
	(CLK * !RESET_B * SCD * !SCE)	-0.00020	-0.00021	-0.00020
	(CLK * !RESET_B * SCD * !SCE)	0.00074	0.00074	0.00074
	(CLK * !RESET_B * !SCD * !SCE)	-0.00020	-0.00021	-0.00020
	(CLK * !RESET_B * !SCD * !SCE)	0.00074	0.00074	0.00074
	(!CLK * RESET_B * SCD * SCE)	-0.00057	-0.00057	-0.00058
	(!CLK * RESET_B * SCD * SCE)	0.00036	0.00036	0.00035
	(!CLK * RESET_B * SCD * !SCE)	0.00400	0.00391	0.00362
	(!CLK * RESET_B * SCD * !SCE)	0.00578	0.00569	0.00530
	(!CLK * RESET_B * !SCD * !SCE)	0.00400	0.00391	0.00362
	(!CLK * RESET_B * !SCD * !SCE)	0.00578	0.00569	0.00530
	(!CLK * !SCD * SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * !SCD * SCE)	0.00061	0.00061	0.00060
	(!CLK * !RESET_B * SCD * SCE)	-0.00032	-0.00032	-0.00032
	(!CLK * !RESET_B * SCD * SCE)	0.00061	0.00061	0.00061
	(!CLK * !RESET_B * SCD * !SCE)	-0.00020	-0.00021	-0.00020
	(!CLK * !RESET_B * SCD * !SCE)	0.00074	0.00074	0.00074
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00020	-0.00021	-0.00020
	(!CLK * !RESET_B * !SCD * !SCE)	0.00074	0.00074	0.00074

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00056	-0.00058	-0.00058
	(CLK * RESET_B * SCD * SCE)	0.00036	0.00036	0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00045	0.00037	0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00215	0.00207	0.00205
	(CLK * RESET_B * !SCD * !SCE)	0.00045	0.00037	0.00035
	(CLK * RESET_B * !SCD * !SCE)	0.00215	0.00207	0.00205
	(CLK * !SCD * SCE)	-0.00033	-0.00033	-0.00032
	(CLK * !SCD * SCE)	0.00061	0.00061	0.00061
	(CLK * !RESET_B * SCD * SCE)	-0.00032	-0.00032	-0.00032
	(CLK * !RESET_B * SCD * SCE)	0.00062	0.00061	0.00061
	(CLK * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK * !RESET_B * SCD * !SCE)	0.00073	0.00074	0.00074
	(CLK * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK * !RESET_B * !SCD * !SCE)	0.00073	0.00074	0.00074
	(!CLK * RESET_B * SCD * SCE)	-0.00056	-0.00057	-0.00058
	(!CLK * RESET_B * SCD * SCE)	0.00036	0.00036	0.00035
	(!CLK * RESET_B * SCD * !SCE)	0.00378	0.00369	0.00341
	(!CLK * RESET_B * SCD * !SCE)	0.00559	0.00550	0.00512
	(!CLK * RESET_B * !SCD * !SCE)	0.00378	0.00369	0.00341
	(!CLK * RESET_B * !SCD * !SCE)	0.00559	0.00550	0.00512
	(!CLK * !SCD * SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * !SCD * SCE)	0.00061	0.00061	0.00061
	(!CLK * !RESET_B * SCD * SCE)	-0.00032	-0.00032	-0.00032
	(!CLK * !RESET_B * SCD * SCE)	0.00062	0.00061	0.00061
	(!CLK * !RESET_B * SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK * !RESET_B * SCD * !SCE)	0.00073	0.00074	0.00074
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK * !RESET_B * !SCD * !SCE)	0.00073	0.00074	0.00074

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(CLK * D * RESET_B * SCE)**	0.00371	0.00366	0.00361
	(CLK * D * RESET_B * SCE)	0.00160	0.00156	0.00150
	(CLK * D * RESET_B * !SCE)	0.00050	0.00050	0.00050
	(CLK * D * RESET_B * !SCE)	-0.00060	-0.00061	-0.00061
	(CLK * D * !RESET_B * SCE)	0.00032	0.00032	0.00032
	(CLK * D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00066
	(CLK * D * !RESET_B * !SCE)	0.00023	0.00023	0.00023
	(CLK * D * !RESET_B * !SCE)	-0.00073	-0.00074	-0.00073
	(CLK * !D * RESET_B * SCE)	0.00393	0.00389	0.00381
	(CLK * !D * RESET_B * SCE)	0.00181	0.00177	0.00170
	(CLK * !D * !RESET_B * SCE)	0.00033	0.00033	0.00032
	(CLK * !D * !RESET_B * SCE)	-0.00066	-0.00067	-0.00066
	(!D * RESET_B * !SCE)	0.00039	0.00039	0.00039
	(!D * RESET_B * !SCE)	-0.00071	-0.00072	-0.00072
	(!D * !RESET_B * !SCE)	0.00025	0.00025	0.00025
	(!D * !RESET_B * !SCE)	-0.00075	-0.00076	-0.00076
	(!CLK * D * RESET_B * SCE)	0.00718	0.00714	0.00706
	(!CLK * D * RESET_B * SCE)	0.00497	0.00493	0.00485
	(!CLK * D * RESET_B * !SCE)	0.00050	0.00050	0.00050
	(!CLK * D * RESET_B * !SCE)	-0.00060	-0.00061	-0.00061
	(!CLK * D * !RESET_B * SCE)	0.00032	0.00032	0.00032
	(!CLK * D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00066
	(!CLK * D * !RESET_B * !SCE)	0.00023	0.00023	0.00023
	(!CLK * D * !RESET_B * !SCE)	-0.00073	-0.00074	-0.00073
	(!CLK * !D * RESET_B * SCE)	0.00740	0.00736	0.00726
	(!CLK * !D * RESET_B * SCE)	0.00518	0.00514	0.00505
	(!CLK * !D * !RESET_B * SCE)	0.00033	0.00032	0.00032
	(!CLK * !D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00066

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00329	0.00324	0.00319
	(CLK * D * RESET_B * SCE)	0.00122	0.00117	0.00112
	(CLK * D * RESET_B * !SCE)	0.00051	0.00051	0.00051
	(CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00060
	(CLK * D * !RESET_B * SCE)	0.00030	0.00030	0.00030
	(CLK * D * !RESET_B * SCE)	-0.00068	-0.00068	-0.00067
	(CLK * D * !RESET_B * !SCE)	0.00023	0.00023	0.00023
	(CLK * D * !RESET_B * !SCE)	-0.00073	-0.00074	-0.00074
	(CLK * !D * RESET_B * SCE)	0.00351	0.00347	0.00339
	(CLK * !D * RESET_B * SCE)	0.00143	0.00139	0.00132
	(CLK * !D * !RESET_B * SCE)	0.00031	0.00030	0.00030
	(CLK * !D * !RESET_B * SCE)	-0.00068	-0.00068	-0.00067
	(!D * RESET_B * !SCE)	0.00038	0.00039	0.00038
	(!D * RESET_B * !SCE)	-0.00072	-0.00072	-0.00072
	(!D * !RESET_B * !SCE)	0.00025	0.00025	0.00024
	(!D * !RESET_B * !SCE)	-0.00075	-0.00076	-0.00076
	(!CLK * D * RESET_B * SCE)	0.00692	0.00688	0.00679
	(!CLK * D * RESET_B * SCE)	0.00475	0.00471	0.00462
	(!CLK * D * RESET_B * !SCE)	0.00051	0.00051	0.00051
	(!CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00060
	(!CLK * D * !RESET_B * SCE)	0.00030	0.00030	0.00030
	(!CLK * D * !RESET_B * SCE)	-0.00068	-0.00068	-0.00067
	(!CLK * D * !RESET_B * !SCE)	0.00023	0.00023	0.00023
	(!CLK * D * !RESET_B * !SCE)	-0.00073	-0.00074	-0.00074
	(!CLK * !D * RESET_B * SCE)	0.00714	0.00710	0.00699
	(!CLK * !D * RESET_B * SCE)	0.00496	0.00492	0.00482
	(!CLK * !D * !RESET_B * SCE)	0.00031	0.00030	0.00030
	(!CLK * !D * !RESET_B * SCE)	-0.00068	-0.00068	-0.00067

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00331	0.00326	0.00321
	(CLK * D * RESET_B * SCE)	0.00123	0.00118	0.00113
	(CLK * D * RESET_B * !SCE)	0.00049	0.00050	0.00049
	(CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00060
	(CLK * D * !RESET_B * SCE)	0.00030	0.00030	0.00030
	(CLK * D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00066
	(CLK * D * !RESET_B * !SCE)	0.00022	0.00023	0.00022
	(CLK * D * !RESET_B * !SCE)	-0.00072	-0.00072	-0.00072
	(CLK * !D * RESET_B * SCE)	0.00353	0.00348	0.00341
	(CLK * !D * RESET_B * SCE)	0.00144	0.00139	0.00133
	(CLK * !D * !RESET_B * SCE)	0.00030	0.00030	0.00030
	(CLK * !D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00066
	(!D * RESET_B * !SCE)	0.00038	0.00038	0.00038
	(!D * RESET_B * !SCE)	-0.00070	-0.00071	-0.00071
	(!D * !RESET_B * !SCE)	0.00025	0.00025	0.00024
	(!D * !RESET_B * !SCE)	-0.00074	-0.00074	-0.00074
	(!CLK * D * RESET_B * SCE)	0.00694	0.00690	0.00681
	(!CLK * D * RESET_B * SCE)	0.00476	0.00472	0.00463
	(!CLK * D * RESET_B * !SCE)	0.00049	0.00049	0.00049
	(!CLK * D * RESET_B * !SCE)	-0.00059	-0.00060	-0.00060
	(!CLK * D * !RESET_B * SCE)	0.00030	0.00030	0.00030
	(!CLK * D * !RESET_B * SCE)	-0.00066	-0.00066	-0.00066
	(!CLK * D * !RESET_B * !SCE)	0.00022	0.00023	0.00022
	(!CLK * D * !RESET_B * !SCE)	-0.00072	-0.00072	-0.00072
	(!CLK * !D * RESET_B * SCE)	0.00716	0.00712	0.00702
	(!CLK * !D * RESET_B * SCE)	0.00497	0.00493	0.00483
	(!CLK * !D * !RESET_B * SCE)	0.00030	0.00030	0.00030
	(!CLK * !D * !RESET_B * SCE)	-0.00067	-0.00066	-0.00066

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	(CLK * D * RESET_B * SCE)	0.00100	0.00091	0.00087
	(CLK * D * RESET_B * SCE)	0.00310	0.00302	0.00297
	(CLK * D * RESET_B * !SCE)	-0.00049	-0.00050	-0.00050
	(CLK * D * RESET_B * !SCE)	0.00061	0.00061	0.00061
	(CLK * D * !RESET_B * SCE)	-0.00030	-0.00030	-0.00030
	(CLK * D * !RESET_B * SCE)	0.00068	0.00068	0.00066
	(CLK * D * !RESET_B * !SCE)	-0.00023	-0.00023	-0.00023
	(CLK * D * !RESET_B * !SCE)	0.00074	0.00074	0.00074
	(CLK * !D * RESET_B * SCE)	0.00081	0.00073	0.00072
	(CLK * !D * RESET_B * SCE)	0.00292	0.00285	0.00282
	(CLK * !D * !RESET_B * SCE)	-0.00030	-0.00030	-0.00030
	(CLK * !D * !RESET_B * SCE)	0.00068	0.00068	0.00066
	(!D * RESET_B * !SCE)	-0.00038	-0.00039	-0.00039
	(!D * RESET_B * !SCE)	0.00072	0.00072	0.00072
	(!D * !RESET_B * !SCE)	-0.00025	-0.00025	-0.00025
	(!D * !RESET_B * !SCE)	0.00076	0.00077	0.00076
	(!CLK * D * RESET_B * SCE)	0.00415	0.00408	0.00311
	(!CLK * D * RESET_B * SCE)	0.00637	0.00629	0.00518
	(!CLK * D * RESET_B * !SCE)	-0.00049	-0.00050	-0.00050
	(!CLK * D * RESET_B * !SCE)	0.00061	0.00061	0.00061
	(!CLK * D * !RESET_B * SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * D * !RESET_B * SCE)	0.00068	0.00068	0.00066
	(!CLK * D * !RESET_B * !SCE)	-0.00023	-0.00023	-0.00023
	(!CLK * D * !RESET_B * !SCE)	0.00074	0.00074	0.00074
	(!CLK * !D * RESET_B * SCE)	0.00397	0.00390	0.00292
	(!CLK * !D * RESET_B * SCE)	0.00620	0.00612	0.00496
	(!CLK * !D * !RESET_B * SCE)	-0.00030	-0.00030	-0.00030
	(!CLK * !D * !RESET_B * SCE)	0.00068	0.00068	0.00066

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00098	0.00090	0.00086
	(CLK * D * RESET_B * SCE)	0.00306	0.00298	0.00292
	(CLK * D * RESET_B * !SCE)	-0.00050	-0.00051	-0.00051
	(CLK * D * RESET_B * !SCE)	0.00060	0.00060	0.00060
	(CLK * D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * SCE)	0.00069	0.00069	0.00068
	(CLK * D * !RESET_B * !SCE)	-0.00022	-0.00023	-0.00022
	(CLK * D * !RESET_B * !SCE)	0.00074	0.00074	0.00074
	(CLK * !D * RESET_B * SCE)	0.00080	0.00072	0.00070
	(CLK * !D * RESET_B * SCE)	0.00288	0.00280	0.00277
	(CLK * !D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !D * !RESET_B * SCE)	0.00069	0.00069	0.00068
	(!D * RESET_B * !SCE)	-0.00038	-0.00039	-0.00038
	(!D * RESET_B * !SCE)	0.00072	0.00073	0.00072
	(!D * !RESET_B * !SCE)	-0.00025	-0.00025	-0.00024
	(!D * !RESET_B * !SCE)	0.00077	0.00077	0.00077
	(!CLK * D * RESET_B * SCE)	0.00449	0.00440	0.00359
	(!CLK * D * RESET_B * SCE)	0.00667	0.00658	0.00560
	(!CLK * D * RESET_B * !SCE)	-0.00050	-0.00051	-0.00051
	(!CLK * D * RESET_B * !SCE)	0.00060	0.00060	0.00060
	(!CLK * D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * SCE)	0.00069	0.00069	0.00068
	(!CLK * D * !RESET_B * !SCE)	-0.00022	-0.00023	-0.00022
	(!CLK * D * !RESET_B * !SCE)	0.00074	0.00074	0.00074
	(!CLK * !D * RESET_B * SCE)	0.00431	0.00423	0.00342
	(!CLK * !D * RESET_B * SCE)	0.00649	0.00641	0.00540
	(!CLK * !D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00029
	(!CLK * !D * !RESET_B * SCE)	0.00069	0.00069	0.00068

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00099	0.00091	0.00087
	(CLK * D * RESET_B * SCE)	0.00308	0.00300	0.00294
	(CLK * D * RESET_B * !SCE)	-0.00049	-0.00050	-0.00049
	(CLK * D * RESET_B * !SCE)	0.00060	0.00060	0.00060
	(CLK * D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * SCE)	0.00068	0.00068	0.00066
	(CLK * D * !RESET_B * !SCE)	-0.00022	-0.00022	-0.00022
	(CLK * D * !RESET_B * !SCE)	0.00073	0.00073	0.00073
	(CLK * !D * RESET_B * SCE)	0.00078	0.00070	0.00069
	(CLK * !D * RESET_B * SCE)	0.00287	0.00279	0.00277
	(CLK * !D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !D * !RESET_B * SCE)	0.00068	0.00068	0.00066
	(!D * RESET_B * !SCE)	-0.00037	-0.00038	-0.00038
	(!D * RESET_B * !SCE)	0.00071	0.00071	0.00071
	(!D * !RESET_B * !SCE)	-0.00025	-0.00025	-0.00024
	(!D * !RESET_B * !SCE)	0.00075	0.00075	0.00075
	(!CLK * D * RESET_B * SCE)	0.00431	0.00422	0.00347
	(!CLK * D * RESET_B * SCE)	0.00650	0.00641	0.00549
	(!CLK * D * RESET_B * !SCE)	-0.00049	-0.00049	-0.00049
	(!CLK * D * RESET_B * !SCE)	0.00060	0.00060	0.00060
	(!CLK * D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * SCE)	0.00068	0.00068	0.00066
	(!CLK * D * !RESET_B * !SCE)	-0.00022	-0.00022	-0.00022
	(!CLK * D * !RESET_B * !SCE)	0.00073	0.00073	0.00073
	(!CLK * !D * RESET_B * SCE)	0.00410	0.00402	0.00329
	(!CLK * !D * RESET_B * SCE)	0.00629	0.00621	0.00528
	(!CLK * !D * !RESET_B * SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !D * !RESET_B * SCE)	0.00068	0.00068	0.00066

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00278	0.00266	0.00260
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00016	-0.00028	-0.00034
	(CLK * D * RESET_B * !SCD)	0.00421	0.00410	0.00395
	(CLK * D * RESET_B * !SCD)	0.00222	0.00209	0.00193
	(CLK * !D * RESET_B * SCD)	0.00573	0.00557	0.00544
	(CLK * !D * RESET_B * SCD)	0.00199	0.00182	0.00170
	(!CLK * D * RESET_B * SCD)	0.00278	0.00267	0.00260
	(!CLK * D * RESET_B * SCD)	-0.00016	-0.00028	-0.00034
	(!CLK * D * RESET_B * !SCD)	0.00732	0.00725	0.00712
	(!CLK * D * RESET_B * !SCD)	0.00543	0.00534	0.00520
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00281	0.00270	0.00263
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00001	-0.00014	-0.00020
	(!CLK * !D * RESET_B * SCD)	0.00920	0.00905	0.00888
	(!CLK * !D * RESET_B * SCD)	0.00536	0.00520	0.00504

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00279	0.00268	0.00262
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00018	-0.00030	-0.00036
	(CLK * D * RESET_B * !SCD)	0.00417	0.00405	0.00391
	(CLK * D * RESET_B * !SCD)	0.00211	0.00197	0.00182
	(CLK * !D * RESET_B * SCD)	0.00532	0.00515	0.00503
	(CLK * !D * RESET_B * SCD)	0.00156	0.00140	0.00129
	(!CLK * D * RESET_B * SCD)	0.00279	0.00269	0.00262
	(!CLK * D * RESET_B * SCD)	-0.00018	-0.00030	-0.00036
	(!CLK * D * RESET_B * !SCD)	0.00761	0.00755	0.00742
	(!CLK * D * RESET_B * !SCD)	0.00565	0.00556	0.00543
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00279	0.00268	0.00261
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00007	-0.00021	-0.00026
	(!CLK * !D * RESET_B * SCD)	0.00895	0.00879	0.00862
	(!CLK * !D * RESET_B * SCD)	0.00510	0.00494	0.00478

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00280	0.00268	0.00263
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00018	-0.00030	-0.00036
	(CLK * D * RESET_B * !SCD)	0.00418	0.00406	0.00392
	(CLK * D * RESET_B * !SCD)	0.00213	0.00200	0.00184
	(CLK * !D * RESET_B * SCD)	0.00535	0.00519	0.00506
	(CLK * !D * RESET_B * SCD)	0.00157	0.00140	0.00129
	(!CLK * D * RESET_B * SCD)	0.00280	0.00270	0.00262
	(!CLK * D * RESET_B * SCD)	-0.00018	-0.00030	-0.00036
	(!CLK * D * RESET_B * !SCD)	0.00743	0.00737	0.00724
	(!CLK * D * RESET_B * !SCD)	0.00548	0.00540	0.00526
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00278	0.00267	0.00261
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00008	-0.00022	-0.00027
	(!CLK * !D * RESET_B * SCD)	0.00899	0.00883	0.00866
	(!CLK * !D * RESET_B * SCD)	0.00511	0.00495	0.00479

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfrtp_1	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00005	-0.00015	-0.00018
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00286	0.00279	0.00276
	(CLK * D * RESET_B * !SCD)	0.00305	0.00296	0.00287
	(CLK * D * RESET_B * !SCD)	0.00506	0.00496	0.00488
	(CLK * !D * RESET_B * SCD)	0.00073	0.00056	0.00052
	(CLK * !D * RESET_B * SCD)	0.00446	0.00429	0.00426
	(!CLK * D * RESET_B * SCD)	-0.00005	-0.00015	-0.00018
	(!CLK * D * RESET_B * SCD)	0.00286	0.00279	0.00276
	(!CLK * D * RESET_B * !SCD)	0.00651	0.00643	0.00635
	(!CLK * D * RESET_B * !SCD)	0.00841	0.00833	0.00826
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00010	-0.00019	-0.00022
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00272	0.00263	0.00260
	(!CLK * !D * RESET_B * SCD)	0.00391	0.00374	0.00322
	(!CLK * !D * RESET_B * SCD)	0.00775	0.00759	0.00692

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00012	-0.00021	-0.00024
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00285	0.00277	0.00273
	(CLK * D * RESET_B * !SCD)	0.00251	0.00242	0.00233
	(CLK * D * RESET_B * !SCD)	0.00459	0.00448	0.00441
	(CLK * !D * RESET_B * SCD)	0.00072	0.00055	0.00052
	(CLK * !D * RESET_B * SCD)	0.00446	0.00430	0.00426
	(!CLK * D * RESET_B * SCD)	-0.00012	-0.00021	-0.00024
	(!CLK * D * RESET_B * SCD)	0.00285	0.00277	0.00273
	(!CLK * D * RESET_B * !SCD)	0.00612	0.00605	0.00597
	(!CLK * D * RESET_B * !SCD)	0.00810	0.00802	0.00796
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00012	-0.00022	-0.00025
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00274	0.00265	0.00261
	(!CLK * !D * RESET_B * SCD)	0.00425	0.00408	0.00355
	(!CLK * !D * RESET_B * SCD)	0.00809	0.00793	0.00726

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00014	-0.00023	-0.00026
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00284	0.00275	0.00272
	(CLK * D * RESET_B * !SCD)	0.00253	0.00243	0.00235
	(CLK * D * RESET_B * !SCD)	0.00459	0.00449	0.00442
	(CLK * !D * RESET_B * SCD)	0.00069	0.00052	0.00048
	(CLK * !D * RESET_B * SCD)	0.00446	0.00430	0.00426
	(!CLK * D * RESET_B * SCD)	-0.00014	-0.00023	-0.00026
	(!CLK * D * RESET_B * SCD)	0.00284	0.00276	0.00272
	(!CLK * D * RESET_B * !SCD)	0.00614	0.00607	0.00599
	(!CLK * D * RESET_B * !SCD)	0.00810	0.00803	0.00796
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00013	-0.00022	-0.00025
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00274	0.00265	0.00261
	(!CLK * !D * RESET_B * SCD)	0.00402	0.00386	0.00336
	(!CLK * !D * RESET_B * SCD)	0.00790	0.00774	0.00710

Passive power(pJ) for RESET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfrtp_1	**(CLK * D * SCD * SCE * !Q)**	0.00509	0.00505	0.00498
	(CLK * D * SCD * SCE * !Q)	0.00027	0.00019	0.00015
	(CLK * D * SCD * !SCE * !Q)	0.00506	0.00501	0.00498
	(CLK * D * SCD * !SCE * !Q)	0.00037	0.00029	0.00026
	(CLK * D * !SCD * SCE * !Q)	0.00159	0.00161	0.00159
	(CLK * D * !SCD * SCE * !Q)	-0.00208	-0.00210	-0.00208
	(CLK * D * !SCD * !SCE * !Q)	0.00491	0.00484	0.00481
	(CLK * D * !SCD * !SCE * !Q)	0.00037	0.00030	0.00026
	(CLK * !D * SCD * SCE * !Q)	0.00531	0.00526	0.00520
	(CLK * !D * SCD * SCE * !Q)	0.00047	0.00041	0.00035
	(CLK * !D * SCD * !SCE * !Q)	0.00157	0.00159	0.00157
	(CLK * !D * SCD * !SCE * !Q)	-0.00209	-0.00211	-0.00209
	(CLK * !D * !SCD * SCE * !Q)	0.00159	0.00161	0.00159
	(CLK * !D * !SCD * SCE * !Q)	-0.00208	-0.00210	-0.00208
	(CLK * !D * !SCD * !SCE * !Q)	0.00157	0.00159	0.00157
	(CLK * !D * !SCD * !SCE * !Q)	-0.00209	-0.00211	-0.00209
	(!CLK * D * SCD * SCE * !Q)	0.00887	0.00873	0.00860
	(!CLK * D * SCD * SCE * !Q)	0.00395	0.00382	0.00367
	(!CLK * D * SCD * !SCE * !Q)	0.00884	0.00871	0.00857
	(!CLK * D * SCD * !SCE * !Q)	0.00406	0.00392	0.00380
	(!CLK * D * !SCD * SCE * !Q)	0.00159	0.00162	0.00160
	(!CLK * D * !SCD * SCE * !Q)	-0.00207	-0.00209	-0.00207
	(!CLK * D * !SCD * !SCE * !Q)	0.00868	0.00854	0.00842
	(!CLK * D * !SCD * !SCE * !Q)	0.00406	0.00392	0.00378
	(!CLK * !D * SCD * SCE * !Q)	0.00909	0.00897	0.00881
	(!CLK * !D * SCD * SCE * !Q)	0.00416	0.00404	0.00387
	(!CLK * !D * SCD * !SCE * !Q)	0.00157	0.00160	0.00158
	(!CLK * !D * SCD * !SCE * !Q)	-0.00208	-0.00210	-0.00208
	(!CLK * !D * !SCD * SCE * !Q)	0.00160	0.00162	0.00160
	(!CLK * !D * !SCD * SCE * !Q)	-0.00207	-0.00209	-0.00207
	(!CLK * !D * !SCD * !SCE * !Q)	0.00158	0.00160	0.00158
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00208	-0.00210	-0.00208

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00467	0.00462	0.00456
	(CLK * D * SCD * SCE * !Q)	-0.00015	-0.00022	-0.00025
	(CLK * D * SCD * !SCE * !Q)	0.00457	0.00452	0.00449
	(CLK * D * SCD * !SCE * !Q)	-0.00010	-0.00019	-0.00021
	(CLK * D * !SCD * SCE * !Q)	0.00159	0.00160	0.00159
	(CLK * D * !SCD * SCE * !Q)	-0.00209	-0.00210	-0.00209
	(CLK * D * !SCD * !SCE * !Q)	0.00442	0.00435	0.00433
	(CLK * D * !SCD * !SCE * !Q)	-0.00010	-0.00018	-0.00021
	(CLK * !D * SCD * SCE * !Q)	0.00489	0.00485	0.00477
	(CLK * !D * SCD * SCE * !Q)	0.00006	-0.00000	-0.00006
	(CLK * !D * SCD * !SCE * !Q)	0.00158	0.00158	0.00157
	(CLK * !D * SCD * !SCE * !Q)	-0.00211	-0.00211	-0.00210
	(CLK * !D * !SCD * SCE * !Q)	0.00159	0.00160	0.00159
	(CLK * !D * !SCD * SCE * !Q)	-0.00209	-0.00210	-0.00209
	(CLK * !D * !SCD * !SCE * !Q)	0.00158	0.00158	0.00158
	(CLK * !D * !SCD * !SCE * !Q)	-0.00212	-0.00211	-0.00211
	(!CLK * D * SCD * SCE * !Q)	0.00863	0.00850	0.00836
	(!CLK * D * SCD * SCE * !Q)	0.00374	0.00360	0.00345
	(!CLK * D * SCD * !SCE * !Q)	0.00854	0.00840	0.00828
	(!CLK * D * SCD * !SCE * !Q)	0.00378	0.00364	0.00350
	(!CLK * D * !SCD * SCE * !Q)	0.00159	0.00159	0.00159
	(!CLK * D * !SCD * SCE * !Q)	-0.00209	-0.00210	-0.00210
	(!CLK * D * !SCD * !SCE * !Q)	0.00838	0.00824	0.00811
	(!CLK * D * !SCD * !SCE * !Q)	0.00378	0.00364	0.00350
	(!CLK * !D * SCD * SCE * !Q)	0.00885	0.00873	0.00856
	(!CLK * !D * SCD * SCE * !Q)	0.00395	0.00382	0.00365
	(!CLK * !D * SCD * !SCE * !Q)	0.00157	0.00158	0.00157
	(!CLK * !D * SCD * !SCE * !Q)	-0.00211	-0.00210	-0.00211
	(!CLK * !D * !SCD * SCE * !Q)	0.00159	0.00159	0.00159
	(!CLK * !D * !SCD * SCE * !Q)	-0.00209	-0.00210	-0.00210
	(!CLK * !D * !SCD * !SCE * !Q)	0.00157	0.00158	0.00157
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00211	-0.00211	-0.00211

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00469	0.00462	0.00458
	(CLK * D * SCD * SCE * !Q)	-0.00011	-0.00017	-0.00022
	(CLK * D * SCD * !SCE * !Q)	0.00460	0.00454	0.00451
	(CLK * D * SCD * !SCE * !Q)	-0.00007	-0.00015	-0.00017
	(CLK * D * !SCD * SCE * !Q)	0.00156	0.00159	0.00157
	(CLK * D * !SCD * SCE * !Q)	-0.00208	-0.00210	-0.00208
	(CLK * D * !SCD * !SCE * !Q)	0.00444	0.00438	0.00434
	(CLK * D * !SCD * !SCE * !Q)	-0.00006	-0.00015	-0.00018
	(CLK * !D * SCD * SCE * !Q)	0.00491	0.00487	0.00479
	(CLK * !D * SCD * SCE * !Q)	0.00010	0.00003	-0.00003
	(CLK * !D * SCD * !SCE * !Q)	0.00154	0.00157	0.00155
	(CLK * !D * SCD * !SCE * !Q)	-0.00208	-0.00211	-0.00209
	(CLK * !D * !SCD * SCE * !Q)	0.00156	0.00159	0.00156
	(CLK * !D * !SCD * SCE * !Q)	-0.00208	-0.00210	-0.00208
	(CLK * !D * !SCD * !SCE * !Q)	0.00155	0.00157	0.00155
	(CLK * !D * !SCD * !SCE * !Q)	-0.00209	-0.00211	-0.00210
	(!CLK * D * SCD * SCE * !Q)	0.00860	0.00847	0.00834
	(!CLK * D * SCD * SCE * !Q)	0.00372	0.00359	0.00344
	(!CLK * D * SCD * !SCE * !Q)	0.00851	0.00837	0.00825
	(!CLK * D * SCD * !SCE * !Q)	0.00377	0.00362	0.00349
	(!CLK * D * !SCD * SCE * !Q)	0.00157	0.00158	0.00156
	(!CLK * D * !SCD * SCE * !Q)	-0.00208	-0.00211	-0.00209
	(!CLK * D * !SCD * !SCE * !Q)	0.00835	0.00821	0.00808
	(!CLK * D * !SCD * !SCE * !Q)	0.00377	0.00362	0.00349
	(!CLK * !D * SCD * SCE * !Q)	0.00882	0.00870	0.00854
	(!CLK * !D * SCD * SCE * !Q)	0.00394	0.00381	0.00364
	(!CLK * !D * SCD * !SCE * !Q)	0.00154	0.00156	0.00154
	(!CLK * !D * SCD * !SCE * !Q)	-0.00210	-0.00211	-0.00210
	(!CLK * !D * !SCD * SCE * !Q)	0.00156	0.00158	0.00156
	(!CLK * !D * !SCD * SCE * !Q)	-0.00208	-0.00211	-0.00209
	(!CLK * !D * !SCD * !SCE * !Q)	0.00155	0.00156	0.00155
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00210	-0.00212	-0.00210

Passive power(pJ) for RESET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(CLK * D * SCD * SCE * !Q)**	0.00023	0.00013	0.00006
	(CLK * D * SCD * SCE * !Q)	0.00509	0.00499	0.00489
	(CLK * D * SCD * !SCE * !Q)	-0.00014	-0.00025	-0.00033
	(CLK * D * SCD * !SCE * !Q)	0.00457	0.00447	0.00437
	(CLK * D * !SCD * SCE * !Q)	-0.00157	-0.00160	-0.00159
	(CLK * D * !SCD * SCE * !Q)	0.00208	0.00210	0.00208
	(CLK * D * !SCD * !SCE * !Q)	-0.00026	-0.00037	-0.00043
	(CLK * D * !SCD * !SCE * !Q)	0.00428	0.00418	0.00410
	(CLK * !D * SCD * SCE * !Q)	0.00006	-0.00005	-0.00010
	(CLK * !D * SCD * SCE * !Q)	0.00490	0.00481	0.00474
	(CLK * !D * SCD * !SCE * !Q)	-0.00155	-0.00158	-0.00157
	(CLK * !D * SCD * !SCE * !Q)	0.00210	0.00211	0.00209
	(CLK * !D * !SCD * SCE * !Q)	-0.00157	-0.00160	-0.00159
	(CLK * !D * !SCD * SCE * !Q)	0.00208	0.00210	0.00208
	(CLK * !D * !SCD * !SCE * !Q)	-0.00156	-0.00159	-0.00157
	(CLK * !D * !SCD * !SCE * !Q)	0.00211	0.00211	0.00209
	(!CLK * D * SCD * SCE * !Q)	0.00369	0.00347	0.00325
	(!CLK * D * SCD * SCE * !Q)	0.00863	0.00841	0.00816
	(!CLK * D * SCD * !SCE * !Q)	0.00331	0.00309	0.00287
	(!CLK * D * SCD * !SCE * !Q)	0.00812	0.00789	0.00764
	(!CLK * D * !SCD * SCE * !Q)	-0.00158	-0.00161	-0.00160
	(!CLK * D * !SCD * SCE * !Q)	0.00207	0.00209	0.00207
	(!CLK * D * !SCD * !SCE * !Q)	0.00319	0.00297	0.00275
	(!CLK * D * !SCD * !SCE * !Q)	0.00783	0.00760	0.00738
	(!CLK * !D * SCD * SCE * !Q)	0.00351	0.00329	0.00309
	(!CLK * !D * SCD * SCE * !Q)	0.00846	0.00823	0.00801
	(!CLK * !D * SCD * !SCE * !Q)	-0.00156	-0.00159	-0.00158
	(!CLK * !D * SCD * !SCE * !Q)	0.00210	0.00210	0.00208
	(!CLK * !D * !SCD * SCE * !Q)	-0.00158	-0.00161	-0.00160
	(!CLK * !D * !SCD * SCE * !Q)	0.00207	0.00209	0.00207
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00157	-0.00160	-0.00158
	(!CLK * !D * !SCD * !SCE * !Q)	0.00210	0.00210	0.00209

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00017	0.00008	0.00001
	(CLK * D * SCD * SCE * !Q)	0.00502	0.00492	0.00483
	(CLK * D * SCD * !SCE * !Q)	-0.00016	-0.00026	-0.00033
	(CLK * D * SCD * !SCE * !Q)	0.00456	0.00445	0.00436
	(CLK * D * !SCD * SCE * !Q)	-0.00157	-0.00160	-0.00159
	(CLK * D * !SCD * SCE * !Q)	0.00209	0.00211	0.00210
	(CLK * D * !SCD * !SCE * !Q)	-0.00027	-0.00038	-0.00044
	(CLK * D * !SCD * !SCE * !Q)	0.00425	0.00416	0.00409
	(CLK * !D * SCD * SCE * !Q)	-0.00000	-0.00010	-0.00015
	(CLK * !D * SCD * SCE * !Q)	0.00483	0.00474	0.00468
	(CLK * !D * SCD * !SCE * !Q)	-0.00155	-0.00158	-0.00157
	(CLK * !D * SCD * !SCE * !Q)	0.00211	0.00212	0.00211
	(CLK * !D * !SCD * SCE * !Q)	-0.00157	-0.00160	-0.00159
	(CLK * !D * !SCD * SCE * !Q)	0.00209	0.00211	0.00210
	(CLK * !D * !SCD * !SCE * !Q)	-0.00156	-0.00158	-0.00158
	(CLK * !D * !SCD * !SCE * !Q)	0.00213	0.00213	0.00211
	(!CLK * D * SCD * SCE * !Q)	0.00396	0.00374	0.00352
	(!CLK * D * SCD * SCE * !Q)	0.00889	0.00866	0.00842
	(!CLK * D * SCD * !SCE * !Q)	0.00364	0.00341	0.00319
	(!CLK * D * SCD * !SCE * !Q)	0.00842	0.00819	0.00794
	(!CLK * D * !SCD * SCE * !Q)	-0.00157	-0.00159	-0.00159
	(!CLK * D * !SCD * SCE * !Q)	0.00209	0.00210	0.00210
	(!CLK * D * !SCD * !SCE * !Q)	0.00351	0.00329	0.00307
	(!CLK * D * !SCD * !SCE * !Q)	0.00813	0.00791	0.00768
	(!CLK * !D * SCD * SCE * !Q)	0.00379	0.00357	0.00336
	(!CLK * !D * SCD * SCE * !Q)	0.00871	0.00849	0.00826
	(!CLK * !D * SCD * !SCE * !Q)	-0.00155	-0.00157	-0.00157
	(!CLK * !D * SCD * !SCE * !Q)	0.00212	0.00210	0.00211
	(!CLK * !D * !SCD * SCE * !Q)	-0.00157	-0.00159	-0.00159
	(!CLK * !D * !SCD * SCE * !Q)	0.00209	0.00210	0.00210
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00156	-0.00157	-0.00157
	(!CLK * !D * !SCD * !SCE * !Q)	0.00213	0.00211	0.00211

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00019	0.00008	0.00002
	(CLK * D * SCD * SCE * !Q)	0.00500	0.00491	0.00482
	(CLK * D * SCD * !SCE * !Q)	-0.00014	-0.00025	-0.00032
	(CLK * D * SCD * !SCE * !Q)	0.00455	0.00444	0.00435
	(CLK * D * !SCD * SCE * !Q)	-0.00155	-0.00158	-0.00157
	(CLK * D * !SCD * SCE * !Q)	0.00208	0.00210	0.00208
	(CLK * D * !SCD * !SCE * !Q)	-0.00026	-0.00037	-0.00043
	(CLK * D * !SCD * !SCE * !Q)	0.00424	0.00415	0.00408
	(CLK * !D * SCD * SCE * !Q)	-0.00002	-0.00013	-0.00017
	(CLK * !D * SCD * SCE * !Q)	0.00480	0.00471	0.00464
	(CLK * !D * SCD * !SCE * !Q)	-0.00152	-0.00156	-0.00155
	(CLK * !D * SCD * !SCE * !Q)	0.00210	0.00211	0.00209
	(CLK * !D * !SCD * SCE * !Q)	-0.00155	-0.00158	-0.00156
	(CLK * !D * !SCD * SCE * !Q)	0.00208	0.00210	0.00208
	(CLK * !D * !SCD * !SCE * !Q)	-0.00154	-0.00156	-0.00155
	(CLK * !D * !SCD * !SCE * !Q)	0.00211	0.00211	0.00210
	(!CLK * D * SCD * SCE * !Q)	0.00381	0.00359	0.00336
	(!CLK * D * SCD * SCE * !Q)	0.00871	0.00849	0.00825
	(!CLK * D * SCD * !SCE * !Q)	0.00348	0.00325	0.00303
	(!CLK * D * SCD * !SCE * !Q)	0.00825	0.00803	0.00777
	(!CLK * D * !SCD * SCE * !Q)	-0.00154	-0.00157	-0.00156
	(!CLK * D * !SCD * SCE * !Q)	0.00208	0.00211	0.00209
	(!CLK * D * !SCD * !SCE * !Q)	0.00335	0.00313	0.00292
	(!CLK * D * !SCD * !SCE * !Q)	0.00796	0.00773	0.00751
	(!CLK * !D * SCD * SCE * !Q)	0.00360	0.00338	0.00318
	(!CLK * !D * SCD * SCE * !Q)	0.00851	0.00829	0.00807
	(!CLK * !D * SCD * !SCE * !Q)	-0.00152	-0.00155	-0.00154
	(!CLK * !D * SCD * !SCE * !Q)	0.00211	0.00212	0.00210
	(!CLK * !D * !SCD * SCE * !Q)	-0.00154	-0.00157	-0.00156
	(!CLK * !D * !SCD * SCE * !Q)	0.00208	0.00211	0.00209
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00153	-0.00156	-0.00155
	(!CLK * !D * !SCD * !SCE * !Q)	0.00212	0.00212	0.00210

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	(D * RESET_B * SCD * SCE * Q)	0.00740	0.00724	0.00711
	(D * RESET_B * SCD * SCE * Q)	0.00515	0.00497	0.00485
	(D * RESET_B * SCD * !SCE * Q)	0.00740	0.00724	0.00711
	(D * RESET_B * SCD * !SCE * Q)	0.00515	0.00497	0.00485
	(D * RESET_B * !SCD * !SCE * Q)	0.00740	0.00724	0.00711
	(D * RESET_B * !SCD * !SCE * Q)	0.00515	0.00497	0.00485
	(D * !SCD * SCE * !Q)	0.00766	0.00749	0.00736
	(D * !SCD * SCE * !Q)	0.00541	0.00523	0.00510
	(D * !RESET_B * SCD * SCE * !Q)	0.00766	0.00749	0.00736
	(D * !RESET_B * SCD * SCE * !Q)	0.00541	0.00523	0.00510
	(D * !RESET_B * SCD * !SCE * !Q)	0.00766	0.00749	0.00736
	(D * !RESET_B * SCD * !SCE * !Q)	0.00541	0.00523	0.00510
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00766	0.00749	0.00736
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00541	0.00523	0.00510
	(!D * RESET_B * SCD * SCE * Q)	0.00740	0.00724	0.00711
	(!D * RESET_B * SCD * SCE * Q)	0.00515	0.00497	0.00485
	(!D * !SCE * !Q)	0.00766	0.00749	0.00736
	(!D * !SCE * !Q)	0.00541	0.00523	0.00510
	(!D * !SCD * SCE * !Q)	0.00766	0.00749	0.00736
	(!D * !SCD * SCE * !Q)	0.00541	0.00523	0.00510
	(!D * !RESET_B * SCD * SCE * !Q)	0.00766	0.00749	0.00736
	(!D * !RESET_B * SCD * SCE * !Q)	0.00541	0.00523	0.00510

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00739	0.00722	0.00709
	(D * RESET_B * SCD * SCE * Q)	0.00512	0.00494	0.00482
	(D * RESET_B * SCD * !SCE * Q)	0.00739	0.00722	0.00709
	(D * RESET_B * SCD * !SCE * Q)	0.00512	0.00494	0.00482
	(D * RESET_B * !SCD * !SCE * Q)	0.00739	0.00722	0.00709
	(D * RESET_B * !SCD * !SCE * Q)	0.00512	0.00494	0.00482
	(D * !SCD * SCE * !Q)	0.00768	0.00751	0.00738
	(D * !SCD * SCE * !Q)	0.00541	0.00523	0.00510
	(D * !RESET_B * SCD * SCE * !Q)	0.00768	0.00751	0.00738
	(D * !RESET_B * SCD * SCE * !Q)	0.00541	0.00523	0.00510
	(D * !RESET_B * SCD * !SCE * !Q)	0.00768	0.00751	0.00738
	(D * !RESET_B * SCD * !SCE * !Q)	0.00541	0.00523	0.00510
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00768	0.00751	0.00738
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00541	0.00523	0.00510
	(!D * RESET_B * SCD * SCE * Q)	0.00739	0.00722	0.00709
	(!D * RESET_B * SCD * SCE * Q)	0.00512	0.00494	0.00482
	(!D * !SCE * !Q)	0.00768	0.00751	0.00738
	(!D * !SCE * !Q)	0.00541	0.00523	0.00510
	(!D * !SCD * SCE * !Q)	0.00768	0.00751	0.00738
	(!D * !SCD * SCE * !Q)	0.00541	0.00523	0.00510
	(!D * !RESET_B * SCD * SCE * !Q)	0.00768	0.00751	0.00738
	(!D * !RESET_B * SCD * SCE * !Q)	0.00541	0.00523	0.00510

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00728	0.00712	0.00699
	(D * RESET_B * SCD * SCE * Q)	0.00501	0.00484	0.00471
	(D * RESET_B * SCD * !SCE * Q)	0.00728	0.00712	0.00699
	(D * RESET_B * SCD * !SCE * Q)	0.00501	0.00484	0.00471
	(D * RESET_B * !SCD * !SCE * Q)	0.00728	0.00712	0.00699
	(D * RESET_B * !SCD * !SCE * Q)	0.00501	0.00484	0.00471
	(D * !SCD * SCE * !Q)	0.00756	0.00739	0.00726
	(D * !SCD * SCE * !Q)	0.00529	0.00511	0.00498
	(D * !RESET_B * SCD * SCE * !Q)	0.00756	0.00739	0.00726
	(D * !RESET_B * SCD * SCE * !Q)	0.00529	0.00511	0.00499
	(D * !RESET_B * SCD * !SCE * !Q)	0.00756	0.00739	0.00726
	(D * !RESET_B * SCD * !SCE * !Q)	0.00529	0.00511	0.00499
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00756	0.00739	0.00726
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00529	0.00511	0.00499
	(!D * RESET_B * SCD * SCE * Q)	0.00728	0.00712	0.00699
	(!D * RESET_B * SCD * SCE * Q)	0.00501	0.00484	0.00471
	(!D * !SCE * !Q)	0.00756	0.00739	0.00726
	(!D * !SCE * !Q)	0.00529	0.00511	0.00498
	(!D * !SCD * SCE * !Q)	0.00756	0.00739	0.00726
	(!D * !SCD * SCE * !Q)	0.00529	0.00511	0.00499
	(!D * !RESET_B * SCD * SCE * !Q)	0.00756	0.00739	0.00726
	(!D * !RESET_B * SCD * SCE * !Q)	0.00529	0.00511	0.00499

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrtp_1	**(D * RESET_B * SCD * SCE * Q)**	0.00404	0.00389	0.00378
	(D * RESET_B * SCD * SCE * Q)	0.00631	0.00615	0.00604
	(D * RESET_B * SCD * SCE * !Q)	0.00738	0.00721	0.00705
	(D * RESET_B * SCD * SCE * !Q)	0.00954	0.00937	0.00921
	(D * RESET_B * SCD * !SCE * Q)	0.00404	0.00389	0.00378
	(D * RESET_B * SCD * !SCE * Q)	0.00631	0.00615	0.00604
	(D * RESET_B * SCD * !SCE * !Q)	0.00735	0.00719	0.00703
	(D * RESET_B * SCD * !SCE * !Q)	0.00952	0.00934	0.00919
	(D * RESET_B * !SCD * SCE * Q)	0.00764	0.00751	0.00734
	(D * RESET_B * !SCD * SCE * Q)	0.01002	0.00989	0.00965
	(D * RESET_B * !SCD * !SCE * Q)	0.00404	0.00389	0.00378
	(D * RESET_B * !SCD * !SCE * Q)	0.00631	0.00615	0.00604
	(D * RESET_B * !SCD * !SCE * !Q)	0.00735	0.00719	0.00703
	(D * RESET_B * !SCD * !SCE * !Q)	0.00952	0.00934	0.00919
	(D * !SCD * SCE * !Q)	0.00377	0.00362	0.00351
	(D * !SCD * SCE * !Q)	0.00604	0.00588	0.00577
	(D * !RESET_B * SCD * SCE * !Q)	0.00378	0.00362	0.00351
	(D * !RESET_B * SCD * SCE * !Q)	0.00604	0.00588	0.00578
	(D * !RESET_B * SCD * !SCE * !Q)	0.00378	0.00362	0.00351
	(D * !RESET_B * SCD * !SCE * !Q)	0.00604	0.00588	0.00577
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00378	0.00362	0.00351
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00604	0.00588	0.00577
	(!D * RESET_B * SCD * SCE * Q)	0.00404	0.00389	0.00378
	(!D * RESET_B * SCD * SCE * Q)	0.00631	0.00615	0.00604
	(!D * RESET_B * SCD * SCE * !Q)	0.00740	0.00724	0.00708
	(!D * RESET_B * SCD * SCE * !Q)	0.00956	0.00938	0.00922
	(!D * RESET_B * !SCE * Q)	0.00762	0.00749	0.00736
	(!D * RESET_B * !SCE * Q)	0.00999	0.00986	0.00964
	(!D * RESET_B * !SCD * SCE * Q)	0.00763	0.00750	0.00733
	(!D * RESET_B * !SCD * SCE * Q)	0.01001	0.00987	0.00960
	(!D * !SCE * !Q)	0.00377	0.00362	0.00351
	(!D * !SCE * !Q)	0.00604	0.00588	0.00577
	(!D * !SCD * SCE * !Q)	0.00377	0.00362	0.00351
	(!D * !SCD * SCE * !Q)	0.00604	0.00588	0.00577
	(!D * !RESET_B * SCD * SCE * !Q)	0.00378	0.00362	0.00351
	(!D * !RESET_B * SCD * SCE * !Q)	0.00604	0.00588	0.00578

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00405	0.00390	0.00379
	(D * RESET_B * SCD * SCE * Q)	0.00634	0.00618	0.00607
	(D * RESET_B * SCD * SCE * !Q)	0.00756	0.00740	0.00724
	(D * RESET_B * SCD * SCE * !Q)	0.00975	0.00958	0.00942
	(D * RESET_B * SCD * !SCE * Q)	0.00405	0.00390	0.00379
	(D * RESET_B * SCD * !SCE * Q)	0.00634	0.00618	0.00607
	(D * RESET_B * SCD * !SCE * !Q)	0.00753	0.00737	0.00721
	(D * RESET_B * SCD * !SCE * !Q)	0.00972	0.00955	0.00939
	(D * RESET_B * !SCD * SCE * Q)	0.00799	0.00786	0.00762
	(D * RESET_B * !SCD * SCE * Q)	0.01039	0.01025	0.00993
	(D * RESET_B * !SCD * !SCE * Q)	0.00405	0.00390	0.00379
	(D * RESET_B * !SCD * !SCE * Q)	0.00634	0.00618	0.00607
	(D * RESET_B * !SCD * !SCE * !Q)	0.00753	0.00737	0.00721
	(D * RESET_B * !SCD * !SCE * !Q)	0.00972	0.00955	0.00939
	(D * !SCD * SCE * !Q)	0.00379	0.00364	0.00353
	(D * !SCD * SCE * !Q)	0.00607	0.00592	0.00581
	(D * !RESET_B * SCD * SCE * !Q)	0.00379	0.00364	0.00353
	(D * !RESET_B * SCD * SCE * !Q)	0.00607	0.00592	0.00581
	(D * !RESET_B * SCD * !SCE * !Q)	0.00379	0.00364	0.00353
	(D * !RESET_B * SCD * !SCE * !Q)	0.00607	0.00592	0.00581
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00379	0.00364	0.00353
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00607	0.00592	0.00581
	(!D * RESET_B * SCD * SCE * Q)	0.00405	0.00390	0.00379
	(!D * RESET_B * SCD * SCE * Q)	0.00634	0.00618	0.00607
	(!D * RESET_B * SCD * SCE * !Q)	0.00758	0.00742	0.00726
	(!D * RESET_B * SCD * SCE * !Q)	0.00976	0.00959	0.00943
	(!D * RESET_B * !SCE * Q)	0.00798	0.00784	0.00764
	(!D * RESET_B * !SCE * Q)	0.01036	0.01021	0.00991
	(!D * RESET_B * !SCD * SCE * Q)	0.00798	0.00785	0.00760
	(!D * RESET_B * !SCD * SCE * Q)	0.01037	0.01023	0.00987
	(!D * !SCE * !Q)	0.00379	0.00364	0.00353
	(!D * !SCE * !Q)	0.00607	0.00591	0.00581
	(!D * !SCD * SCE * !Q)	0.00379	0.00364	0.00353
	(!D * !SCD * SCE * !Q)	0.00607	0.00592	0.00581
	(!D * !RESET_B * SCD * SCE * !Q)	0.00379	0.00364	0.00353
	(!D * !RESET_B * SCD * SCE * !Q)	0.00607	0.00592	0.00581

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00403	0.00387	0.00377
	(D * RESET_B * SCD * SCE * Q)	0.00631	0.00615	0.00604
	(D * RESET_B * SCD * SCE * !Q)	0.00748	0.00732	0.00716
	(D * RESET_B * SCD * SCE * !Q)	0.00966	0.00949	0.00933
	(D * RESET_B * SCD * !SCE * Q)	0.00403	0.00387	0.00377
	(D * RESET_B * SCD * !SCE * Q)	0.00631	0.00615	0.00604
	(D * RESET_B * SCD * !SCE * !Q)	0.00745	0.00728	0.00713
	(D * RESET_B * SCD * !SCE * !Q)	0.00963	0.00946	0.00930
	(D * RESET_B * !SCD * SCE * Q)	0.00776	0.00760	0.00742
	(D * RESET_B * !SCD * SCE * Q)	0.01016	0.00999	0.00974
	(D * RESET_B * !SCD * !SCE * Q)	0.00403	0.00387	0.00377
	(D * RESET_B * !SCD * !SCE * Q)	0.00631	0.00615	0.00604
	(D * RESET_B * !SCD * !SCE * !Q)	0.00745	0.00728	0.00713
	(D * RESET_B * !SCD * !SCE * !Q)	0.00963	0.00946	0.00930
	(D * !SCD * SCE * !Q)	0.00374	0.00359	0.00348
	(D * !SCD * SCE * !Q)	0.00602	0.00586	0.00575
	(D * !RESET_B * SCD * SCE * !Q)	0.00374	0.00359	0.00348
	(D * !RESET_B * SCD * SCE * !Q)	0.00602	0.00587	0.00576
	(D * !RESET_B * SCD * !SCE * !Q)	0.00374	0.00359	0.00348
	(D * !RESET_B * SCD * !SCE * !Q)	0.00602	0.00586	0.00576
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00374	0.00359	0.00348
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00602	0.00586	0.00576
	(!D * RESET_B * SCD * SCE * Q)	0.00403	0.00387	0.00377
	(!D * RESET_B * SCD * SCE * Q)	0.00631	0.00615	0.00604
	(!D * RESET_B * SCD * SCE * !Q)	0.00750	0.00734	0.00718
	(!D * RESET_B * SCD * SCE * !Q)	0.00967	0.00950	0.00934
	(!D * RESET_B * !SCE * Q)	0.00774	0.00759	0.00744
	(!D * RESET_B * !SCE * Q)	0.01013	0.00996	0.00972
	(!D * RESET_B * !SCD * SCE * Q)	0.00775	0.00762	0.00741
	(!D * RESET_B * !SCD * SCE * Q)	0.01014	0.01000	0.00968
	(!D * !SCE * !Q)	0.00374	0.00359	0.00348
	(!D * !SCE * !Q)	0.00602	0.00586	0.00575
	(!D * !SCD * SCE * !Q)	0.00374	0.00359	0.00348
	(!D * !SCD * SCE * !Q)	0.00602	0.00586	0.00575
	(!D * !RESET_B * SCD * SCE * !Q)	0.00374	0.00359	0.00348
	(!D * !RESET_B * SCD * SCE * !Q)	0.00602	0.00587	0.00576

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT	
D	SCD	SCE	SET_B	CLK	Q	Q_N
0	0	x	1	R	0	1
0	1	0	1	R	0	1
x	1	1	1	R	1	0
1	x	0	1	R	1	0
1	0	1	1	R	0	1
x	x	x	0	x	1	0
x	x	x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfsbp_1	47.95200
sky130_fd_sc_hs__sdfsbp_2	59.14080

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	SCD	SCE	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__sdfsbp_1	0.00171	0.00187	0.00363	0.00306	0.00272	0.18605	0.17739
sky130_fd_sc_hs__sdfsbp_2	0.00177	0.00181	0.00383	0.00328	0.00275	0.37715	0.37359

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.00058	0.00069
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.00070	0.00082

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RR)	1.64831	2.97377	11.03570
	SET_B->Q (FR)	1.73246	3.39134	15.09500
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	1.54720	2.69509	11.08550
	SET_B->Q (FR)	2.38025	3.79569	15.70580

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	1.00258	1.70149	4.59867
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	1.19531	1.90019	4.97165

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q_N (RR)	0.84488	2.25880	10.25220
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.89080	2.12632	10.50840

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q_N (RF)	1.28039	2.26182	5.26104
	SET_B->Q_N (FF)	1.35514	2.68583	9.29333
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	1.12881	2.03470	5.22068
	SET_B->Q_N (FF)	1.76580	3.16067	9.95203

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.18055	-0.34344	-1.52237
	setup	CLK (R)	0.43016	0.52421	1.74195
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.22489	-0.38546	-1.59033
	setup	CLK (R)	0.53877	0.62235	1.89073

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.24012	-0.47900	-3.93735
	setup	CLK (R)	2.30405	2.35281	5.38932
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.26748	-0.49486	-3.73262
	setup	CLK (R)	2.82193	2.86152	5.70943

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.18055	-0.34344	-1.52237
	setup	CLK (R)	0.43016	0.52421	1.74195
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.22489	-0.38546	-1.59033
	setup	CLK (R)	0.53877	0.62235	1.89073

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.24012	-0.47900	-3.93735
	setup	CLK (R)	2.30405	2.35281	5.38932
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.26748	-0.49486	-3.73262
	setup	CLK (R)	2.82193	2.86152	5.70943

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.20416	-0.35553	-1.67182
	setup	CLK (R)	0.46101	0.53830	1.85448
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.24813	-0.39381	-1.70725
	setup	CLK (R)	0.56385	0.63024	1.96631

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.34346	-0.64078	-4.86476
	setup	CLK (R)	2.61325	2.72666	6.10618
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.34722	-0.64320	-4.74036
	setup	CLK (R)	3.13039	3.24709	6.45296

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.20416	-0.35629	-1.67531
	hold	CLK (R)	-0.20419	-0.35553	-1.67182
	setup	CLK (R)	0.46101	0.53830	1.85448
	setup	CLK (R)	0.45871	0.53377	1.85113
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.24813	-0.39417	-1.71126
	hold	CLK (R)	-0.24831	-0.39381	-1.70725
	setup	CLK (R)	0.56385	0.63024	1.96631
	setup	CLK (R)	0.55891	0.62932	1.96248

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.36408	-0.66501	-4.94960
	hold	CLK (R)	-0.34346	-0.64078	-4.86476
	setup	CLK (R)	2.57967	2.69415	6.08659
	setup	CLK (R)	2.61325	2.72666	6.10618
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.37184	-0.66250	-4.81598
	hold	CLK (R)	-0.34722	-0.64320	-4.74036
	setup	CLK (R)	3.10729	3.21547	6.43844
	setup	CLK (R)	3.13039	3.24709	6.45296

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.18427	-0.35072	-1.04843
	setup	CLK (R)	2.51263	2.44016	2.08846
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.22958	-0.39423	-0.92062
	setup	CLK (R)	3.03188	2.96658	2.43168

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.29469	-0.58232	-4.42135
	setup	CLK (R)	2.34958	2.45849	5.81016
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.31633	-0.59672	-4.37931
	setup	CLK (R)	2.86895	2.97601	6.16864

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.28970	-0.42081	-1.04843
	hold	CLK (R)	-0.18427	-0.35072	-1.56360
	setup	CLK (R)	2.51263	2.44016	2.08846
	setup	CLK (R)	0.43601	0.53371	1.78140
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.28917	-0.41744	-0.92062
	hold	CLK (R)	-0.22958	-0.39423	-1.63097
	setup	CLK (R)	3.03188	2.96658	2.43168
	setup	CLK (R)	0.54160	0.63068	1.93796

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	hold	CLK (R)	-0.50918	-0.80714	-4.42135
	hold	CLK (R)	-0.29469	-0.58232	-4.64460
	setup	CLK (R)	0.76036	0.97986	4.52999
	setup	CLK (R)	2.34958	2.45849	5.81016
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.55018	-0.83623	-4.37931
	hold	CLK (R)	-0.31633	-0.59672	-4.53085
	setup	CLK (R)	0.86368	1.07348	4.54028
	setup	CLK (R)	2.86895	2.97601	6.16864

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	recovery	CLK (R)	-0.44708	-0.54562	-1.15426
	removal	CLK (R)	0.49852	0.58475	1.18736
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.58430	-0.70036	-1.48569
	removal	CLK (R)	0.62616	0.73376	1.52007

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	recovery	CLK (R)	-0.44912	-0.54564	-1.15745
	recovery	CLK (R)	-0.44708	-0.54562	-1.15758
	recovery	CLK (R)	-0.44989	-0.54660	-1.15426
	removal	CLK (R)	0.49617	0.58363	1.18736
	removal	CLK (R)	0.49617	0.58363	1.18736
	removal	CLK (R)	0.49852	0.58475	1.18467
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.58430	-0.70036	-1.48569
	recovery	CLK (R)	-0.58430	-0.70039	-1.48572
	recovery	CLK (R)	-0.58882	-0.70086	-1.48658
	removal	CLK (R)	0.62474	0.73118	1.51865
	removal	CLK (R)	0.62474	0.73118	1.51865
	removal	CLK (R)	0.62616	0.73376	1.52007

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	min_pulse_width	SET_B ()	1.26528	2.33765	16.50020
	min_pulse_width	SET_B ()	1.44604	2.57338	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	1.35848	2.36191	16.50020
	min_pulse_width	SET_B ()	2.04313	3.14190	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	min_pulse_width	CLK ()	1.17908	1.45020	16.50020
	min_pulse_width	CLK ()	0.37605	1.45020	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	1.07321	1.45020	16.50020
	min_pulse_width	CLK ()	0.46901	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfsbp_1	min_pulse_width	CLK ()	0.90690	1.66166	16.50020
	min_pulse_width	CLK ()	2.29338	2.41391	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	1.11937	1.81419	16.50020
	min_pulse_width	CLK ()	2.95183	3.06563	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00768	0.00766	0.00760
	CLK	0.00661	0.00659	0.00653
	SET_B	0.00692	0.00702	0.00698
	SET_B	0.00805	0.00815	0.00811
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01077	0.01081	0.01077
	CLK	0.00966	0.00970	0.00967
	SET_B	0.00958	0.00975	0.00967
	SET_B	0.01076	0.01093	0.01092

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00808	0.00805	0.00784
	CLK	0.00694	0.00692	0.00670
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01077	0.01084	0.01062
	CLK	0.00965	0.00972	0.00951

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00811	0.00808	0.00808
	CLK	0.00697	0.00694	0.00695
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01081	0.01088	0.01096
	CLK	0.00968	0.00976	0.00985

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00767	0.00764	0.00741
	CLK	0.00660	0.00657	0.00634
	SET_B	0.00690	0.00700	0.00677
	SET_B	0.00804	0.00813	0.00790
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01074	0.01079	0.01047
	CLK	0.00964	0.00968	0.00936
	SET_B	0.00956	0.00973	0.00938
	SET_B	0.01073	0.01090	0.01061

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00060	0.00060	0.00060
	(CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(CLK * !SCE)	0.00213	0.00207	0.00202
	(CLK * !SCE)	0.00059	0.00051	0.00047
	(CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(CLK * !SCD * SCE)	-0.00061	-0.00063	-0.00063
	(!CLK * SCD * SCE)	0.00060	0.00060	0.00060
	(!CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00561	0.00556	0.00547
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00387	0.00382	0.00373
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00441	0.00438	0.00432
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00262	0.00258	0.00253
	(!CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(!CLK * !SCD * SCE)	-0.00062	-0.00063	-0.00062

	(CLK * SCD * SCE)	0.00064	0.00065	0.00064
	(CLK * SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * !SCE)	0.00223	0.00217	0.00212
	(CLK * !SCE)	0.00065	0.00058	0.00053
	(CLK * !SCD * SCE)	0.00037	0.00037	0.00036
	(CLK * !SCD * SCE)	-0.00063	-0.00064	-0.00064
	(!CLK * SCD * SCE)	0.00064	0.00065	0.00064
	(!CLK * SCD * SCE)	-0.00035	-0.00036	-0.00035
sky130_fd_sc_hs__sdfsbp_2	**(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)**	0.00626	0.00622	0.00613
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00458	0.00453	0.00444
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00510	0.00506	0.00500
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00335	0.00331	0.00325
	(!CLK * !SCD * SCE)	0.00037	0.00037	0.00036
	(!CLK * !SCD * SCE)	-0.00063	-0.00064	-0.00063

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00059	-0.00060	-0.00060
	(CLK * SCD * SCE)	0.00038	0.00038	0.00037
	(CLK * !SCE)	0.00049	0.00043	0.00041
	(CLK * !SCE)	0.00204	0.00198	0.00196
	(CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(CLK * !SCD * SCE)	0.00063	0.00063	0.00063
	(!CLK * SCD * SCE)	-0.00059	-0.00059	-0.00060
	(!CLK * SCD * SCE)	0.00038	0.00038	0.00037
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00375	0.00367	0.00326
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00550	0.00542	0.00492
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00228	0.00220	0.00201
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00407	0.00400	0.00375
	(!CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(!CLK * !SCD * SCE)	0.00063	0.00063	0.00062

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00063	-0.00064	-0.00064
	(CLK * SCD * SCE)	0.00036	0.00036	0.00035
	(CLK * !SCE)	0.00059	0.00052	0.00050
	(CLK * !SCE)	0.00217	0.00211	0.00209
	(CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCD * SCE)	0.00064	0.00064	0.00064
	(!CLK * SCD * SCE)	-0.00063	-0.00064	-0.00064
	(!CLK * SCD * SCE)	0.00037	0.00036	0.00035
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00485	0.00478	0.00358
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00655	0.00647	0.00515
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00330	0.00321	0.00247
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00505	0.00498	0.00412
	(!CLK * !SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCD * SCE)	0.00064	0.00064	0.00063

Passive power(pJ) for SCD rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00282	0.00277	0.00271
	(CLK * D * SCE)	0.00076	0.00070	0.00065
	(CLK * !D * SCE)	0.00304	0.00299	0.00292
	(CLK * !D * SCE)	0.00097	0.00092	0.00085
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00622	0.00617	0.00609
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00397	0.00392	0.00384
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00502	0.00498	0.00493
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00272	0.00268	0.00262
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00644	0.00639	0.00629
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00418	0.00413	0.00404
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00524	0.00520	0.00513
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00292	0.00289	0.00282
	!SCE	0.00066	0.00066	0.00066
	!SCE	-0.00059	-0.00060	-0.00060

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00284	0.00279	0.00274
	(CLK * D * SCE)	0.00081	0.00076	0.00072
	(CLK * !D * SCE)	0.00306	0.00302	0.00294
	(CLK * !D * SCE)	0.00103	0.00098	0.00092
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00680	0.00676	0.00669
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00467	0.00463	0.00456
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00563	0.00561	0.00555
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00344	0.00341	0.00336
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00702	0.00698	0.00689
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00488	0.00484	0.00475
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00585	0.00582	0.00575
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00365	0.00362	0.00356
	!SCE	0.00061	0.00061	0.00061
	!SCE	-0.00060	-0.00061	-0.00060

Passive power(pJ) for SCD falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00089	0.00082	0.00078
	(CLK * D * SCE)	0.00295	0.00288	0.00283
	(CLK * !D * SCE)	0.00070	0.00064	0.00063
	(CLK * !D * SCE)	0.00278	0.00271	0.00269
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00421	0.00414	0.00304
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00646	0.00640	0.00517
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00274	0.00267	0.00212
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00504	0.00498	0.00431
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00403	0.00396	0.00287
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00629	0.00623	0.00496
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00256	0.00249	0.00195
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00487	0.00481	0.00412
	!SCE	-0.00065	-0.00066	-0.00066
	!SCE	0.00060	0.00060	0.00060

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00102	0.00096	0.00093
	(CLK * D * SCE)	0.00305	0.00299	0.00294
	(CLK * !D * SCE)	0.00083	0.00078	0.00077
	(CLK * !D * SCE)	0.00287	0.00281	0.00279
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00532	0.00527	0.00266
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00746	0.00740	0.00471
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00377	0.00371	0.00243
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00597	0.00591	0.00450
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00515	0.00509	0.00249
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00729	0.00724	0.00451
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00359	0.00353	0.00227
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00579	0.00574	0.00430
	!SCE	-0.00061	-0.00061	-0.00061
	!SCE	0.00061	0.00061	0.00060

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00260	0.00250	0.00244
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00019	-0.00030	-0.00036
	(CLK * D * !SCD)	0.00408	0.00394	0.00381
	(CLK * D * !SCD)	0.00203	0.00188	0.00173
	(CLK * !D * SCD)	0.00453	0.00437	0.00424
	(CLK * !D * SCD)	0.00112	0.00095	0.00084
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00260	0.00250	0.00244
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00019	-0.00030	-0.00035
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00723	0.00716	0.00705
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00538	0.00529	0.00516
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00576	0.00569	0.00557
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00396	0.00387	0.00374
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00801	0.00785	0.00769
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00441	0.00425	0.00410
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00681	0.00666	0.00654
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00316	0.00301	0.00289
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00259	0.00249	0.00243
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00007	-0.00018	-0.00023

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00273	0.00264	0.00256
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00016	-0.00028	-0.00033
	(CLK * D * !SCD)	0.00430	0.00416	0.00403
	(CLK * D * !SCD)	0.00215	0.00201	0.00186
	(CLK * !D * SCD)	0.00473	0.00455	0.00443
	(CLK * !D * SCD)	0.00120	0.00103	0.00091
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00274	0.00263	0.00257
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00016	-0.00028	-0.00033
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00845	0.00839	0.00827
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00641	0.00632	0.00619
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00689	0.00683	0.00671
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00492	0.00483	0.00470
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00875	0.00859	0.00843
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00512	0.00496	0.00481
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00758	0.00744	0.00731
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00390	0.00375	0.00363
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00268	0.00258	0.00252
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00009	-0.00020	-0.00026

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00008	-0.00016	-0.00018
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00270	0.00264	0.00261
	(CLK * D * !SCD)	0.00203	0.00194	0.00186
	(CLK * D * !SCD)	0.00410	0.00399	0.00392
	(CLK * !D * SCD)	0.00071	0.00058	0.00054
	(CLK * !D * SCD)	0.00411	0.00398	0.00395
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00008	-0.00016	-0.00018
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00270	0.00264	0.00261
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00548	0.00543	0.00536
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00736	0.00729	0.00722
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00428	0.00423	0.00416
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00611	0.00604	0.00598
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00398	0.00383	0.00313
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00757	0.00743	0.00660
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00250	0.00235	0.00198
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00615	0.00601	0.00554
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00005	-0.00002	-0.00005
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00272	0.00264	0.00261

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00018	-0.00026	-0.00029
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00272	0.00264	0.00261
	(CLK * D * !SCD)	0.00197	0.00189	0.00181
	(CLK * D * !SCD)	0.00415	0.00405	0.00397
	(CLK * !D * SCD)	0.00081	0.00066	0.00062
	(CLK * !D * SCD)	0.00432	0.00418	0.00414
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00018	-0.00026	-0.00029
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00272	0.00264	0.00261
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00596	0.00592	0.00585
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00804	0.00797	0.00790
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00480	0.00475	0.00469
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00681	0.00674	0.00669
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00508	0.00492	0.00279
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00870	0.00855	0.00632
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00352	0.00336	0.00230
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00720	0.00705	0.00586
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00000	-0.00008	-0.00011
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00277	0.00269	0.00266

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	(CLK * Q * !Q_N)	0.00129	0.00131	0.00129
	(CLK * Q * !Q_N)	-0.00107	-0.00108	-0.00107
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00138	0.00140	0.00138
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00098	-0.00099	-0.00098
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00247	0.00244	0.00242
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00002	-0.00001	-0.00003
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00132	0.00133	0.00132
	(CLK * Q * !Q_N)	-0.00112	-0.00113	-0.00112
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00137	0.00140	0.00138
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00105	-0.00107	-0.00105
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00262	0.00259	0.00257
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00009	0.00005	0.00004

Passive power(pJ) for SET_B falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	(CLK * Q * !Q_N)	-0.00128	-0.00130	-0.00129
	(CLK * Q * !Q_N)	0.00107	0.00109	0.00108
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00137	-0.00139	-0.00138
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00099	0.00100	0.00099
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00000	-0.00004	-0.00006
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00245	0.00241	0.00239
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00131	-0.00133	-0.00132
	(CLK * Q * !Q_N)	0.00112	0.00113	0.00112
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00137	-0.00139	-0.00138
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00106	0.00107	0.00106
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00011	-0.00016	-0.00018
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00241	0.00237	0.00235

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	(D * SCD * SCE * Q * !Q_N)	0.00745	0.00726	0.00713
	(D * SCD * SCE * Q * !Q_N)	0.00525	0.00506	0.00493
	(D * !SCE * Q * !Q_N)	0.00745	0.00726	0.00713
	(D * !SCE * Q * !Q_N)	0.00525	0.00506	0.00493
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00746	0.00726	0.00712
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00526	0.00506	0.00491
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01223	0.01207	0.01214
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00978	0.00963	0.00969
	(!D * SCD * SCE * Q * !Q_N)	0.00745	0.00726	0.00713
	(!D * SCD * SCE * Q * !Q_N)	0.00525	0.00506	0.00493
	(!D * !SCE * SET_B * !Q * Q_N)	0.00746	0.00726	0.00712
	(!D * !SCE * SET_B * !Q * Q_N)	0.00526	0.00506	0.00491
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01223	0.01207	0.01214
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00978	0.00963	0.00969
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00746	0.00726	0.00712
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00526	0.00506	0.00491
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01229	0.01210	0.01216
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00985	0.00966	0.00971

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00973	0.00950	0.00931
	(D * SCD * SCE * Q * !Q_N)	0.00750	0.00726	0.00708
	(D * !SCE * Q * !Q_N)	0.00973	0.00950	0.00931
	(D * !SCE * Q * !Q_N)	0.00750	0.00726	0.00708
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00967	0.00943	0.00925
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00744	0.00719	0.00702
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01835	0.01821	0.01836
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01595	0.01581	0.01596
	(!D * SCD * SCE * Q * !Q_N)	0.00973	0.00950	0.00931
	(!D * SCD * SCE * Q * !Q_N)	0.00750	0.00726	0.00708
	(!D * !SCE * SET_B * !Q * Q_N)	0.00967	0.00943	0.00925
	(!D * !SCE * SET_B * !Q * Q_N)	0.00744	0.00719	0.00702
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01835	0.01821	0.01837
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01595	0.01581	0.01596
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00967	0.00942	0.00925
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00744	0.00720	0.00702
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01842	0.01825	0.01836
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01602	0.01585	0.01596

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.00775	0.00759	0.00739
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.00977	0.00960	0.00941
	(D * SCD * SCE * Q * !Q_N)	0.00437	0.00423	0.00412
	(D * SCD * SCE * Q * !Q_N)	0.00659	0.00643	0.00633
	(D * !SCE * SET_B * !Q * Q_N)	0.00772	0.00756	0.00737
	(D * !SCE * SET_B * !Q * Q_N)	0.00975	0.00958	0.00939
	(D * !SCE * Q * !Q_N)	0.00437	0.00423	0.00412
	(D * !SCE * Q * !Q_N)	0.00659	0.00643	0.00633
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.00846	0.00832	0.00778
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01088	0.01072	0.01009
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00445	0.00430	0.00416
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00666	0.00650	0.00637
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00702	0.00687	0.00658
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00948	0.00932	0.00897
sky130_fd_sc_hs__sdfsbp_1	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.00777	0.00761	0.00742
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.00979	0.00962	0.00943
	(!D * SCD * SCE * Q * !Q_N)	0.00437	0.00423	0.00412
	(!D * SCD * SCE * Q * !Q_N)	0.00659	0.00643	0.00633
	(!D * !SCE * SET_B * Q * !Q_N)	0.00844	0.00830	0.00780
	(!D * !SCE * SET_B * Q * !Q_N)	0.01085	0.01069	0.01007
	(!D * !SCE * SET_B * !Q * Q_N)	0.00445	0.00430	0.00416
	(!D * !SCE * SET_B * !Q * Q_N)	0.00666	0.00650	0.00637
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00702	0.00686	0.00661
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00948	0.00931	0.00897
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.00845	0.00830	0.00776
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01086	0.01070	0.01002
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00445	0.00430	0.00416
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00666	0.00650	0.00637
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00702	0.00687	0.00658
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00948	0.00932	0.00892

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.00922	0.00906	0.00886
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01136	0.01120	0.01098
	(D * SCD * SCE * Q * !Q_N)	0.00522	0.00507	0.00495
	(D * SCD * SCE * Q * !Q_N)	0.00746	0.00731	0.00718
	(D * !SCE * SET_B * !Q * Q_N)	0.00920	0.00904	0.00884
	(D * !SCE * SET_B * !Q * Q_N)	0.01134	0.01118	0.01096
	(D * !SCE * Q * !Q_N)	0.00522	0.00507	0.00495
	(D * !SCE * Q * !Q_N)	0.00746	0.00731	0.00718
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01065	0.01050	0.00806
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01301	0.01285	0.01034
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00538	0.00523	0.00507
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00762	0.00747	0.00729
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00906	0.00891	0.00773
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01147	0.01132	0.01002
sky130_fd_sc_hs__sdfsbp_2	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.00925	0.00908	0.00888
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01137	0.01121	0.01099
	(!D * SCD * SCE * Q * !Q_N)	0.00522	0.00507	0.00495
	(!D * SCD * SCE * Q * !Q_N)	0.00746	0.00731	0.00718
	(!D * !SCE * SET_B * Q * !Q_N)	0.01064	0.01048	0.00810
	(!D * !SCE * SET_B * Q * !Q_N)	0.01298	0.01282	0.01035
	(!D * !SCE * SET_B * !Q * Q_N)	0.00538	0.00523	0.00507
	(!D * !SCE * SET_B * !Q * Q_N)	0.00762	0.00747	0.00729
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00907	0.00891	0.00778
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01148	0.01132	0.01004
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01065	0.01048	0.00802
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01300	0.01283	0.01025
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00538	0.00523	0.00507
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00762	0.00747	0.00729
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00908	0.00890	0.00772
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01149	0.01131	0.00996

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	SET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	1
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfstp_1	46.35360
sky130_fd_sc_hs__sdfstp_2	49.55040
sky130_fd_sc_hs__sdfstp_4	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	SET_B	CLK	Q
sky130_fd_sc_hs__sdfstp_1	0.00170	0.00188	0.00362	0.00297	0.00271	0.18221
sky130_fd_sc_hs__sdfstp_2	0.00170	0.00183	0.00361	0.00307	0.00271	0.37516
sky130_fd_sc_hs__sdfstp_4	0.00170	0.00188	0.00367	0.00303	0.00270	0.73383

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.00054	0.00066
sky130_fd_sc_hs__sdfstp_2	0.00000	0.00062	0.00075
sky130_fd_sc_hs__sdfstp_4	0.00000	0.00071	0.00083

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RR)	1.30362	2.67691	10.61030
	SET_B->Q (FR)	1.43738	3.14515	14.68560
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	1.01035	2.21759	10.54810
	SET_B->Q (FR)	1.66088	3.19250	15.11820
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	1.12174	2.18724	10.69010
	SET_B->Q (FR)	1.82438	3.21460	15.31660

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.98643	1.68444	4.56607
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	1.11296	1.81832	4.81783
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	1.11293	1.80262	4.85941

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.18719	-0.34964	-1.53737
	setup	CLK (R)	0.44004	0.52741	1.73151
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.21472	-0.37497	-1.58497
	setup	CLK (R)	0.55769	0.62867	1.88462
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.21424	-0.37866	-1.60619
	setup	CLK (R)	0.53320	0.61258	1.88652

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.20622	-0.44152	-3.70465
	setup	CLK (R)	2.23272	2.28317	5.33597
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18026	-0.40867	-3.40110
	setup	CLK (R)	2.63509	2.68297	5.61385
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.19921	-0.42802	-3.51929
	setup	CLK (R)	2.65405	2.70713	5.65212

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.18719	-0.34964	-1.53737
	setup	CLK (R)	0.44004	0.52741	1.73151
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.21472	-0.37497	-1.58497
	setup	CLK (R)	0.55769	0.62867	1.88462
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.21424	-0.37866	-1.60619
	setup	CLK (R)	0.53320	0.61258	1.88652

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.20622	-0.44152	-3.70465
	setup	CLK (R)	2.23272	2.28317	5.33597
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18026	-0.40867	-3.40110
	setup	CLK (R)	2.63509	2.68297	5.61385
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.19921	-0.42802	-3.51929
	setup	CLK (R)	2.65405	2.70713	5.65212

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.21106	-0.36193	-1.68922
	setup	CLK (R)	0.47464	0.54274	1.84904
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.23853	-0.38695	-1.72119
	setup	CLK (R)	0.59234	0.64764	1.97152
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.23807	-0.38890	-1.73393
	setup	CLK (R)	0.56332	0.62687	1.97229

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.30095	-0.59931	-4.74321
	setup	CLK (R)	2.54520	2.66194	6.06174
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.27057	-0.56353	-4.53183
	setup	CLK (R)	2.94649	3.06179	6.35251
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.29372	-0.58978	-4.62607
	setup	CLK (R)	2.96615	3.08669	6.38466

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.21106	-0.36317	-1.69556
	hold	CLK (R)	-0.21192	-0.36193	-1.68922
	setup	CLK (R)	0.47464	0.54274	1.84904
	setup	CLK (R)	0.47088	0.54086	1.84725
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.23853	-0.38784	-1.72436
	hold	CLK (R)	-0.23925	-0.38695	-1.72119
	setup	CLK (R)	0.59234	0.64764	1.97152
	setup	CLK (R)	0.58699	0.64161	1.96438
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.24013	-0.38968	-1.73830
	hold	CLK (R)	-0.23807	-0.38890	-1.73393
	setup	CLK (R)	0.56332	0.62687	1.97020
	setup	CLK (R)	0.56046	0.62368	1.97229

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.31644	-0.61362	-4.83821
	hold	CLK (R)	-0.30095	-0.59931	-4.74321
	setup	CLK (R)	2.51214	2.62571	6.03786
	setup	CLK (R)	2.54520	2.66194	6.06174
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.28547	-0.57880	-4.54250
	hold	CLK (R)	-0.27057	-0.56353	-4.53183
	setup	CLK (R)	2.91266	3.03311	6.33834
	setup	CLK (R)	2.94649	3.06179	6.35251
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.30598	-0.60102	-4.66677
	hold	CLK (R)	-0.29372	-0.58978	-4.62607
	setup	CLK (R)	2.93267	3.05552	6.37021
	setup	CLK (R)	2.96615	3.08669	6.38466

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.19158	-0.35693	-1.00175
	setup	CLK (R)	2.44324	2.37459	2.06064
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.21151	-0.34066	-0.88046
	setup	CLK (R)	2.84599	2.78496	2.33610
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.21998	-0.36905	-0.93488
	setup	CLK (R)	2.86001	2.80354	2.34989

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.25658	-0.54175	-4.44430
	setup	CLK (R)	2.28068	2.38907	5.76135
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.23257	-0.50828	-4.33680
	setup	CLK (R)	2.67718	2.79129	6.05644
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.25246	-0.53527	-4.41116
	setup	CLK (R)	2.70016	2.81680	6.09343

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.24317	-0.38191	-1.00175
	hold	CLK (R)	-0.19158	-0.35693	-1.58029
	setup	CLK (R)	2.44324	2.37459	2.06064
	setup	CLK (R)	0.44797	0.53726	1.77640
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.21151	-0.34066	-0.88046
	hold	CLK (R)	-0.22066	-0.38290	-1.62668
	setup	CLK (R)	2.84599	2.78496	2.33610
	setup	CLK (R)	0.56747	0.64123	1.92656
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.23185	-0.36905	-0.93488
	hold	CLK (R)	-0.21998	-0.38613	-1.64432
	setup	CLK (R)	2.86001	2.80354	2.34989
	setup	CLK (R)	0.53757	0.62157	1.92906

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	hold	CLK (R)	-0.51405	-0.81504	-4.44430
	hold	CLK (R)	-0.25658	-0.54175	-4.52560
	setup	CLK (R)	0.77350	0.98624	4.54142
	setup	CLK (R)	2.28068	2.38907	5.76135
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.54758	-0.83551	-4.43284
	hold	CLK (R)	-0.23257	-0.50828	-4.33680
	setup	CLK (R)	0.89043	1.08624	4.58037
	setup	CLK (R)	2.67718	2.79129	6.05644
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.54381	-0.83950	-4.43855
	hold	CLK (R)	-0.25246	-0.53527	-4.41116
	setup	CLK (R)	0.86429	1.06873	4.58193
	setup	CLK (R)	2.70016	2.81680	6.09343

Constraints(ns) for SET_B rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	recovery	CLK (R)	-0.46006	-0.56544	-1.20263
	removal	CLK (R)	0.50128	0.59525	1.23130
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.58962	-0.68326	-1.36693
	removal	CLK (R)	0.61678	0.70423	1.42467
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.56731	-0.66995	-1.37236
	removal	CLK (R)	0.59752	0.69283	1.41648

Constraints(ns) for SET_B rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	recovery	CLK (R)	-0.46006	-0.56546	-1.20315
	recovery	CLK (R)	-0.46007	-0.56544	-1.20317
	recovery	CLK (R)	-0.46069	-0.56576	-1.20263
	removal	CLK (R)	0.50128	0.59525	1.23038
	removal	CLK (R)	0.50128	0.59525	1.23038
	removal	CLK (R)	0.50003	0.59525	1.23130
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.59109	-0.68326	-1.36693
	recovery	CLK (R)	-0.59103	-0.68326	-1.36693
	recovery	CLK (R)	-0.58962	-0.68726	-1.36964
	removal	CLK (R)	0.61678	0.70423	1.42467
	removal	CLK (R)	0.61678	0.70423	1.42467
	removal	CLK (R)	0.61598	0.70423	1.42381
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.56869	-0.66996	-1.37394
	recovery	CLK (R)	-0.56731	-0.66995	-1.37393
	recovery	CLK (R)	-0.57157	-0.67341	-1.37236
	removal	CLK (R)	0.59451	0.69043	1.41648
	removal	CLK (R)	0.59752	0.69043	1.41648
	removal	CLK (R)	0.59511	0.69283	1.41321

Constraints(ns) for SET_B falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	min_pulse_width	SET_B ()	1.09619	2.16778	16.50020
	min_pulse_width	SET_B ()	1.16507	2.29951	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	1.09192	2.10192	16.50020
	min_pulse_width	SET_B ()	1.38620	2.50058	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	1.11547	2.12618	16.50020
	min_pulse_width	SET_B ()	1.48410	2.59418	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	min_pulse_width	CLK ()	0.85890	1.45020	16.50020
	min_pulse_width	CLK ()	0.36573	1.45020	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.61877	1.45020	16.50020
	min_pulse_width	CLK ()	0.43544	1.45020	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.69365	1.45020	16.50020
	min_pulse_width	CLK ()	0.42769	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfstp_1	min_pulse_width	CLK ()	0.90812	1.65819	16.50020
	min_pulse_width	CLK ()	2.24301	2.37231	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	1.09647	1.74832	16.50020
	min_pulse_width	CLK ()	2.73060	2.85764	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	1.05881	1.73792	16.50020
	min_pulse_width	CLK ()	2.69254	2.82644	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.01371	0.01355	0.01340
	CLK	0.01163	0.01147	0.01135
	SET_B	0.01191	0.01202	0.01189
	SET_B	0.01416	0.01425	0.01411
sky130_fd_sc_hs__sdfstp_2	CLK	0.01694	0.01683	0.01672
	CLK	0.01487	0.01477	0.01467
	SET_B	0.01538	0.01561	0.01552
	SET_B	0.01766	0.01788	0.01779
sky130_fd_sc_hs__sdfstp_4	CLK	0.02011	0.02016	0.02026
	CLK	0.01809	0.01814	0.01832
	SET_B	0.01861	0.01897	0.01906
	SET_B	0.02091	0.02128	0.02138

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.01472	0.01459	0.01449
	CLK	0.01245	0.01232	0.01222
sky130_fd_sc_hs__sdfstp_2	CLK	0.01801	0.01799	0.01792
	CLK	0.01578	0.01577	0.01569
sky130_fd_sc_hs__sdfstp_4	CLK	0.02150	0.02171	0.02168
	CLK	0.01921	0.01944	0.01939

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00059	0.00060	0.00059
	(CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(CLK * !SCE)	0.00216	0.00209	0.00205
	(CLK * !SCE)	0.00062	0.00055	0.00051
	(CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(!CLK * SCD * SCE)	0.00059	0.00060	0.00059
	(!CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * !SCE * SET_B)	0.00543	0.00538	0.00530
	(!CLK * !SCE * SET_B)	0.00374	0.00369	0.00360
	(!CLK * !SCE * !SET_B * Q)	0.00430	0.00427	0.00421
	(!CLK * !SCE * !SET_B * Q)	0.00257	0.00253	0.00247
	(!CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00059	0.00060	0.00059
	(CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(CLK * !SCE)	0.00213	0.00207	0.00202
	(CLK * !SCE)	0.00060	0.00053	0.00048
	(CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(!CLK * SCD * SCE)	0.00059	0.00060	0.00059
	(!CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * !SCE * SET_B)	0.00618	0.00613	0.00604
	(!CLK * !SCE * SET_B)	0.00441	0.00436	0.00428
	(!CLK * !SCE * !SET_B * Q)	0.00498	0.00495	0.00489
	(!CLK * !SCE * !SET_B * Q)	0.00316	0.00313	0.00308
	(!CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00059	0.00060	0.00059
	(CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(CLK * !SCE)	0.00221	0.00215	0.00210
	(CLK * !SCE)	0.00068	0.00061	0.00056
	(CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(!CLK * SCD * SCE)	0.00059	0.00060	0.00059
	(!CLK * SCD * SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * !SCE * SET_B)	0.00612	0.00608	0.00599
	(!CLK * !SCE * SET_B)	0.00440	0.00436	0.00427
	(!CLK * !SCE * !SET_B * Q)	0.00494	0.00491	0.00485
	(!CLK * !SCE * !SET_B * Q)	0.00318	0.00315	0.00309
	(!CLK * !SCD * SCE)	0.00035	0.00035	0.00034
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00061

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00058	-0.00059	-0.00059
	(CLK * SCD * SCE)	0.00038	0.00038	0.00036
	(CLK * !SCE)	0.00042	0.00036	0.00035
	(CLK * !SCE)	0.00196	0.00190	0.00189
	(CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(CLK * !SCD * SCE)	0.00062	0.00062	0.00062
	(!CLK * SCD * SCE)	-0.00058	-0.00059	-0.00059
	(!CLK * SCD * SCE)	0.00038	0.00038	0.00036
	(!CLK * !SCE * SET_B)	0.00371	0.00363	0.00324
	(!CLK * !SCE * SET_B)	0.00541	0.00533	0.00486
	(!CLK * !SCE * !SET_B * Q)	0.00234	0.00226	0.00207
	(!CLK * !SCE * !SET_B * Q)	0.00408	0.00401	0.00376
	(!CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(!CLK * !SCD * SCE)	0.00063	0.00062	0.00062
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00058	-0.00059	-0.00059
	(CLK * SCD * SCE)	0.00038	0.00038	0.00037
	(CLK * !SCE)	0.00045	0.00039	0.00037
	(CLK * !SCE)	0.00199	0.00193	0.00191
	(CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(CLK * !SCD * SCE)	0.00063	0.00062	0.00062
	(!CLK * SCD * SCE)	-0.00058	-0.00059	-0.00059
	(!CLK * SCD * SCE)	0.00037	0.00038	0.00037
	(!CLK * !SCE * SET_B)	0.00430	0.00422	0.00331
	(!CLK * !SCE * SET_B)	0.00607	0.00600	0.00494
	(!CLK * !SCE * !SET_B * Q)	0.00286	0.00278	0.00223
	(!CLK * !SCE * !SET_B * Q)	0.00467	0.00460	0.00393
	(!CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(!CLK * !SCD * SCE)	0.00063	0.00062	0.00062

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00058	-0.00059	-0.00059
	(CLK * SCD * SCE)	0.00037	0.00037	0.00037
	(CLK * !SCE)	0.00053	0.00047	0.00045
	(CLK * !SCE)	0.00207	0.00201	0.00199
	(CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(CLK * !SCD * SCE)	0.00062	0.00062	0.00062
	(!CLK * SCD * SCE)	-0.00058	-0.00059	-0.00059
	(!CLK * SCD * SCE)	0.00038	0.00037	0.00037
	(!CLK * !SCE * SET_B)	0.00436	0.00429	0.00337
	(!CLK * !SCE * SET_B)	0.00608	0.00601	0.00497
	(!CLK * !SCE * !SET_B * Q)	0.00294	0.00287	0.00231
	(!CLK * !SCE * !SET_B * Q)	0.00471	0.00464	0.00397
	(!CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00034
	(!CLK * !SCD * SCE)	0.00062	0.00062	0.00061

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00284	0.00279	0.00273
	(CLK * D * SCE)	0.00078	0.00072	0.00067
	(CLK * !D * SCE)	0.00306	0.00301	0.00294
	(CLK * !D * SCE)	0.00099	0.00094	0.00087
	(!CLK * D * SCE * SET_B)	0.00603	0.00598	0.00591
	(!CLK * D * SCE * SET_B)	0.00382	0.00377	0.00370
	(!CLK * D * SCE * !SET_B * Q)	0.00491	0.00487	0.00482
	(!CLK * D * SCE * !SET_B * Q)	0.00265	0.00261	0.00256
	(!CLK * !D * SCE * SET_B)	0.00626	0.00621	0.00611
	(!CLK * !D * SCE * SET_B)	0.00403	0.00399	0.00390
	(!CLK * !D * SCE * !SET_B * Q)	0.00513	0.00510	0.00502
	(!CLK * !D * SCE * !SET_B * Q)	0.00286	0.00283	0.00276
	!SCE	0.00065	0.00066	0.00065
	!SCE	-0.00060	-0.00061	-0.00060
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00280	0.00274	0.00269
	(CLK * D * SCE)	0.00076	0.00070	0.00065
	(CLK * !D * SCE)	0.00302	0.00297	0.00289
	(CLK * !D * SCE)	0.00097	0.00092	0.00085
	(!CLK * D * SCE * SET_B)	0.00676	0.00672	0.00664
	(!CLK * D * SCE * SET_B)	0.00450	0.00445	0.00438
	(!CLK * D * SCE * !SET_B * Q)	0.00557	0.00553	0.00548
	(!CLK * D * SCE * !SET_B * Q)	0.00326	0.00322	0.00317
	(!CLK * !D * SCE * SET_B)	0.00698	0.00694	0.00684
	(!CLK * !D * SCE * SET_B)	0.00471	0.00467	0.00457
	(!CLK * !D * SCE * !SET_B * Q)	0.00579	0.00575	0.00568
	(!CLK * !D * SCE * !SET_B * Q)	0.00347	0.00343	0.00337
	!SCE	0.00063	0.00064	0.00063
	!SCE	-0.00060	-0.00060	-0.00060

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00290	0.00284	0.00279
	(CLK * D * SCE)	0.00083	0.00078	0.00073
	(CLK * !D * SCE)	0.00312	0.00307	0.00299
	(CLK * !D * SCE)	0.00104	0.00100	0.00093
	(!CLK * D * SCE * SET_B)	0.00673	0.00668	0.00660
	(!CLK * D * SCE * SET_B)	0.00448	0.00444	0.00436
	(!CLK * D * SCE * !SET_B * Q)	0.00555	0.00551	0.00545
	(!CLK * D * SCE * !SET_B * Q)	0.00326	0.00323	0.00317
	(!CLK * !D * SCE * SET_B)	0.00695	0.00690	0.00680
	(!CLK * !D * SCE * SET_B)	0.00469	0.00465	0.00456
	(!CLK * !D * SCE * !SET_B * Q)	0.00577	0.00573	0.00566
	(!CLK * !D * SCE * !SET_B * Q)	0.00347	0.00344	0.00337
	!SCE	0.00065	0.00065	0.00065
	!SCE	-0.00060	-0.00061	-0.00061

Passive power(pJ) for SCD falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00083	0.00076	0.00073
	(CLK * D * SCE)	0.00289	0.00282	0.00277
	(CLK * !D * SCE)	0.00064	0.00058	0.00057
	(CLK * !D * SCE)	0.00272	0.00265	0.00263
	(!CLK * D * SCE * SET_B)	0.00417	0.00410	0.00309
	(!CLK * D * SCE * SET_B)	0.00639	0.00632	0.00519
	(!CLK * D * SCE * !SET_B * Q)	0.00280	0.00273	0.00217
	(!CLK * D * SCE * !SET_B * Q)	0.00506	0.00500	0.00433
	(!CLK * !D * SCE * SET_B)	0.00399	0.00392	0.00291
	(!CLK * !D * SCE * SET_B)	0.00621	0.00615	0.00498
	(!CLK * !D * SCE * !SET_B * Q)	0.00262	0.00255	0.00201
	(!CLK * !D * SCE * !SET_B * Q)	0.00489	0.00483	0.00414
	!SCE	-0.00065	-0.00065	-0.00065
	!SCE	0.00061	0.00061	0.00060
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00089	0.00082	0.00079
	(CLK * D * SCE)	0.00293	0.00286	0.00281
	(CLK * !D * SCE)	0.00070	0.00064	0.00063
	(CLK * !D * SCE)	0.00275	0.00269	0.00267
	(!CLK * D * SCE * SET_B)	0.00479	0.00472	0.00256
	(!CLK * D * SCE * SET_B)	0.00706	0.00699	0.00470
	(!CLK * D * SCE * !SET_B * Q)	0.00335	0.00328	0.00222
	(!CLK * D * SCE * !SET_B * Q)	0.00566	0.00560	0.00438
	(!CLK * !D * SCE * SET_B)	0.00461	0.00455	0.00240
	(!CLK * !D * SCE * SET_B)	0.00689	0.00683	0.00450
	(!CLK * !D * SCE * !SET_B * Q)	0.00317	0.00311	0.00206
	(!CLK * !D * SCE * !SET_B * Q)	0.00549	0.00543	0.00418
	!SCE	-0.00063	-0.00064	-0.00063
	!SCE	0.00061	0.00061	0.00060

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00093	0.00086	0.00083
	(CLK * D * SCE)	0.00300	0.00293	0.00288
	(CLK * !D * SCE)	0.00075	0.00069	0.00067
	(CLK * !D * SCE)	0.00282	0.00276	0.00273
	(!CLK * D * SCE * SET_B)	0.00482	0.00475	0.00260
	(!CLK * D * SCE * SET_B)	0.00707	0.00700	0.00473
	(!CLK * D * SCE * !SET_B * Q)	0.00341	0.00334	0.00228
	(!CLK * D * SCE * !SET_B * Q)	0.00570	0.00563	0.00443
	(!CLK * !D * SCE * SET_B)	0.00464	0.00458	0.00243
	(!CLK * !D * SCE * SET_B)	0.00690	0.00683	0.00453
	(!CLK * !D * SCE * !SET_B * Q)	0.00323	0.00316	0.00212
	(!CLK * !D * SCE * !SET_B * Q)	0.00553	0.00546	0.00423
	!SCE	-0.00065	-0.00065	-0.00065
	!SCE	0.00061	0.00061	0.00061

Passive power(pJ) for SCE rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00260	0.00251	0.00245
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00017	-0.00028	-0.00034
	(CLK * D * !SCD)	0.00402	0.00388	0.00375
	(CLK * D * !SCD)	0.00198	0.00183	0.00169
	(CLK * !D * SCD)	0.00456	0.00440	0.00427
	(CLK * !D * SCD)	0.00116	0.00099	0.00089
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00260	0.00250	0.00245
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00017	-0.00028	-0.00034
sky130_fd_sc_hs__sdfstp_1	**(!CLK * D * !SCD * SET_B)**	0.00721	0.00714	0.00702
	(!CLK * D * !SCD * SET_B)	0.00532	0.00523	0.00511
	(!CLK * D * !SCD * !SET_B * Q)	0.00583	0.00576	0.00564
	(!CLK * D * !SCD * !SET_B * Q)	0.00400	0.00391	0.00378
	(!CLK * !D * SCD * SET_B)	0.00783	0.00767	0.00751
	(!CLK * !D * SCD * SET_B)	0.00428	0.00412	0.00397
	(!CLK * !D * SCD * !SET_B * Q)	0.00670	0.00656	0.00643
	(!CLK * !D * SCD * !SET_B * Q)	0.00311	0.00296	0.00285
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00260	0.00250	0.00244
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00005	-0.00016	-0.00021

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00261	0.00251	0.00245
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00018	-0.00028	-0.00034
	(CLK * D * !SCD)	0.00407	0.00394	0.00381
	(CLK * D * !SCD)	0.00202	0.00188	0.00173
	(CLK * !D * SCD)	0.00454	0.00438	0.00425
	(CLK * !D * SCD)	0.00114	0.00097	0.00086
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00261	0.00252	0.00245
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00017	-0.00029	-0.00034
sky130_fd_sc_hs__sdfstp_2	**(!CLK * D * !SCD * SET_B)**	0.00780	0.00775	0.00763
	(!CLK * D * !SCD * SET_B)	0.00599	0.00590	0.00579
	(!CLK * D * !SCD * !SET_B * Q)	0.00637	0.00631	0.00619
	(!CLK * D * !SCD * !SET_B * Q)	0.00460	0.00451	0.00439
	(!CLK * !D * SCD * SET_B)	0.00858	0.00842	0.00827
	(!CLK * !D * SCD * SET_B)	0.00495	0.00479	0.00465
	(!CLK * !D * SCD * !SET_B * Q)	0.00738	0.00724	0.00711
	(!CLK * !D * SCD * !SET_B * Q)	0.00370	0.00356	0.00345
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00261	0.00251	0.00245
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00005	-0.00015	-0.00021

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00264	0.00253	0.00248
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00018	-0.00029	-0.00035
	(CLK * D * !SCD)	0.00416	0.00402	0.00388
	(CLK * D * !SCD)	0.00208	0.00193	0.00179
	(CLK * !D * SCD)	0.00464	0.00448	0.00436
	(CLK * !D * SCD)	0.00121	0.00105	0.00093
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00264	0.00254	0.00248
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00018	-0.00030	-0.00035
sky130_fd_sc_hs__sdfstp_4	**(!CLK * D * !SCD * SET_B)**	0.00788	0.00781	0.00770
	(!CLK * D * !SCD * SET_B)	0.00598	0.00590	0.00578
	(!CLK * D * !SCD * !SET_B * Q)	0.00646	0.00639	0.00627
	(!CLK * D * !SCD * !SET_B * Q)	0.00462	0.00453	0.00441
	(!CLK * !D * SCD * SET_B)	0.00855	0.00839	0.00823
	(!CLK * !D * SCD * SET_B)	0.00493	0.00478	0.00464
	(!CLK * !D * SCD * !SET_B * Q)	0.00738	0.00723	0.00710
	(!CLK * !D * SCD * !SET_B * Q)	0.00371	0.00357	0.00345
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00263	0.00253	0.00247
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00005	-0.00016	-0.00022

Passive power(pJ) for SCE falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00008	-0.00014	-0.00017
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00272	0.00264	0.00261
	(CLK * D * !SCD)	0.00207	0.00198	0.00190
	(CLK * D * !SCD)	0.00411	0.00403	0.00395
	(CLK * !D * SCD)	0.00065	0.00051	0.00048
	(CLK * !D * SCD)	0.00404	0.00391	0.00387
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00007	-0.00014	-0.00017
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00272	0.00264	0.00261
	(!CLK * D * !SCD * SET_B)	0.00530	0.00526	0.00518
	(!CLK * D * !SCD * SET_B)	0.00722	0.00715	0.00709
	(!CLK * D * !SCD * !SET_B * Q)	0.00418	0.00413	0.00407
	(!CLK * D * !SCD * !SET_B * Q)	0.00605	0.00598	0.00592
	(!CLK * !D * SCD * SET_B)	0.00394	0.00379	0.00312
	(!CLK * !D * SCD * SET_B)	0.00748	0.00734	0.00655
	(!CLK * !D * SCD * !SET_B * Q)	0.00257	0.00241	0.00205
	(!CLK * !D * SCD * !SET_B * Q)	0.00615	0.00601	0.00555
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00006	-0.00002	-0.00005
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00271	0.00264	0.00261

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00008	-0.00015	-0.00017
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00272	0.00264	0.00261
	(CLK * D * !SCD)	0.00204	0.00195	0.00186
	(CLK * D * !SCD)	0.00409	0.00400	0.00393
	(CLK * !D * SCD)	0.00068	0.00054	0.00050
	(CLK * !D * SCD)	0.00406	0.00394	0.00390
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00008	-0.00015	-0.00017
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00272	0.00264	0.00261
	(!CLK * D * !SCD * SET_B)	0.00605	0.00599	0.00592
	(!CLK * D * !SCD * SET_B)	0.00787	0.00782	0.00776
	(!CLK * D * !SCD * !SET_B * Q)	0.00486	0.00480	0.00474
	(!CLK * D * !SCD * !SET_B * Q)	0.00663	0.00658	0.00653
	(!CLK * !D * SCD * SET_B)	0.00453	0.00438	0.00281
	(!CLK * !D * SCD * SET_B)	0.00815	0.00801	0.00629
	(!CLK * !D * SCD * !SET_B * Q)	0.00309	0.00294	0.00210
	(!CLK * !D * SCD * !SET_B * Q)	0.00675	0.00661	0.00562
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00005	-0.00003	-0.00005
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00271	0.00264	0.00260

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00010	-0.00017	-0.00020
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00273	0.00265	0.00261
	(CLK * D * !SCD)	0.00210	0.00201	0.00193
	(CLK * D * !SCD)	0.00418	0.00409	0.00401
	(CLK * !D * SCD)	0.00074	0.00059	0.00055
	(CLK * !D * SCD)	0.00416	0.00403	0.00399
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00010	-0.00017	-0.00020
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00273	0.00264	0.00262
	(!CLK * D * !SCD * SET_B)	0.00597	0.00592	0.00585
	(!CLK * D * !SCD * SET_B)	0.00787	0.00782	0.00775
	(!CLK * D * !SCD * !SET_B * Q)	0.00480	0.00474	0.00468
	(!CLK * D * !SCD * !SET_B * Q)	0.00665	0.00659	0.00655
	(!CLK * !D * SCD * SET_B)	0.00457	0.00442	0.00283
	(!CLK * !D * SCD * SET_B)	0.00817	0.00803	0.00631
	(!CLK * !D * SCD * !SET_B * Q)	0.00315	0.00300	0.00216
	(!CLK * !D * SCD * !SET_B * Q)	0.00680	0.00666	0.00567
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00003	-0.00005	-0.00008
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00272	0.00264	0.00261

Passive power(pJ) for SET_B rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00119	0.00118	0.00119
	(CLK * Q)	-0.00108	-0.00108	-0.00108
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00130	0.00130	0.00130
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00097	-0.00097	-0.00097
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00235	0.00233	0.00231
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00000	-0.00003	-0.00004
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00133	0.00135	0.00133
	(CLK * Q)	-0.00105	-0.00106	-0.00105
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00146	0.00148	0.00146
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00092	-0.00093	-0.00092
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00249	0.00246	0.00244
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00002	-0.00001	-0.00001

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00123	0.00124	0.00123
	(CLK * Q)	-0.00111	-0.00112	-0.00111
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00135	0.00137	0.00136
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00098	-0.00099	-0.00098
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00241	0.00238	0.00237
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00001	-0.00004	-0.00005

Passive power(pJ) for SET_B falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00118	-0.00118	-0.00119
	(CLK * Q)	0.00109	0.00109	0.00109
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00129	-0.00130	-0.00130
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00097	0.00098	0.00097
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00002	-0.00006	-0.00008
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00232	0.00229	0.00227

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00132	-0.00134	-0.00133
	(CLK * Q)	0.00105	0.00106	0.00105
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00145	-0.00147	-0.00146
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00092	0.00093	0.00092
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00006	-0.00010	-0.00012
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00240	0.00236	0.00235
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00122	-0.00123	-0.00123
	(CLK * Q)	0.00111	0.00112	0.00111
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00135	-0.00136	-0.00136
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00098	0.00099	0.00098
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00001	-0.00005	-0.00007
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00240	0.00236	0.00235

Passive power(pJ) for CLK rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(D * SCD * SCE * Q)**	0.00750	0.00732	0.00719
	(D * SCD * SCE * Q)	0.00534	0.00515	0.00502
	(D * !SCE * Q)	0.00750	0.00732	0.00719
	(D * !SCE * Q)	0.00534	0.00515	0.00502
	(D * !SCD * SCE * SET_B * !Q)	0.00744	0.00726	0.00711
	(D * !SCD * SCE * SET_B * !Q)	0.00528	0.00509	0.00494
	(D * !SCD * SCE * !SET_B * Q)	0.01220	0.01207	0.01214
	(D * !SCD * SCE * !SET_B * Q)	0.00983	0.00971	0.00978
	(!D * SCD * SCE * Q)	0.00750	0.00732	0.00719
	(!D * SCD * SCE * Q)	0.00534	0.00515	0.00502
	(!D * !SCE * SET_B * !Q)	0.00744	0.00726	0.00711
	(!D * !SCE * SET_B * !Q)	0.00528	0.00509	0.00494
	(!D * !SCE * !SET_B * Q)	0.01220	0.01207	0.01210
	(!D * !SCE * !SET_B * Q)	0.00983	0.00971	0.00973
	(!D * !SCD * SCE * SET_B * !Q)	0.00744	0.00726	0.00711
	(!D * !SCD * SCE * SET_B * !Q)	0.00528	0.00509	0.00494
	(!D * !SCD * SCE * !SET_B * Q)	0.01225	0.01207	0.01214
	(!D * !SCD * SCE * !SET_B * Q)	0.00989	0.00972	0.00978

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.00861	0.00839	0.00824
	(D * SCD * SCE * Q)	0.00646	0.00625	0.00610
	(D * !SCE * Q)	0.00861	0.00839	0.00824
	(D * !SCE * Q)	0.00645	0.00625	0.00610
	(D * !SCD * SCE * SET_B * !Q)	0.00885	0.00863	0.00846
	(D * !SCD * SCE * SET_B * !Q)	0.00668	0.00647	0.00630
	(D * !SCD * SCE * !SET_B * Q)	0.01659	0.01644	0.01654
	(D * !SCD * SCE * !SET_B * Q)	0.01419	0.01404	0.01414
	(!D * SCD * SCE * Q)	0.00861	0.00839	0.00824
	(!D * SCD * SCE * Q)	0.00646	0.00625	0.00610
	(!D * !SCE * SET_B * !Q)	0.00885	0.00863	0.00846
	(!D * !SCE * SET_B * !Q)	0.00668	0.00647	0.00630
	(!D * !SCE * !SET_B * Q)	0.01659	0.01644	0.01656
	(!D * !SCE * !SET_B * Q)	0.01419	0.01404	0.01416
	(!D * !SCD * SCE * SET_B * !Q)	0.00885	0.00863	0.00846
	(!D * !SCD * SCE * SET_B * !Q)	0.00668	0.00647	0.00630
	(!D * !SCD * SCE * !SET_B * Q)	0.01665	0.01649	0.01656
	(!D * !SCD * SCE * !SET_B * Q)	0.01425	0.01409	0.01416

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.00850	0.00829	0.00814
	(D * SCD * SCE * Q)	0.00634	0.00614	0.00599
	(D * !SCE * Q)	0.00850	0.00829	0.00814
	(D * !SCE * Q)	0.00634	0.00614	0.00599
	(D * !SCD * SCE * SET_B * !Q)	0.00877	0.00856	0.00839
	(D * !SCD * SCE * SET_B * !Q)	0.00661	0.00640	0.00623
	(D * !SCD * SCE * !SET_B * Q)	0.01614	0.01605	0.01611
	(D * !SCD * SCE * !SET_B * Q)	0.01378	0.01370	0.01375
	(!D * SCD * SCE * Q)	0.00850	0.00829	0.00814
	(!D * SCD * SCE * Q)	0.00634	0.00614	0.00599
	(!D * !SCE * SET_B * !Q)	0.00877	0.00856	0.00839
	(!D * !SCE * SET_B * !Q)	0.00661	0.00640	0.00623
	(!D * !SCE * !SET_B * Q)	0.01614	0.01605	0.01611
	(!D * !SCE * !SET_B * Q)	0.01378	0.01370	0.01375
	(!D * !SCD * SCE * SET_B * !Q)	0.00877	0.00856	0.00840
	(!D * !SCD * SCE * SET_B * !Q)	0.00661	0.00640	0.00624
	(!D * !SCD * SCE * !SET_B * Q)	0.01622	0.01609	0.01616
	(!D * !SCD * SCE * !SET_B * Q)	0.01385	0.01374	0.01380

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfstp_1	**(D * SCD * SCE * SET_B * !Q)**	0.00756	0.00740	0.00721
	(D * SCD * SCE * SET_B * !Q)	0.00959	0.00942	0.00923
	(D * SCD * SCE * Q)	0.00435	0.00420	0.00410
	(D * SCD * SCE * Q)	0.00652	0.00637	0.00626
	(D * !SCE * SET_B * !Q)	0.00754	0.00738	0.00719
	(D * !SCE * SET_B * !Q)	0.00957	0.00940	0.00921
	(D * !SCE * Q)	0.00435	0.00421	0.00410
	(D * !SCE * Q)	0.00652	0.00637	0.00626
	(D * !SCD * SCE * SET_B * Q)	0.00851	0.00836	0.00782
	(D * !SCD * SCE * SET_B * Q)	0.01085	0.01069	0.01007
	(D * !SCD * SCE * SET_B * !Q)	0.00449	0.00434	0.00420
	(D * !SCD * SCE * SET_B * !Q)	0.00666	0.00650	0.00637
	(D * !SCD * SCE * !SET_B * Q)	0.00715	0.00700	0.00671
	(D * !SCD * SCE * !SET_B * Q)	0.00953	0.00936	0.00902
	(!D * SCD * SCE * SET_B * !Q)	0.00759	0.00742	0.00723
	(!D * SCD * SCE * SET_B * !Q)	0.00961	0.00944	0.00924
	(!D * SCD * SCE * Q)	0.00435	0.00421	0.00410
	(!D * SCD * SCE * Q)	0.00652	0.00637	0.00626
	(!D * !SCE * SET_B * Q)	0.00849	0.00836	0.00784
	(!D * !SCE * SET_B * Q)	0.01082	0.01067	0.01006
	(!D * !SCE * SET_B * !Q)	0.00449	0.00434	0.00420
	(!D * !SCE * SET_B * !Q)	0.00666	0.00650	0.00637
	(!D * !SCE * !SET_B * Q)	0.00715	0.00701	0.00674
	(!D * !SCE * !SET_B * Q)	0.00953	0.00937	0.00902
	(!D * !SCD * SCE * SET_B * Q)	0.00850	0.00837	0.00780
	(!D * !SCD * SCE * SET_B * Q)	0.01084	0.01069	0.01001
	(!D * !SCD * SCE * SET_B * !Q)	0.00449	0.00434	0.00420
	(!D * !SCD * SCE * SET_B * !Q)	0.00666	0.00650	0.00637
	(!D * !SCD * SCE * !SET_B * Q)	0.00716	0.00700	0.00670
	(!D * !SCD * SCE * !SET_B * Q)	0.00953	0.00937	0.00897

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.00888	0.00872	0.00858
	(D * SCD * SCE * SET_B * !Q)	0.01082	0.01066	0.01050
	(D * SCD * SCE * Q)	0.00505	0.00491	0.00480
	(D * SCD * SCE * Q)	0.00721	0.00707	0.00694
	(D * !SCE * SET_B * !Q)	0.00886	0.00870	0.00855
	(D * !SCE * SET_B * !Q)	0.01080	0.01064	0.01048
	(D * !SCE * Q)	0.00505	0.00491	0.00480
	(D * !SCE * Q)	0.00721	0.00707	0.00694
	(D * !SCD * SCE * SET_B * Q)	0.00997	0.00983	0.00811
	(D * !SCD * SCE * SET_B * Q)	0.01234	0.01220	0.01035
	(D * !SCD * SCE * SET_B * !Q)	0.00495	0.00480	0.00468
	(D * !SCD * SCE * SET_B * !Q)	0.00711	0.00695	0.00683
	(D * !SCD * SCE * !SET_B * Q)	0.00851	0.00839	0.00754
	(D * !SCD * SCE * !SET_B * Q)	0.01092	0.01080	0.00982
	(!D * SCD * SCE * SET_B * !Q)	0.00891	0.00875	0.00860
	(!D * SCD * SCE * SET_B * !Q)	0.01083	0.01068	0.01051
	(!D * SCD * SCE * Q)	0.00505	0.00491	0.00480
	(!D * SCD * SCE * Q)	0.00721	0.00707	0.00694
	(!D * !SCE * SET_B * Q)	0.00995	0.00981	0.00813
	(!D * !SCE * SET_B * Q)	0.01231	0.01217	0.01033
	(!D * !SCE * SET_B * !Q)	0.00495	0.00480	0.00468
	(!D * !SCE * SET_B * !Q)	0.00711	0.00695	0.00683
	(!D * !SCE * !SET_B * Q)	0.00851	0.00839	0.00758
	(!D * !SCE * !SET_B * Q)	0.01092	0.01080	0.00983
	(!D * !SCD * SCE * SET_B * Q)	0.00996	0.00983	0.00806
	(!D * !SCD * SCE * SET_B * Q)	0.01232	0.01219	0.01025
	(!D * !SCD * SCE * SET_B * !Q)	0.00495	0.00480	0.00468
	(!D * !SCD * SCE * SET_B * !Q)	0.00711	0.00695	0.00683
	(!D * !SCD * SCE * !SET_B * Q)	0.00851	0.00840	0.00753
	(!D * !SCD * SCE * !SET_B * Q)	0.01092	0.01082	0.00976

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.00866	0.00850	0.00835
	(D * SCD * SCE * SET_B * !Q)	0.01064	0.01047	0.01031
	(D * SCD * SCE * Q)	0.00495	0.00481	0.00470
	(D * SCD * SCE * Q)	0.00711	0.00697	0.00684
	(D * !SCE * SET_B * !Q)	0.00864	0.00848	0.00833
	(D * !SCE * SET_B * !Q)	0.01062	0.01045	0.01030
	(D * !SCE * Q)	0.00495	0.00481	0.00470
	(D * !SCE * Q)	0.00711	0.00697	0.00684
	(D * !SCD * SCE * SET_B * Q)	0.00976	0.00962	0.00799
	(D * !SCD * SCE * SET_B * Q)	0.01210	0.01196	0.01021
	(D * !SCD * SCE * SET_B * !Q)	0.00482	0.00467	0.00454
	(D * !SCD * SCE * SET_B * !Q)	0.00698	0.00682	0.00670
	(D * !SCD * SCE * !SET_B * Q)	0.00831	0.00819	0.00739
	(D * !SCD * SCE * !SET_B * Q)	0.01068	0.01057	0.00964
	(!D * SCD * SCE * SET_B * !Q)	0.00868	0.00853	0.00837
	(!D * SCD * SCE * SET_B * !Q)	0.01066	0.01049	0.01033
	(!D * SCD * SCE * Q)	0.00495	0.00481	0.00470
	(!D * SCD * SCE * Q)	0.00711	0.00697	0.00684
	(!D * !SCE * SET_B * Q)	0.00975	0.00961	0.00801
	(!D * !SCE * SET_B * Q)	0.01207	0.01193	0.01019
	(!D * !SCE * SET_B * !Q)	0.00482	0.00467	0.00454
	(!D * !SCE * SET_B * !Q)	0.00698	0.00682	0.00670
	(!D * !SCE * !SET_B * Q)	0.00831	0.00819	0.00743
	(!D * !SCE * !SET_B * Q)	0.01068	0.01057	0.00966
	(!D * !SCD * SCE * SET_B * Q)	0.00975	0.00962	0.00794
	(!D * !SCD * SCE * SET_B * Q)	0.01208	0.01195	0.01011
	(!D * !SCD * SCE * SET_B * !Q)	0.00482	0.00467	0.00454
	(!D * !SCD * SCE * SET_B * !Q)	0.00698	0.00682	0.00670
	(!D * !SCD * SCE * !SET_B * Q)	0.00831	0.00821	0.00738
	(!D * !SCD * SCE * !SET_B * Q)	0.01069	0.01058	0.00959

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT	
D	SCD	SCE	CLK	Q	Q_N
0	0	x	R	0	1
0	1	0	R	0	1
x	1	1	R	1	0
1	x	0	R	1	0
1	0	1	R	0	1
x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxbp_1	41.55840
sky130_fd_sc_hs__sdfxbp_2	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sdfxbp_1	0.00171	0.00169	0.00368	0.00270	0.18596	0.18274
sky130_fd_sc_hs__sdfxbp_2	0.00169	0.00166	0.00373	0.00270	0.37686	0.36642

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	0.00055	0.00060
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.00063	0.00068

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RR)	1.00068	2.36022	10.29630
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.97525	2.16474	10.43420

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	1.07737	1.82275	4.70213
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	1.18581	1.94057	4.90876

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q_N (RR)	1.29124	2.63629	10.57890
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	1.48178	2.61264	10.74530

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q_N (RF)	1.14909	1.84210	4.67678
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	1.26905	1.94696	4.85153

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.14882	-0.29830	-1.27393
	setup	CLK (R)	0.52187	0.56262	1.60624
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.14833	-0.29716	-1.25831
	setup	CLK (R)	0.51796	0.55783	1.60718

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.19180	-0.43950	-3.68661
	setup	CLK (R)	1.92270	2.00328	5.17180
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.19071	-0.44080	-3.69405
	setup	CLK (R)	1.96143	2.04643	5.20026

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.14882	-0.29830	-1.27393
	setup	CLK (R)	0.52187	0.56262	1.60624
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.14833	-0.29716	-1.25831
	setup	CLK (R)	0.51796	0.55783	1.60718

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.19180	-0.43950	-3.68661
	setup	CLK (R)	1.92270	2.00328	5.17180
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.19071	-0.44080	-3.69405
	setup	CLK (R)	1.96143	2.04643	5.20026

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.17353	-0.31461	-1.49156
	setup	CLK (R)	0.56251	0.58760	1.76884
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.17401	-0.31180	-1.47318
	setup	CLK (R)	0.55435	0.57787	1.76150

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.29743	-0.60517	-4.72020
	setup	CLK (R)	2.24254	2.38669	5.87204
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.28754	-0.60308	-4.70251
	setup	CLK (R)	2.28044	2.42598	5.90014

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.17353	-0.31528	-1.50003
	hold	CLK (R)	-0.17671	-0.31461	-1.49156
	setup	CLK (R)	0.56251	0.58760	1.76884
	setup	CLK (R)	0.55683	0.58560	1.76227
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.17401	-0.31651	-1.48203
	hold	CLK (R)	-0.17401	-0.31180	-1.47318
	setup	CLK (R)	0.55435	0.57787	1.76150
	setup	CLK (R)	0.54934	0.57576	1.75570

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.32247	-0.62695	-4.87271
	hold	CLK (R)	-0.29743	-0.60517	-4.72020
	setup	CLK (R)	2.21316	2.35976	5.85433
	setup	CLK (R)	2.24254	2.38669	5.87204
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.31396	-0.62902	-4.85947
	hold	CLK (R)	-0.28754	-0.60308	-4.70251
	setup	CLK (R)	2.24815	2.39600	5.87371
	setup	CLK (R)	2.28044	2.42598	5.90014

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.15494	-0.30920	-1.02700
	setup	CLK (R)	2.13567	2.08862	1.87729
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.15488	-0.30780	-1.04128
	setup	CLK (R)	2.17277	2.13723	1.92581

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.26116	-0.55536	-4.31703
	setup	CLK (R)	1.98547	2.12005	5.58236
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.26439	-0.55795	-4.32667
	setup	CLK (R)	2.02845	2.16794	5.61440

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.22579	-0.38988	-1.02700
	hold	CLK (R)	-0.15494	-0.30920	-1.33368
	setup	CLK (R)	2.13567	2.08862	1.87729
	setup	CLK (R)	0.53819	0.58050	1.65927
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.22933	-0.39507	-1.04128
	hold	CLK (R)	-0.15488	-0.30780	-1.31715
	setup	CLK (R)	2.17277	2.13723	1.92581
	setup	CLK (R)	0.53117	0.57146	1.65716

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	hold	CLK (R)	-0.47601	-0.76896	-4.31703
	hold	CLK (R)	-0.26116	-0.55536	-4.56667
	setup	CLK (R)	0.85102	1.01851	4.49630
	setup	CLK (R)	1.98547	2.12005	5.58236
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.48455	-0.77488	-4.32667
	hold	CLK (R)	-0.26439	-0.55795	-4.57788
	setup	CLK (R)	0.86009	1.02147	4.52030
	setup	CLK (R)	2.02845	2.16794	5.61440

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	min_pulse_width	CLK ()	0.54131	1.45020	16.50020
	min_pulse_width	CLK ()	0.33732	1.45020	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.55163	1.45020	16.50020
	min_pulse_width	CLK ()	0.34507	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxbp_1	min_pulse_width	CLK ()	0.96928	1.63393	16.50020
	min_pulse_width	CLK ()	1.80914	1.96325	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.98101	1.64433	16.50020
	min_pulse_width	CLK ()	1.85457	2.00485	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00759	0.00755	0.00749
	CLK	0.00650	0.00646	0.00641
sky130_fd_sc_hs__sdfxbp_2	CLK	0.00913	0.00918	0.00919
	CLK	0.00804	0.00810	0.00812

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00775	0.00774	0.00756
	CLK	0.00667	0.00666	0.00648
sky130_fd_sc_hs__sdfxbp_2	CLK	0.00924	0.00934	0.00914
	CLK	0.00815	0.00826	0.00806

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00776	0.00774	0.00777
	CLK	0.00667	0.00666	0.00669
sky130_fd_sc_hs__sdfxbp_2	CLK	0.00924	0.00935	0.00942
	CLK	0.00816	0.00826	0.00836

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00760	0.00753	0.00729
	CLK	0.00651	0.00644	0.00620
sky130_fd_sc_hs__sdfxbp_2	CLK	0.00912	0.00917	0.00892
	CLK	0.00803	0.00809	0.00783

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00064	0.00065	0.00064
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCE)	0.00219	0.00213	0.00208
	(CLK * !SCE)	0.00057	0.00050	0.00046
	(CLK * !SCD * SCE)	0.00040	0.00040	0.00040
	(CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00061
	(!CLK * SCD * SCE)	0.00064	0.00065	0.00064
	(!CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00509	0.00504	0.00495
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00348	0.00342	0.00333
	(!CLK * !SCD * SCE)	0.00040	0.00041	0.00040
	(!CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00061
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00065	0.00066	0.00065
	(CLK * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(CLK * !SCE)	0.00215	0.00209	0.00204
	(CLK * !SCE)	0.00055	0.00048	0.00044
	(CLK * !SCD * SCE)	0.00042	0.00042	0.00041
	(CLK * !SCD * SCE)	-0.00059	-0.00060	-0.00060
	(!CLK * SCD * SCE)	0.00065	0.00066	0.00065
	(!CLK * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00512	0.00507	0.00498
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00352	0.00347	0.00338
	(!CLK * !SCD * SCE)	0.00042	0.00042	0.00041
	(!CLK * !SCD * SCE)	-0.00059	-0.00060	-0.00060

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00063	-0.00064	-0.00064
	(CLK * SCD * SCE)	0.00037	0.00037	0.00036
	(CLK * !SCE)	0.00056	0.00049	0.00048
	(CLK * !SCE)	0.00217	0.00211	0.00210
	(CLK * !SCD * SCE)	-0.00040	-0.00040	-0.00039
	(CLK * !SCD * SCE)	0.00062	0.00061	0.00061
	(!CLK * SCD * SCE)	-0.00063	-0.00064	-0.00064
	(!CLK * SCD * SCE)	0.00037	0.00037	0.00036
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00372	0.00365	0.00354
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00535	0.00528	0.00514
	(!CLK * !SCD * SCE)	-0.00039	-0.00040	-0.00039
	(!CLK * !SCD * SCE)	0.00062	0.00062	0.00061
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00064	-0.00064	-0.00065
	(CLK * SCD * SCE)	0.00036	0.00037	0.00036
	(CLK * !SCE)	0.00062	0.00056	0.00054
	(CLK * !SCE)	0.00222	0.00216	0.00215
	(CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !SCD * SCE)	0.00060	0.00060	0.00060
	(!CLK * SCD * SCE)	-0.00064	-0.00064	-0.00065
	(!CLK * SCD * SCE)	0.00037	0.00037	0.00036
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00373	0.00366	0.00354
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00533	0.00526	0.00512
	(!CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !SCD * SCE)	0.00060	0.00060	0.00060

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00281	0.00276	0.00271
	(CLK * D * SCE)	0.00086	0.00081	0.00075
	(CLK * !D * SCE)	0.00303	0.00299	0.00291
	(CLK * !D * SCE)	0.00107	0.00102	0.00095
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00571	0.00567	0.00558
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00375	0.00371	0.00362
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00593	0.00589	0.00578
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00397	0.00392	0.00383
	!SCE	0.00051	0.00051	0.00051
	!SCE	-0.00060	-0.00061	-0.00061
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00276	0.00271	0.00266
	(CLK * D * SCE)	0.00083	0.00079	0.00074
	(CLK * !D * SCE)	0.00298	0.00294	0.00286
	(CLK * !D * SCE)	0.00104	0.00100	0.00094
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00573	0.00569	0.00560
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00380	0.00377	0.00368
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00595	0.00592	0.00580
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00401	0.00398	0.00388
	!SCE	0.00049	0.00049	0.00049
	!SCE	-0.00060	-0.00061	-0.00061

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00102	0.00095	0.00092
	(CLK * D * SCE)	0.00298	0.00292	0.00286
	(CLK * !D * SCE)	0.00083	0.00078	0.00077
	(CLK * !D * SCE)	0.00280	0.00274	0.00271
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00417	0.00411	0.00372
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00613	0.00606	0.00562
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00399	0.00393	0.00356
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00596	0.00590	0.00543
	!SCE	-0.00050	-0.00051	-0.00051
	!SCE	0.00060	0.00061	0.00061
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00107	0.00102	0.00098
	(CLK * D * SCE)	0.00300	0.00294	0.00289
	(CLK * !D * SCE)	0.00089	0.00084	0.00083
	(CLK * !D * SCE)	0.00282	0.00277	0.00275
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00416	0.00410	0.00370
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00609	0.00603	0.00556
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00398	0.00393	0.00353
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00592	0.00586	0.00537
	!SCE	-0.00048	-0.00049	-0.00049
	!SCE	0.00061	0.00062	0.00061

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00276	0.00267	0.00260
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00014	-0.00026	-0.00031
	(CLK * D * !SCD)	0.00420	0.00407	0.00396
	(CLK * D * !SCD)	0.00207	0.00193	0.00179
	(CLK * !D * SCD)	0.00481	0.00464	0.00451
	(CLK * !D * SCD)	0.00124	0.00107	0.00096
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00276	0.00267	0.00260
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00014	-0.00026	-0.00031
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00729	0.00722	0.00711
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00515	0.00506	0.00494
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00770	0.00754	0.00738
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00414	0.00398	0.00382
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00269	0.00259	0.00253
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00010	-0.00020	-0.00026

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00288	0.00278	0.00271
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00010	-0.00021	-0.00027
	(CLK * D * !SCD)	0.00438	0.00425	0.00412
	(CLK * D * !SCD)	0.00215	0.00200	0.00187
	(CLK * !D * SCD)	0.00489	0.00473	0.00460
	(CLK * !D * SCD)	0.00127	0.00110	0.00099
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00288	0.00278	0.00272
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00010	-0.00021	-0.00027
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00740	0.00733	0.00721
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00517	0.00508	0.00495
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00787	0.00770	0.00754
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00424	0.00408	0.00393
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00281	0.00270	0.00264
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00006	-0.00017	-0.00022

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfxbp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00019	-0.00026	-0.00029
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00273	0.00265	0.00262
	(CLK * D * !SCD)	0.00199	0.00190	0.00182
	(CLK * D * !SCD)	0.00414	0.00405	0.00398
	(CLK * !D * SCD)	0.00075	0.00060	0.00056
	(CLK * !D * SCD)	0.00430	0.00415	0.00413
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00018	-0.00026	-0.00029
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00273	0.00265	0.00262
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00486	0.00480	0.00473
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00701	0.00695	0.00689
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00392	0.00377	0.00354
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00748	0.00733	0.00705
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00002	-0.00007	-0.00010
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00279	0.00271	0.00268

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00021	-0.00029	-0.00032
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00277	0.00270	0.00266
	(CLK * D * !SCD)	0.00193	0.00184	0.00176
	(CLK * D * !SCD)	0.00417	0.00407	0.00401
	(CLK * !D * SCD)	0.00080	0.00065	0.00061
	(CLK * !D * SCD)	0.00440	0.00425	0.00422
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00021	-0.00029	-0.00032
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00277	0.00270	0.00267
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00488	0.00482	0.00474
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00711	0.00705	0.00698
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00391	0.00375	0.00350
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00752	0.00738	0.00706
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00001	-0.00009	-0.00012
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00286	0.00277	0.00274

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(D * SCD * SCE * Q * !Q_N)	0.00700	0.00679	0.00666
	(D * SCD * SCE * Q * !Q_N)	0.00481	0.00461	0.00449
	(D * !SCE * Q * !Q_N)	0.00699	0.00679	0.00666
	(D * !SCE * Q * !Q_N)	0.00481	0.00461	0.00449
	(D * !SCD * SCE * !Q * Q_N)	0.00694	0.00673	0.00661
	(D * !SCD * SCE * !Q * Q_N)	0.00477	0.00455	0.00443
	(!D * SCD * SCE * Q * !Q_N)	0.00700	0.00679	0.00666
	(!D * SCD * SCE * Q * !Q_N)	0.00481	0.00461	0.00449
	(!D * !SCE * !Q * Q_N)	0.00694	0.00673	0.00661
	(!D * !SCE * !Q * Q_N)	0.00477	0.00455	0.00443
	(!D * !SCD * SCE * !Q * Q_N)	0.00694	0.00673	0.00661
	(!D * !SCD * SCE * !Q * Q_N)	0.00477	0.00455	0.00443
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.00714	0.00695	0.00682
	(D * SCD * SCE * Q * !Q_N)	0.00498	0.00477	0.00465
	(D * !SCE * Q * !Q_N)	0.00714	0.00694	0.00682
	(D * !SCE * Q * !Q_N)	0.00498	0.00477	0.00465
	(D * !SCD * SCE * !Q * Q_N)	0.00710	0.00690	0.00677
	(D * !SCD * SCE * !Q * Q_N)	0.00493	0.00472	0.00460
	(!D * SCD * SCE * Q * !Q_N)	0.00714	0.00695	0.00682
	(!D * SCD * SCE * Q * !Q_N)	0.00498	0.00477	0.00465
	(!D * !SCE * !Q * Q_N)	0.00710	0.00690	0.00678
	(!D * !SCE * !Q * Q_N)	0.00493	0.00472	0.00460
	(!D * !SCD * SCE * !Q * Q_N)	0.00711	0.00690	0.00677
	(!D * !SCD * SCE * !Q * Q_N)	0.00494	0.00472	0.00460

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxbp_1	**(D * SCD * SCE * Q * !Q_N)**	0.00402	0.00386	0.00376
	(D * SCD * SCE * Q * !Q_N)	0.00620	0.00604	0.00594
	(D * SCD * SCE * !Q * Q_N)	0.00690	0.00672	0.00652
	(D * SCD * SCE * !Q * Q_N)	0.00908	0.00890	0.00869
	(D * !SCE * Q * !Q_N)	0.00402	0.00387	0.00376
	(D * !SCE * Q * !Q_N)	0.00620	0.00604	0.00594
	(D * !SCE * !Q * Q_N)	0.00687	0.00670	0.00650
	(D * !SCE * !Q * Q_N)	0.00906	0.00887	0.00868
	(D * !SCD * SCE * Q * !Q_N)	0.00784	0.00768	0.00764
	(D * !SCD * SCE * Q * !Q_N)	0.01004	0.00987	0.00981
	(D * !SCD * SCE * !Q * Q_N)	0.00406	0.00390	0.00379
	(D * !SCD * SCE * !Q * Q_N)	0.00624	0.00607	0.00597
	(!D * SCD * SCE * Q * !Q_N)	0.00402	0.00386	0.00376
	(!D * SCD * SCE * Q * !Q_N)	0.00620	0.00604	0.00594
	(!D * SCD * SCE * !Q * Q_N)	0.00692	0.00674	0.00655
	(!D * SCD * SCE * !Q * Q_N)	0.00909	0.00890	0.00872
	(!D * !SCE * Q * !Q_N)	0.00782	0.00767	0.00764
	(!D * !SCE * Q * !Q_N)	0.01001	0.00985	0.00979
	(!D * !SCE * !Q * Q_N)	0.00405	0.00390	0.00379
	(!D * !SCE * !Q * Q_N)	0.00624	0.00607	0.00597
	(!D * !SCD * SCE * Q * !Q_N)	0.00783	0.00768	0.00762
	(!D * !SCD * SCE * Q * !Q_N)	0.01003	0.00986	0.00976
	(!D * !SCD * SCE * !Q * Q_N)	0.00406	0.00390	0.00379
	(!D * !SCD * SCE * !Q * Q_N)	0.00624	0.00607	0.00597

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00408	0.00393	0.00382
	(D * SCD * SCE * Q * !Q_N)	0.00626	0.00611	0.00600
	(D * SCD * SCE * !Q * Q_N)	0.00703	0.00685	0.00667
	(D * SCD * SCE * !Q * Q_N)	0.00921	0.00903	0.00884
	(D * !SCE * Q * !Q_N)	0.00408	0.00393	0.00382
	(D * !SCE * Q * !Q_N)	0.00626	0.00611	0.00600
	(D * !SCE * !Q * Q_N)	0.00700	0.00683	0.00664
	(D * !SCE * !Q * Q_N)	0.00919	0.00901	0.00882
	(D * !SCD * SCE * Q * !Q_N)	0.00785	0.00767	0.00759
	(D * !SCD * SCE * Q * !Q_N)	0.01005	0.00987	0.00976
	(D * !SCD * SCE * !Q * Q_N)	0.00410	0.00395	0.00384
	(D * !SCD * SCE * !Q * Q_N)	0.00629	0.00613	0.00601
	(!D * SCD * SCE * Q * !Q_N)	0.00408	0.00393	0.00382
	(!D * SCD * SCE * Q * !Q_N)	0.00626	0.00611	0.00600
	(!D * SCD * SCE * !Q * Q_N)	0.00705	0.00688	0.00668
	(!D * SCD * SCE * !Q * Q_N)	0.00922	0.00905	0.00884
	(!D * !SCE * Q * !Q_N)	0.00783	0.00765	0.00759
	(!D * !SCE * Q * !Q_N)	0.01002	0.00983	0.00974
	(!D * !SCE * !Q * Q_N)	0.00410	0.00395	0.00384
	(!D * !SCE * !Q * Q_N)	0.00629	0.00613	0.00602
	(!D * !SCD * SCE * Q * !Q_N)	0.00784	0.00766	0.00757
	(!D * !SCD * SCE * Q * !Q_N)	0.01003	0.00985	0.00971
	(!D * !SCD * SCE * !Q * Q_N)	0.00410	0.00395	0.00384
	(!D * !SCD * SCE * !Q * Q_N)	0.00629	0.00613	0.00601

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT				OUTPUT
D	SCD	SCE	CLK	Q
0	0	x	R	0
0	1	0	R	0
x	1	1	R	1
1	x	0	R	1
1	0	1	R	0
x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxtp_1	36.76320
sky130_fd_sc_hs__sdfxtp_2	39.96000
sky130_fd_sc_hs__sdfxtp_4	41.55840

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	D	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sdfxtp_1	0.00173	0.00179	0.00383	0.00268	0.18306
sky130_fd_sc_hs__sdfxtp_2	0.00176	0.00175	0.00369	0.00271	0.37612
sky130_fd_sc_hs__sdfxtp_4	0.00174	0.00173	0.00381	0.00269	0.72036

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.00047	0.00052
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.00052	0.00057
sky130_fd_sc_hs__sdfxtp_4	0.00000	0.00060	0.00065

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RR)**	0.94957	2.30669	10.16530
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.95037	2.14455	10.42020
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	1.14912	2.19183	10.52920

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	1.00358	1.71244	4.56805
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	1.07787	1.79359	4.74469
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	1.05015	1.73141	4.69280

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.14815	-0.30216	-1.28644
	setup	CLK (R)	0.51357	0.55767	1.64040
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.15554	-0.30878	-1.30154
	setup	CLK (R)	0.54879	0.58367	1.67510
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14435	-0.29733	-1.26967
	setup	CLK (R)	0.52777	0.56870	1.61013

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.19834	-0.45373	-3.75534
	setup	CLK (R)	1.99158	2.07835	5.23898
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.20995	-0.46503	-3.78623
	setup	CLK (R)	2.10469	2.19232	5.32503
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.20883	-0.46204	-3.76328
	setup	CLK (R)	1.96693	2.04321	5.20431

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.14815	-0.30216	-1.28644
	setup	CLK (R)	0.51357	0.55767	1.64040
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.15554	-0.30878	-1.30154
	setup	CLK (R)	0.54879	0.58367	1.67510
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14435	-0.29733	-1.26967
	setup	CLK (R)	0.52777	0.56870	1.61013

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.19834	-0.45373	-3.75534
	setup	CLK (R)	1.99158	2.07835	5.23898
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.20995	-0.46503	-3.78623
	setup	CLK (R)	2.10469	2.19232	5.32503
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.20883	-0.46204	-3.76328
	setup	CLK (R)	1.96693	2.04321	5.20431

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.17541	-0.31740	-1.50535
	setup	CLK (R)	0.55303	0.58485	1.80044
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.18248	-0.32476	-1.51520
	setup	CLK (R)	0.58886	0.60897	1.82137
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.17235	-0.31398	-1.48540
	setup	CLK (R)	0.56917	0.59294	1.76487

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.31678	-0.62236	-4.81650
	setup	CLK (R)	2.31775	2.46267	5.94230
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.31568	-0.62289	-4.83390
	setup	CLK (R)	2.42669	2.57069	6.01576
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.31771	-0.62510	-4.80221
	setup	CLK (R)	2.29024	2.43422	5.90591

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.17802	-0.31888	-1.51185
	hold	CLK (R)	-0.17541	-0.31740	-1.50535
	setup	CLK (R)	0.55303	0.58485	1.80044
	setup	CLK (R)	0.54881	0.57855	1.79589
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.18354	-0.32642	-1.51958
	hold	CLK (R)	-0.18248	-0.32476	-1.51520
	setup	CLK (R)	0.58886	0.60897	1.82137
	setup	CLK (R)	0.58618	0.60555	1.81957
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.17235	-0.31616	-1.49495
	hold	CLK (R)	-0.17349	-0.31398	-1.48540
	setup	CLK (R)	0.56917	0.59294	1.76487
	setup	CLK (R)	0.56635	0.59038	1.76134

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.33498	-0.65441	-4.90998
	hold	CLK (R)	-0.31678	-0.62236	-4.81650
	setup	CLK (R)	2.28621	2.43610	5.92513
	setup	CLK (R)	2.31775	2.46267	5.94230
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.33879	-0.65946	-4.92917
	hold	CLK (R)	-0.31568	-0.62289	-4.83390
	setup	CLK (R)	2.39264	2.54179	5.99820
	setup	CLK (R)	2.42669	2.57069	6.01576
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.34069	-0.65636	-4.88762
	hold	CLK (R)	-0.31771	-0.62510	-4.80221
	setup	CLK (R)	2.25688	2.40033	5.88447
	setup	CLK (R)	2.29024	2.43422	5.90591

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.15888	-0.31108	-1.08558
	setup	CLK (R)	2.20706	2.17524	1.98919
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.16485	-0.31795	-1.08430
	setup	CLK (R)	2.31582	2.28279	2.03042
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.15565	-0.30583	-1.07954
	setup	CLK (R)	2.17856	2.13925	1.95530

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.27289	-0.56939	-4.37556
	setup	CLK (R)	2.05266	2.19551	5.64680
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.27196	-0.57295	-4.33254
	setup	CLK (R)	2.15794	2.30096	5.71804
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.28279	-0.57790	-4.35879
	setup	CLK (R)	2.02973	2.16732	5.61709

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.24482	-0.41114	-1.08558
	hold	CLK (R)	-0.15888	-0.31108	-1.34953
	setup	CLK (R)	2.20706	2.17524	1.98919
	setup	CLK (R)	0.52842	0.57604	1.69197
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.25208	-0.41649	-1.08430
	hold	CLK (R)	-0.16485	-0.31795	-1.35950
	setup	CLK (R)	2.31582	2.28279	2.03042
	setup	CLK (R)	0.56932	0.60203	1.71619
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.25504	-0.41338	-1.07954
	hold	CLK (R)	-0.15565	-0.30583	-1.33172
	setup	CLK (R)	2.17856	2.13925	1.95530
	setup	CLK (R)	0.54497	0.58676	1.66026

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	hold	CLK (R)	-0.49367	-0.78727	-4.37556
	hold	CLK (R)	-0.27289	-0.56939	-4.62004
	setup	CLK (R)	0.86210	1.03084	4.57393
	setup	CLK (R)	2.05266	2.19551	5.64680
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.49006	-0.77917	-4.33254
	hold	CLK (R)	-0.27196	-0.57295	-4.64512
	setup	CLK (R)	0.88789	1.04480	4.54367
	setup	CLK (R)	2.15794	2.30096	5.71804
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.49121	-0.78285	-4.35879
	hold	CLK (R)	-0.28279	-0.57790	-4.61826
	setup	CLK (R)	0.87609	1.04573	4.54322
	setup	CLK (R)	2.02973	2.16732	5.61709

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	min_pulse_width	CLK ()	0.52065	1.45020	16.50020
	min_pulse_width	CLK ()	0.33216	1.45020	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.55680	1.45020	16.50020
	min_pulse_width	CLK ()	0.34507	1.45020	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.70914	1.45020	16.50020
	min_pulse_width	CLK ()	0.34507	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdfxtp_1	min_pulse_width	CLK ()	0.96237	1.63739	16.50020
	min_pulse_width	CLK ()	1.83359	1.99792	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	1.02475	1.66859	16.50020
	min_pulse_width	CLK ()	1.91197	2.06725	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.97711	1.63739	16.50020
	min_pulse_width	CLK ()	1.83454	1.99099	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.01172	0.01157	0.01147
	CLK	0.00957	0.00942	0.00932
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01342	0.01333	0.01333
	CLK	0.01124	0.01116	0.01117
sky130_fd_sc_hs__sdfxtp_4	CLK	0.01672	0.01681	0.01699
	CLK	0.01456	0.01465	0.01486

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.01223	0.01212	0.01213
	CLK	0.01008	0.00997	0.00997
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01385	0.01387	0.01389
	CLK	0.01168	0.01170	0.01170
sky130_fd_sc_hs__sdfxtp_4	CLK	0.01728	0.01750	0.01755
	CLK	0.01512	0.01535	0.01539

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00066	0.00067	0.00066
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCE)	0.00220	0.00214	0.00209
	(CLK * !SCE)	0.00054	0.00047	0.00043
	(CLK * !SCD * SCE)	0.00042	0.00042	0.00041
	(CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00061
	(!CLK * SCD * SCE)	0.00066	0.00067	0.00066
	(!CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCE)	0.00521	0.00515	0.00507
	(!CLK * !SCE)	0.00355	0.00349	0.00340
	(!CLK * !SCD * SCE)	0.00042	0.00042	0.00042
	(!CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00061
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00068	0.00069	0.00068
	(CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !SCE)	0.00239	0.00233	0.00228
	(CLK * !SCE)	0.00069	0.00063	0.00058
	(CLK * !SCD * SCE)	0.00043	0.00044	0.00043
	(CLK * !SCD * SCE)	-0.00060	-0.00062	-0.00062
	(!CLK * SCD * SCE)	0.00068	0.00069	0.00068
	(!CLK * SCD * SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !SCE)	0.00569	0.00564	0.00555
	(!CLK * !SCE)	0.00399	0.00394	0.00385
	(!CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00067	0.00068	0.00067
	(CLK * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(CLK * !SCE)	0.00221	0.00215	0.00210
	(CLK * !SCE)	0.00055	0.00048	0.00044
	(CLK * !SCD * SCE)	0.00043	0.00044	0.00043
	(CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00061
	(!CLK * SCD * SCE)	0.00067	0.00068	0.00067
	(!CLK * SCD * SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * !SCE)	0.00524	0.00519	0.00510
	(!CLK * !SCE)	0.00358	0.00353	0.00344
	(!CLK * !SCD * SCE)	0.00043	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00061

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00065	-0.00066	-0.00066
	(CLK * SCD * SCE)	0.00037	0.00037	0.00036
	(CLK * !SCE)	0.00061	0.00054	0.00053
	(CLK * !SCE)	0.00227	0.00221	0.00219
	(CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !SCD * SCE)	0.00062	0.00061	0.00061
	(!CLK * SCD * SCE)	-0.00065	-0.00066	-0.00066
	(!CLK * SCD * SCE)	0.00037	0.00037	0.00036
	(!CLK * !SCE)	0.00361	0.00353	0.00341
	(!CLK * !SCE)	0.00528	0.00521	0.00505
	(!CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !SCD * SCE)	0.00062	0.00061	0.00061

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00067	-0.00068	-0.00068
	(CLK * SCD * SCE)	0.00037	0.00037	0.00036
	(CLK * !SCE)	0.00063	0.00057	0.00055
	(CLK * !SCE)	0.00234	0.00227	0.00225
	(CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * !SCD * SCE)	0.00062	0.00062	0.00062
	(!CLK * SCD * SCE)	-0.00067	-0.00068	-0.00068
	(!CLK * SCD * SCE)	0.00037	0.00037	0.00036
	(!CLK * !SCE)	0.00372	0.00364	0.00349
	(!CLK * !SCE)	0.00542	0.00534	0.00516
	(!CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * !SCD * SCE)	0.00063	0.00062	0.00062
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00066	-0.00067	-0.00067
	(CLK * SCD * SCE)	0.00037	0.00037	0.00036
	(CLK * !SCE)	0.00059	0.00052	0.00051
	(CLK * !SCE)	0.00224	0.00218	0.00217
	(CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00042
	(CLK * !SCD * SCE)	0.00061	0.00061	0.00061
	(!CLK * SCD * SCE)	-0.00066	-0.00067	-0.00067
	(!CLK * SCD * SCE)	0.00037	0.00037	0.00036
	(!CLK * !SCE)	0.00384	0.00377	0.00365
	(!CLK * !SCE)	0.00551	0.00542	0.00529
	(!CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * !SCD * SCE)	0.00061	0.00061	0.00061

Passive power(pJ) for SCD rising (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00288	0.00282	0.00277
	(CLK * D * SCE)	0.00084	0.00079	0.00074
	(CLK * !D * SCE)	0.00309	0.00305	0.00297
	(CLK * !D * SCE)	0.00105	0.00101	0.00094
	(!CLK * D * SCE)	0.00588	0.00583	0.00575
	(!CLK * D * SCE)	0.00385	0.00380	0.00371
	(!CLK * !D * SCE)	0.00610	0.00606	0.00595
	(!CLK * !D * SCE)	0.00406	0.00401	0.00391
	!SCE	0.00052	0.00053	0.00052
	!SCE	-0.00064	-0.00065	-0.00064
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00299	0.00294	0.00288
	(CLK * D * SCE)	0.00097	0.00092	0.00087
	(CLK * !D * SCE)	0.00321	0.00316	0.00309
	(CLK * !D * SCE)	0.00118	0.00114	0.00107
	(!CLK * D * SCE)	0.00627	0.00623	0.00614
	(!CLK * D * SCE)	0.00427	0.00421	0.00413
	(!CLK * !D * SCE)	0.00649	0.00645	0.00635
	(!CLK * !D * SCE)	0.00448	0.00443	0.00433
	!SCE	0.00053	0.00053	0.00053
	!SCE	-0.00060	-0.00061	-0.00061
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00285	0.00280	0.00275
	(CLK * D * SCE)	0.00087	0.00081	0.00076
	(CLK * !D * SCE)	0.00307	0.00303	0.00295
	(CLK * !D * SCE)	0.00108	0.00103	0.00096
	(!CLK * D * SCE)	0.00588	0.00583	0.00575
	(!CLK * D * SCE)	0.00390	0.00385	0.00376
	(!CLK * !D * SCE)	0.00610	0.00606	0.00595
	(!CLK * !D * SCE)	0.00411	0.00406	0.00397
	!SCE	0.00051	0.00051	0.00051
	!SCE	-0.00062	-0.00063	-0.00062

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00103	0.00096	0.00093
	(CLK * D * SCE)	0.00307	0.00300	0.00295
	(CLK * !D * SCE)	0.00085	0.00078	0.00077
	(CLK * !D * SCE)	0.00289	0.00283	0.00280
	(!CLK * D * SCE)	0.00401	0.00395	0.00353
	(!CLK * D * SCE)	0.00605	0.00598	0.00549
	(!CLK * !D * SCE)	0.00384	0.00377	0.00336
	(!CLK * !D * SCE)	0.00588	0.00582	0.00530
	!SCE	-0.00052	-0.00053	-0.00052
	!SCE	0.00065	0.00065	0.00064
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00111	0.00104	0.00101
	(CLK * D * SCE)	0.00313	0.00306	0.00301
	(CLK * !D * SCE)	0.00093	0.00086	0.00085
	(CLK * !D * SCE)	0.00295	0.00289	0.00286
	(!CLK * D * SCE)	0.00417	0.00410	0.00360
	(!CLK * D * SCE)	0.00619	0.00613	0.00554
	(!CLK * !D * SCE)	0.00400	0.00393	0.00343
	(!CLK * !D * SCE)	0.00602	0.00596	0.00535
	!SCE	-0.00053	-0.00053	-0.00053
	!SCE	0.00061	0.00061	0.00061

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00102	0.00096	0.00093
	(CLK * D * SCE)	0.00301	0.00295	0.00290
	(CLK * !D * SCE)	0.00084	0.00078	0.00077
	(CLK * !D * SCE)	0.00284	0.00278	0.00275
	(!CLK * D * SCE)	0.00426	0.00420	0.00379
	(!CLK * D * SCE)	0.00625	0.00619	0.00572
	(!CLK * !D * SCE)	0.00408	0.00402	0.00363
	(!CLK * !D * SCE)	0.00608	0.00602	0.00553
	!SCE	-0.00050	-0.00051	-0.00051
	!SCE	0.00062	0.00063	0.00062

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00294	0.00283	0.00277
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00015	-0.00027	-0.00033
	(CLK * D * !SCD)	0.00442	0.00429	0.00416
	(CLK * D * !SCD)	0.00215	0.00199	0.00185
	(CLK * !D * SCD)	0.00498	0.00482	0.00468
	(CLK * !D * SCD)	0.00121	0.00104	0.00092
	(!CLK * D * SCD)	0.00294	0.00283	0.00277
	(!CLK * D * SCD)	-0.00015	-0.00027	-0.00033
	(!CLK * D * !SCD)	0.00734	0.00727	0.00714
	(!CLK * D * !SCD)	0.00506	0.00496	0.00483
	(!CLK * !D * SCD)	0.00799	0.00782	0.00766
	(!CLK * !D * SCD)	0.00422	0.00405	0.00390
	(!CLK * !D * !SCD)	0.00286	0.00275	0.00269
	(!CLK * !D * !SCD)	-0.00011	-0.00022	-0.00028

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00281	0.00271	0.00265
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00015	-0.00027	-0.00032
	(CLK * D * !SCD)	0.00437	0.00424	0.00412
	(CLK * D * !SCD)	0.00222	0.00208	0.00194
	(CLK * !D * SCD)	0.00502	0.00486	0.00473
	(CLK * !D * SCD)	0.00136	0.00119	0.00108
	(!CLK * D * SCD)	0.00281	0.00271	0.00265
	(!CLK * D * SCD)	-0.00015	-0.00027	-0.00032
	(!CLK * D * !SCD)	0.00736	0.00729	0.00718
	(!CLK * D * !SCD)	0.00522	0.00513	0.00500
	(!CLK * !D * SCD)	0.00831	0.00814	0.00798
	(!CLK * !D * SCD)	0.00465	0.00449	0.00434
	(!CLK * !D * !SCD)	0.00276	0.00266	0.00259
	(!CLK * !D * !SCD)	-0.00008	-0.00019	-0.00025
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00293	0.00283	0.00276
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00014	-0.00027	-0.00033
	(CLK * D * !SCD)	0.00440	0.00426	0.00412
	(CLK * D * !SCD)	0.00211	0.00195	0.00181
	(CLK * !D * SCD)	0.00499	0.00482	0.00469
	(CLK * !D * SCD)	0.00124	0.00107	0.00095
	(!CLK * D * SCD)	0.00293	0.00283	0.00276
	(!CLK * D * SCD)	-0.00014	-0.00027	-0.00033
	(!CLK * D * !SCD)	0.00756	0.00748	0.00736
	(!CLK * D * !SCD)	0.00527	0.00518	0.00504
	(!CLK * !D * SCD)	0.00803	0.00786	0.00769
	(!CLK * !D * SCD)	0.00427	0.00411	0.00395
	(!CLK * !D * !SCD)	0.00285	0.00274	0.00268
	(!CLK * !D * !SCD)	-0.00011	-0.00022	-0.00028

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00020	-0.00029	-0.00031
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00289	0.00281	0.00277
	(CLK * D * !SCD)	0.00200	0.00191	0.00183
	(CLK * D * !SCD)	0.00429	0.00420	0.00413
	(CLK * !D * SCD)	0.00078	0.00062	0.00058
	(CLK * !D * SCD)	0.00454	0.00438	0.00435
	(!CLK * D * SCD)	-0.00020	-0.00028	-0.00031
	(!CLK * D * SCD)	0.00289	0.00281	0.00278
	(!CLK * D * !SCD)	0.00498	0.00492	0.00484
	(!CLK * D * !SCD)	0.00727	0.00721	0.00714
	(!CLK * !D * SCD)	0.00379	0.00362	0.00337
	(!CLK * !D * SCD)	0.00755	0.00739	0.00708
	(!CLK * !D * !SCD)	0.00001	-0.00009	-0.00011
	(!CLK * !D * !SCD)	0.00296	0.00288	0.00284

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00019	-0.00027	-0.00030
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00278	0.00270	0.00267
	(CLK * D * !SCD)	0.00217	0.00209	0.00201
	(CLK * D * !SCD)	0.00433	0.00424	0.00416
	(CLK * !D * SCD)	0.00082	0.00067	0.00063
	(CLK * !D * SCD)	0.00446	0.00431	0.00428
	(!CLK * D * SCD)	-0.00019	-0.00027	-0.00030
	(!CLK * D * SCD)	0.00278	0.00270	0.00267
	(!CLK * D * !SCD)	0.00544	0.00538	0.00531
	(!CLK * D * !SCD)	0.00759	0.00754	0.00746
	(!CLK * !D * SCD)	0.00390	0.00374	0.00344
	(!CLK * !D * SCD)	0.00755	0.00740	0.00702
	(!CLK * !D * !SCD)	-0.00000	-0.00009	-0.00012
	(!CLK * !D * !SCD)	0.00282	0.00275	0.00271
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00018	-0.00027	-0.00030
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00290	0.00281	0.00278
	(CLK * D * !SCD)	0.00202	0.00192	0.00184
	(CLK * D * !SCD)	0.00432	0.00422	0.00415
	(CLK * !D * SCD)	0.00078	0.00062	0.00058
	(CLK * !D * SCD)	0.00451	0.00436	0.00432
	(!CLK * D * SCD)	-0.00018	-0.00027	-0.00030
	(!CLK * D * SCD)	0.00290	0.00281	0.00278
	(!CLK * D * !SCD)	0.00502	0.00496	0.00488
	(!CLK * D * !SCD)	0.00732	0.00726	0.00719
	(!CLK * !D * SCD)	0.00404	0.00387	0.00363
	(!CLK * !D * SCD)	0.00778	0.00763	0.00732
	(!CLK * !D * !SCD)	0.00002	-0.00007	-0.00010
	(!CLK * !D * !SCD)	0.00298	0.00289	0.00285

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(D * SCD * SCE * Q)	0.00692	0.00671	0.00659
	(D * SCD * SCE * Q)	0.00476	0.00456	0.00444
	(D * !SCE * Q)	0.00692	0.00671	0.00659
	(D * !SCE * Q)	0.00475	0.00455	0.00444
	(D * !SCD * SCE * !Q)	0.00693	0.00672	0.00661
	(D * !SCD * SCE * !Q)	0.00479	0.00457	0.00445
	(!D * SCD * SCE * Q)	0.00692	0.00671	0.00659
	(!D * SCD * SCE * Q)	0.00476	0.00456	0.00444
	(!D * !SCE * !Q)	0.00693	0.00672	0.00661
	(!D * !SCE * !Q)	0.00479	0.00457	0.00445
	(!D * !SCD * SCE * !Q)	0.00693	0.00673	0.00661
	(!D * !SCD * SCE * !Q)	0.00479	0.00457	0.00445
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.00705	0.00684	0.00672
	(D * SCD * SCE * Q)	0.00488	0.00467	0.00455
	(D * !SCE * Q)	0.00704	0.00684	0.00672
	(D * !SCE * Q)	0.00487	0.00467	0.00455
	(D * !SCD * SCE * !Q)	0.00714	0.00693	0.00681
	(D * !SCD * SCE * !Q)	0.00497	0.00475	0.00463
	(!D * SCD * SCE * Q)	0.00705	0.00684	0.00672
	(!D * SCD * SCE * Q)	0.00488	0.00467	0.00455
	(!D * !SCE * !Q)	0.00714	0.00693	0.00680
	(!D * !SCE * !Q)	0.00497	0.00475	0.00463
	(!D * !SCD * SCE * !Q)	0.00714	0.00693	0.00680
	(!D * !SCD * SCE * !Q)	0.00497	0.00475	0.00463

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00699	0.00679	0.00667
	(D * SCD * SCE * Q)	0.00484	0.00463	0.00451
	(D * !SCE * Q)	0.00699	0.00679	0.00667
	(D * !SCE * Q)	0.00483	0.00463	0.00451
	(D * !SCD * SCE * !Q)	0.00699	0.00677	0.00665
	(D * !SCD * SCE * !Q)	0.00483	0.00461	0.00449
	(!D * SCD * SCE * Q)	0.00699	0.00679	0.00667
	(!D * SCD * SCE * Q)	0.00484	0.00463	0.00451
	(!D * !SCE * !Q)	0.00698	0.00677	0.00665
	(!D * !SCE * !Q)	0.00483	0.00461	0.00449
	(!D * !SCD * SCE * !Q)	0.00699	0.00677	0.00665
	(!D * !SCD * SCE * !Q)	0.00483	0.00461	0.00449

Passive power(pJ) for CLK falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sdfxtp_1	**(D * SCD * SCE * Q)**	0.00409	0.00394	0.00383
	(D * SCD * SCE * Q)	0.00625	0.00609	0.00599
	(D * SCD * SCE * !Q)	0.00700	0.00682	0.00663
	(D * SCD * SCE * !Q)	0.00916	0.00898	0.00878
	(D * !SCE * Q)	0.00409	0.00394	0.00383
	(D * !SCE * Q)	0.00625	0.00609	0.00599
	(D * !SCE * !Q)	0.00698	0.00680	0.00661
	(D * !SCE * !Q)	0.00914	0.00896	0.00876
	(D * !SCD * SCE * Q)	0.00774	0.00758	0.00753
	(D * !SCD * SCE * Q)	0.00991	0.00974	0.00967
	(D * !SCD * SCE * !Q)	0.00405	0.00389	0.00378
	(D * !SCD * SCE * !Q)	0.00621	0.00604	0.00594
	(!D * SCD * SCE * Q)	0.00409	0.00394	0.00383
	(!D * SCD * SCE * Q)	0.00625	0.00609	0.00599
	(!D * SCD * SCE * !Q)	0.00703	0.00685	0.00665
	(!D * SCD * SCE * !Q)	0.00918	0.00900	0.00880
	(!D * !SCE * Q)	0.00772	0.00756	0.00753
	(!D * !SCE * Q)	0.00988	0.00972	0.00966
	(!D * !SCE * !Q)	0.00405	0.00389	0.00378
	(!D * !SCE * !Q)	0.00621	0.00605	0.00594
	(!D * !SCD * SCE * Q)	0.00773	0.00757	0.00751
	(!D * !SCD * SCE * Q)	0.00990	0.00973	0.00963
	(!D * !SCD * SCE * !Q)	0.00405	0.00389	0.00378
	(!D * !SCD * SCE * !Q)	0.00621	0.00605	0.00594

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00427	0.00412	0.00401
	(D * SCD * SCE * Q)	0.00645	0.00629	0.00618
	(D * SCD * SCE * !Q)	0.00745	0.00727	0.00708
	(D * SCD * SCE * !Q)	0.00963	0.00945	0.00925
	(D * !SCE * Q)	0.00427	0.00412	0.00401
	(D * !SCE * Q)	0.00645	0.00629	0.00618
	(D * !SCE * !Q)	0.00743	0.00725	0.00706
	(D * !SCE * !Q)	0.00961	0.00943	0.00924
	(D * !SCD * SCE * Q)	0.00798	0.00783	0.00771
	(D * !SCD * SCE * Q)	0.01018	0.01001	0.00987
	(D * !SCD * SCE * !Q)	0.00416	0.00400	0.00388
	(D * !SCD * SCE * !Q)	0.00634	0.00617	0.00606
	(!D * SCD * SCE * Q)	0.00427	0.00412	0.00401
	(!D * SCD * SCE * Q)	0.00645	0.00629	0.00618
	(!D * SCD * SCE * !Q)	0.00747	0.00729	0.00710
	(!D * SCD * SCE * !Q)	0.00965	0.00946	0.00927
	(!D * !SCE * Q)	0.00796	0.00779	0.00772
	(!D * !SCE * Q)	0.01015	0.00996	0.00986
	(!D * !SCE * !Q)	0.00416	0.00400	0.00388
	(!D * !SCE * !Q)	0.00634	0.00618	0.00606
	(!D * !SCD * SCE * Q)	0.00797	0.00782	0.00769
	(!D * !SCD * SCE * Q)	0.01017	0.01000	0.00982
	(!D * !SCD * SCE * !Q)	0.00416	0.00400	0.00388
	(!D * !SCD * SCE * !Q)	0.00634	0.00617	0.00606

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00406	0.00391	0.00380
	(D * SCD * SCE * Q)	0.00623	0.00607	0.00596
	(D * SCD * SCE * !Q)	0.00704	0.00687	0.00667
	(D * SCD * SCE * !Q)	0.00921	0.00903	0.00883
	(D * !SCE * Q)	0.00406	0.00391	0.00380
	(D * !SCE * Q)	0.00623	0.00607	0.00596
	(D * !SCE * !Q)	0.00702	0.00684	0.00664
	(D * !SCE * !Q)	0.00919	0.00900	0.00881
	(D * !SCD * SCE * Q)	0.00796	0.00780	0.00774
	(D * !SCD * SCE * Q)	0.01014	0.00998	0.00989
	(D * !SCD * SCE * !Q)	0.00405	0.00389	0.00379
	(D * !SCD * SCE * !Q)	0.00622	0.00605	0.00595
	(!D * SCD * SCE * Q)	0.00406	0.00391	0.00380
	(!D * SCD * SCE * Q)	0.00623	0.00607	0.00596
	(!D * SCD * SCE * !Q)	0.00706	0.00689	0.00669
	(!D * SCD * SCE * !Q)	0.00922	0.00904	0.00885
	(!D * !SCE * Q)	0.00794	0.00779	0.00774
	(!D * !SCE * Q)	0.01011	0.00994	0.00987
	(!D * !SCE * !Q)	0.00405	0.00389	0.00379
	(!D * !SCE * !Q)	0.00622	0.00605	0.00595
	(!D * !SCD * SCE * Q)	0.00795	0.00780	0.00772
	(!D * !SCD * SCE * Q)	0.01013	0.00997	0.00985
	(!D * !SCD * SCE * !Q)	0.00405	0.00389	0.00379
	(!D * !SCD * SCE * !Q)	0.00622	0.00605	0.00595

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
GATE	SCE	CLK	GCLK
x	x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdlclkp_1	25.57440
sky130_fd_sc_hs__sdlclkp_2	27.17280
sky130_fd_sc_hs__sdlclkp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	GATE	SCE	CLK	GCLK
sky130_fd_sc_hs__sdlclkp_1	0.00215	0.00193	0.00419	0.18465
sky130_fd_sc_hs__sdlclkp_2	0.00214	0.00192	0.00445	0.37559
sky130_fd_sc_hs__sdlclkp_4	0.00202	0.00181	0.00453	0.73352

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	0.00033	0.00039
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.00037	0.00044
sky130_fd_sc_hs__sdlclkp_4	0.00000	0.00045	0.00050

Delay Information

Delay(ns) to GCLK rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (RR)**	0.27739	1.62870	9.63072
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (RR)**	0.26366	1.45561	9.87218
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (RR)**	0.32747	1.42002	10.24080

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (FF)**	0.41755	1.42581	7.03013
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (FF)**	0.51676	1.54346	7.56913
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (FF)**	0.75492	1.80916	8.25247

Constraint Information

Constraints(ns) for GATE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.14133	-0.31384	-1.59913
	setup	CLK (R)	0.58741	0.61001	1.77071
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.13571	-0.30994	-1.58869
	setup	CLK (R)	0.58088	0.58654	1.73229
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.14120	-0.31760	-1.61664
	setup	CLK (R)	0.57717	0.56619	1.73743

Constraints(ns) for GATE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-1.41479	-1.52261	-4.79964
	setup	CLK (R)	1.58173	1.73071	5.13339
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-1.39104	-1.50108	-4.80017
	setup	CLK (R)	1.54884	1.68811	5.01458
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-1.43525	-1.54436	-4.87873
	setup	CLK (R)	1.60290	1.69425	5.02953

Constraints(ns) for GATE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.14133	-0.31384	-1.59913
	setup	CLK (R)	0.58741	0.61001	1.77071
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.13571	-0.30994	-1.58869
	setup	CLK (R)	0.58088	0.58654	1.73229
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.14120	-0.31760	-1.61664
	setup	CLK (R)	0.57717	0.56619	1.73743

Constraints(ns) for GATE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-1.41479	-1.52261	-4.79964
	setup	CLK (R)	1.58173	1.73071	5.13339
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-1.39104	-1.50108	-4.80017
	setup	CLK (R)	1.54884	1.68811	5.01458
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-1.43525	-1.54436	-4.87873
	setup	CLK (R)	1.60290	1.69425	5.02953

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.14236	-0.31922	-1.64068
	setup	CLK (R)	0.59144	0.61616	1.81056
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.13743	-0.31760	-1.63103
	setup	CLK (R)	0.58545	0.58935	1.77457
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.14221	-0.32299	-1.65910
	setup	CLK (R)	0.58245	0.57254	1.77578

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-1.45289	-1.63623	-5.40785
	setup	CLK (R)	1.62281	1.85360	5.68689
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-1.43034	-1.61846	-5.39297
	setup	CLK (R)	1.58661	1.81025	5.56120
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-1.47365	-1.66244	-5.45508
	setup	CLK (R)	1.64179	1.81963	5.56752

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-0.14236	-0.31922	-1.64068
	setup	CLK (R)	0.59144	0.61616	1.81056
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.13743	-0.31760	-1.63103
	setup	CLK (R)	0.58545	0.58935	1.77457
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.14221	-0.32299	-1.65910
	setup	CLK (R)	0.58245	0.57254	1.77578

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	hold	CLK (R)	-1.45289	-1.63623	-5.40785
	setup	CLK (R)	1.62281	1.85360	5.68689
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-1.43034	-1.61846	-5.39297
	setup	CLK (R)	1.58661	1.81025	5.56120
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-1.47365	-1.66244	-5.45508
	setup	CLK (R)	1.64179	1.81963	5.56752

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	min_pulse_width	CLK ()	0.19014	1.45020	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.21080	1.45020	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.27793	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sdlclkp_1	min_pulse_width	CLK ()	1.02044	1.57846	16.50020
	min_pulse_width	CLK ()	1.39163	1.67206	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	1.00490	1.57153	16.50020
	min_pulse_width	CLK ()	1.36171	1.66859	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	1.01266	1.57499	16.50020
	min_pulse_width	CLK ()	1.35797	1.80726	16.50020

Power Information

Internal switching power(pJ) to GCLK rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.00854	0.00838	0.00827
	CLK	0.00516	0.00500	0.00489
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01025	0.01019	0.01009
	CLK	0.00667	0.00660	0.00651
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01338	0.01343	0.01346
	CLK	0.00971	0.00977	0.00980

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01025	0.01006	0.01008
	CLK	0.01342	0.01323	0.01315
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01142	0.01136	0.01255
	CLK	0.01478	0.01470	0.01468
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01479	0.01497	0.01506
	CLK	0.01825	0.01843	0.01848

Passive power(pJ) for GATE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00073	0.00073	0.00073
	(CLK * SCE)	-0.00046	-0.00046	-0.00046
	(CLK * !SCE)	0.00240	0.00230	0.00223
	(CLK * !SCE)	0.00063	0.00052	0.00046
	(!CLK * SCE * !GCLK)	0.00071	0.00071	0.00071
	(!CLK * SCE * !GCLK)	-0.00049	-0.00048	-0.00048
	(!CLK * !SCE * !GCLK)	0.00606	0.00598	0.00584
	(!CLK * !SCE * !GCLK)	0.00450	0.00441	0.00428
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00073	0.00073	0.00073
	(CLK * SCE)	-0.00046	-0.00046	-0.00046
	(CLK * !SCE)	0.00237	0.00227	0.00221
	(CLK * !SCE)	0.00061	0.00051	0.00045
	(!CLK * SCE * !GCLK)	0.00071	0.00071	0.00071
	(!CLK * SCE * !GCLK)	-0.00049	-0.00048	-0.00048
	(!CLK * !SCE * !GCLK)	0.00596	0.00587	0.00574
	(!CLK * !SCE * !GCLK)	0.00443	0.00434	0.00420
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00069	0.00070	0.00069
	(CLK * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCE)	0.00230	0.00220	0.00214
	(CLK * !SCE)	0.00062	0.00053	0.00047
	(!CLK * SCE * !GCLK)	0.00069	0.00068	0.00068
	(!CLK * SCE * !GCLK)	-0.00046	-0.00046	-0.00046
	(!CLK * !SCE * !GCLK)	0.00599	0.00590	0.00577
	(!CLK * !SCE * !GCLK)	0.00452	0.00444	0.00430

Passive power(pJ) for GATE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00072	-0.00072	-0.00073
	(CLK * SCE)	0.00048	0.00047	0.00046
	(CLK * !SCE)	0.00054	0.00046	0.00044
	(CLK * !SCE)	0.00231	0.00224	0.00221
	(!CLK * SCE * !GCLK)	-0.00069	-0.00070	-0.00071
	(!CLK * SCE * !GCLK)	0.00049	0.00049	0.00048
	(!CLK * !SCE * !GCLK)	0.00519	0.00510	0.00498
	(!CLK * !SCE * !GCLK)	0.00676	0.00666	0.00653
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00071	-0.00072	-0.00073
	(CLK * SCE)	0.00048	0.00047	0.00046
	(CLK * !SCE)	0.00056	0.00049	0.00046
	(CLK * !SCE)	0.00233	0.00225	0.00222
	(!CLK * SCE * !GCLK)	-0.00069	-0.00070	-0.00071
	(!CLK * SCE * !GCLK)	0.00049	0.00049	0.00048
	(!CLK * !SCE * !GCLK)	0.00522	0.00513	0.00503
	(!CLK * !SCE * !GCLK)	0.00677	0.00667	0.00656
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00068	-0.00068	-0.00069
	(CLK * SCE)	0.00046	0.00046	0.00045
	(CLK * !SCE)	0.00072	0.00064	0.00062
	(CLK * !SCE)	0.00239	0.00232	0.00229
	(!CLK * SCE * !GCLK)	-0.00066	-0.00067	-0.00068
	(!CLK * SCE * !GCLK)	0.00047	0.00047	0.00046
	(!CLK * !SCE * !GCLK)	0.00539	0.00530	0.00519
	(!CLK * !SCE * !GCLK)	0.00686	0.00676	0.00665

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00060	0.00060	0.00060
	(CLK * GATE)	-0.00071	-0.00072	-0.00072
	(CLK * !GATE)	0.00276	0.00270	0.00262
	(CLK * !GATE)	0.00082	0.00076	0.00069
	(!CLK * GATE * !GCLK)	0.00060	0.00060	0.00060
	(!CLK * GATE * !GCLK)	-0.00071	-0.00072	-0.00072
	(!CLK * !GATE * !GCLK)	0.00643	0.00636	0.00623
	(!CLK * !GATE * !GCLK)	0.00471	0.00463	0.00451
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00060	0.00060	0.00059
	(CLK * GATE)	-0.00071	-0.00072	-0.00072
	(CLK * !GATE)	0.00273	0.00267	0.00259
	(CLK * !GATE)	0.00081	0.00074	0.00068
	(!CLK * GATE * !GCLK)	0.00060	0.00060	0.00059
	(!CLK * GATE * !GCLK)	-0.00071	-0.00072	-0.00072
	(!CLK * !GATE * !GCLK)	0.00633	0.00626	0.00613
	(!CLK * !GATE * !GCLK)	0.00464	0.00456	0.00444
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00057	0.00057	0.00056
	(CLK * GATE)	-0.00070	-0.00071	-0.00070
	(CLK * !GATE)	0.00266	0.00261	0.00253
	(CLK * !GATE)	0.00083	0.00076	0.00070
	(!CLK * GATE * !GCLK)	0.00057	0.00057	0.00056
	(!CLK * GATE * !GCLK)	-0.00070	-0.00071	-0.00070
	(!CLK * !GATE * !GCLK)	0.00635	0.00629	0.00616
	(!CLK * !GATE * !GCLK)	0.00473	0.00466	0.00454

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00060	-0.00060	-0.00060
	(CLK * GATE)	0.00073	0.00072	0.00072
	(CLK * !GATE)	0.00055	0.00050	0.00049
	(CLK * !GATE)	0.00248	0.00243	0.00242
	(!CLK * GATE * !GCLK)	-0.00060	-0.00060	-0.00060
	(!CLK * GATE * !GCLK)	0.00072	0.00072	0.00072
	(!CLK * !GATE * !GCLK)	0.00518	0.00511	0.00493
	(!CLK * !GATE * !GCLK)	0.00691	0.00684	0.00661
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00059	-0.00059	-0.00059
	(CLK * GATE)	0.00072	0.00072	0.00072
	(CLK * !GATE)	0.00058	0.00052	0.00052
	(CLK * !GATE)	0.00249	0.00244	0.00243
	(!CLK * GATE * !GCLK)	-0.00059	-0.00059	-0.00059
	(!CLK * GATE * !GCLK)	0.00072	0.00072	0.00072
	(!CLK * !GATE * !GCLK)	0.00521	0.00514	0.00498
	(!CLK * !GATE * !GCLK)	0.00691	0.00685	0.00664
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00056	-0.00056	-0.00056
	(CLK * GATE)	0.00071	0.00071	0.00070
	(CLK * !GATE)	0.00073	0.00068	0.00068
	(CLK * !GATE)	0.00256	0.00252	0.00251
	(!CLK * GATE * !GCLK)	-0.00056	-0.00056	-0.00056
	(!CLK * GATE * !GCLK)	0.00071	0.00071	0.00070
	(!CLK * !GATE * !GCLK)	0.00538	0.00532	0.00514
	(!CLK * !GATE * !GCLK)	0.00701	0.00695	0.00673

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.00538	0.00520	0.00510
	(!GATE * !SCE * !GCLK)	0.00216	0.00200	0.00188
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.00544	0.00527	0.00516
	(!GATE * !SCE * !GCLK)	0.00203	0.00187	0.00175
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.00553	0.00536	0.00525
	(!GATE * !SCE * !GCLK)	0.00205	0.00187	0.00176

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.00624	0.00605	0.00586
	(GATE * SCE * !GCLK)	0.00971	0.00952	0.00933
	(GATE * !SCE * !GCLK)	0.00622	0.00604	0.00585
	(GATE * !SCE * !GCLK)	0.00969	0.00950	0.00933
	(!GATE * SCE * !GCLK)	0.00626	0.00607	0.00589
	(!GATE * SCE * !GCLK)	0.00972	0.00953	0.00935
	(!GATE * !SCE * !GCLK)	0.00247	0.00233	0.00225
	(!GATE * !SCE * !GCLK)	0.00568	0.00554	0.00547
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.00604	0.00584	0.00566
	(GATE * SCE * !GCLK)	0.00972	0.00953	0.00934
	(GATE * !SCE * !GCLK)	0.00602	0.00583	0.00565
	(GATE * !SCE * !GCLK)	0.00971	0.00952	0.00934
	(!GATE * SCE * !GCLK)	0.00606	0.00587	0.00568
	(!GATE * SCE * !GCLK)	0.00973	0.00954	0.00936
	(!GATE * !SCE * !GCLK)	0.00234	0.00220	0.00212
	(!GATE * !SCE * !GCLK)	0.00574	0.00560	0.00553
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.00627	0.00608	0.00589
	(GATE * SCE * !GCLK)	0.01001	0.00982	0.00964
	(GATE * !SCE * !GCLK)	0.00626	0.00607	0.00588
	(GATE * !SCE * !GCLK)	0.01000	0.00981	0.00963
	(!GATE * SCE * !GCLK)	0.00629	0.00610	0.00592
	(!GATE * SCE * !GCLK)	0.01002	0.00983	0.00965
	(!GATE * !SCE * !GCLK)	0.00247	0.00233	0.00225
	(!GATE * !SCE * !GCLK)	0.00594	0.00580	0.00574

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT	
D	DE	SCD	SCE	CLK	Q	Q_N
x	0	x	0	R	IQ	IQ_N
x	x	0	1	R	0	1
x	x	1	1	R	1	0
0	1	0	x	R	0	1
0	1	1	0	R	0	1
1	1	x	0	R	1	0
x	x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxbp_1	54.34560
sky130_fd_sc_hs__sedfxbp_2	57.54240

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	DE	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sedfxbp_1	0.00180	0.00341	0.00155	0.00347	0.00255	0.18900	0.18855
sky130_fd_sc_hs__sedfxbp_2	0.00190	0.00346	0.00157	0.00355	0.00256	0.35893	0.36127

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	0.00064	0.00073
sky130_fd_sc_hs__sedfxbp_2	0.00000	0.00071	0.00080

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RR)	0.82893	2.21844	10.31930
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.83406	2.05672	10.37670

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	1.04908	1.94794	4.95556
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	1.29808	2.20243	5.29749

Delay(ns) to Q_N rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q_N (RR)	1.51755	2.82073	10.85260
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	1.89395	2.97468	11.14090

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q_N (RF)	1.23929	2.00422	4.94110
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	1.40310	2.15517	5.12270

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.41653	-0.59098	-2.10584
	setup	CLK (R)	0.56390	0.68202	2.23577
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.42056	-0.59730	-2.11338
	setup	CLK (R)	0.56953	0.68621	2.23925

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-3.46332	-3.57172	-6.83669
	setup	CLK (R)	3.99171	4.09031	7.12209
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-3.44806	-3.56866	-6.83133
	setup	CLK (R)	3.96230	4.06379	7.10488

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.41653	-0.59098	-2.10584
	setup	CLK (R)	0.56390	0.68202	2.23577
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.42056	-0.59730	-2.11338
	setup	CLK (R)	0.56953	0.68621	2.23925

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-3.46332	-3.57172	-6.83669
	setup	CLK (R)	3.99171	4.09031	7.12209
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-3.44806	-3.56866	-6.83133
	setup	CLK (R)	3.96230	4.06379	7.10488

Constraints(ns) for DE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.15150	-0.15867	-0.37173
	setup	CLK (R)	4.09796	4.09241	3.79976
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14789	-0.15599	-0.37163
	setup	CLK (R)	4.06657	4.05704	3.75711

Constraints(ns) for DE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.75403	-1.05424	-4.67946
	setup	CLK (R)	3.52156	3.68333	7.23373
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.75442	-1.05297	-4.67567
	setup	CLK (R)	3.50999	3.68149	7.23379

Constraints(ns) for DE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.15150	-0.15867	-0.37173
	hold	CLK (R)	-0.80975	-0.94467	-1.59775
	setup	CLK (R)	0.56377	0.66041	2.18530
	setup	CLK (R)	4.09796	4.09241	3.79976
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.14789	-0.15599	-0.37163
	hold	CLK (R)	-0.80669	-0.95507	-1.59977
	setup	CLK (R)	0.56591	0.66417	2.18776
	setup	CLK (R)	4.06657	4.05704	3.75711

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-3.40950	-3.58592	-7.19520
	hold	CLK (R)	-0.75403	-1.05424	-4.67946
	setup	CLK (R)	3.52156	3.68333	7.23373
	setup	CLK (R)	0.83250	1.10018	4.73225
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-3.38408	-3.57740	-7.16297
	hold	CLK (R)	-0.75442	-1.05297	-4.67567
	setup	CLK (R)	3.50999	3.68149	7.23379
	setup	CLK (R)	0.82872	1.09802	4.72624

Constraints(ns) for SCD rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.22757	-0.37412	-1.64785
	setup	CLK (R)	0.32660	0.44618	1.78995
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.22999	-0.38159	-1.65767
	setup	CLK (R)	0.32707	0.44863	1.79397

Constraints(ns) for SCD falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-2.04235	-2.20654	-5.80407
	setup	CLK (R)	2.52771	2.69802	6.06842
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-2.03063	-2.20449	-5.79962
	setup	CLK (R)	2.49986	2.66642	6.04732

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.22757	-0.37412	-1.64785
	setup	CLK (R)	0.32660	0.44618	1.78995
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.22999	-0.38159	-1.65767
	setup	CLK (R)	0.32707	0.44863	1.79397

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-2.04235	-2.20654	-5.80407
	setup	CLK (R)	2.52771	2.69802	6.06842
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-2.03063	-2.20449	-5.79962
	setup	CLK (R)	2.49986	2.66642	6.04732

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.05747	0.00519	0.63334
	setup	CLK (R)	2.56010	2.54066	2.20420
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.05609	0.00733	0.63497
	setup	CLK (R)	2.54331	2.52231	2.21155

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.60545	-0.91037	-4.61343
	setup	CLK (R)	3.07820	3.18384	6.11194
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.62479	-0.92834	-4.66045
	setup	CLK (R)	3.05592	3.15714	6.08946

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-2.06559	-2.04630	-1.95739
	hold	CLK (R)	-0.05747	0.00519	0.63334
	hold	CLK (R)	-0.20150	-0.36481	-1.49046
	hold	CLK (R)	-0.58654	-0.70904	-1.16355
	setup	CLK (R)	2.55918	2.54050	2.20420
	setup	CLK (R)	0.30734	0.43663	1.65374
	setup	CLK (R)	0.30525	0.43939	1.65335
	setup	CLK (R)	2.56010	2.54066	2.20014
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-2.06708	-2.05833	-1.96987
	hold	CLK (R)	-0.05609	0.00733	0.63497
	hold	CLK (R)	-0.20707	-0.36765	-1.49471
	hold	CLK (R)	-0.59410	-0.72110	-1.22050
	setup	CLK (R)	2.53965	2.52211	2.21155
	setup	CLK (R)	0.30532	0.44005	1.65150
	setup	CLK (R)	0.30373	0.43908	1.65128
	setup	CLK (R)	2.54331	2.52231	2.21037

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	hold	CLK (R)	-0.61904	-0.92122	-4.63018
	hold	CLK (R)	-2.48524	-2.60063	-5.73927
	hold	CLK (R)	-2.49809	-2.61703	-5.76001
	hold	CLK (R)	-0.60545	-0.91037	-4.61343
	setup	CLK (R)	0.77354	1.01719	4.75015
	setup	CLK (R)	2.60221	2.69692	5.79765
	setup	CLK (R)	3.07820	3.18384	6.11194
	setup	CLK (R)	0.68677	0.95733	4.67046
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.63569	-0.94104	-4.67874
	hold	CLK (R)	-2.48296	-2.59852	-5.74770
	hold	CLK (R)	-2.49335	-2.60797	-5.74743
	hold	CLK (R)	-0.62479	-0.92834	-4.66045
	setup	CLK (R)	0.78992	1.03272	4.79300
	setup	CLK (R)	2.59928	2.69569	5.79088
	setup	CLK (R)	3.05592	3.15714	6.08946
	setup	CLK (R)	0.70100	0.97224	4.71505

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	min_pulse_width	CLK ()	0.37605	1.45020	16.50020
	min_pulse_width	CLK ()	0.37605	1.45020	16.50020
	min_pulse_width	CLK ()	0.87439	1.45020	16.50020
	min_pulse_width	CLK ()	0.37605	1.45020	16.50020
	min_pulse_width	CLK ()	0.87439	1.45020	16.50020
	min_pulse_width	CLK ()	0.37605	1.45020	16.50020
	min_pulse_width	CLK ()	0.87181	1.45020	16.50020
	min_pulse_width	CLK ()	0.87181	1.45020	16.50020
	min_pulse_width	CLK ()	0.37605	1.45020	16.50020
	min_pulse_width	CLK ()	0.87439	1.45020	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.38896	1.45020	16.50020
	min_pulse_width	CLK ()	0.38896	1.45020	16.50020
	min_pulse_width	CLK ()	1.23072	1.45020	16.50020
	min_pulse_width	CLK ()	0.38638	1.45020	16.50020
	min_pulse_width	CLK ()	1.23330	1.45020	16.50020
	min_pulse_width	CLK ()	0.38896	1.45020	16.50020
	min_pulse_width	CLK ()	1.22814	1.45020	16.50020
	min_pulse_width	CLK ()	1.22814	1.45020	16.50020
	min_pulse_width	CLK ()	0.38896	1.45020	16.50020
	min_pulse_width	CLK ()	1.23330	1.45020	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxbp_1	min_pulse_width	CLK ()	0.76333	1.64779	16.50020
	min_pulse_width	CLK ()	0.81405	1.66166	16.50020
	min_pulse_width	CLK ()	1.98617	2.16085	16.50020
	min_pulse_width	CLK ()	0.76333	1.64779	16.50020
	min_pulse_width	CLK ()	1.98617	2.16085	16.50020
	min_pulse_width	CLK ()	0.76333	1.64779	16.50020
	min_pulse_width	CLK ()	2.47607	2.65311	16.50020
	min_pulse_width	CLK ()	1.98617	2.16085	16.50020
	min_pulse_width	CLK ()	0.76333	1.64779	16.50020
	min_pulse_width	CLK ()	1.98617	2.16085	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.76180	1.65126	16.50020
	min_pulse_width	CLK ()	0.81704	1.66166	16.50020
	min_pulse_width	CLK ()	1.94036	2.11925	16.50020
	min_pulse_width	CLK ()	0.76180	1.65126	16.50020
	min_pulse_width	CLK ()	1.94036	2.11925	16.50020
	min_pulse_width	CLK ()	0.76180	1.65126	16.50020
	min_pulse_width	CLK ()	2.41660	2.59418	16.50020
	min_pulse_width	CLK ()	1.94036	2.11925	16.50020
	min_pulse_width	CLK ()	0.76180	1.65126	16.50020
	min_pulse_width	CLK ()	1.94036	2.11925	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00919	0.00917	0.00916
	CLK	0.00794	0.00792	0.00792
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01050	0.01057	0.01061
	CLK	0.00926	0.00933	0.00938

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00850	0.00844	0.00818
	CLK	0.00769	0.00763	0.00737
sky130_fd_sc_hs__sedfxbp_2	CLK	0.00980	0.00985	0.00956
	CLK	0.00898	0.00903	0.00874

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00851	0.00845	0.00838
	CLK	0.00770	0.00764	0.00757
sky130_fd_sc_hs__sedfxbp_2	CLK	0.00981	0.00986	0.00987
	CLK	0.00899	0.00903	0.00906

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.00916	0.00913	0.00897
	CLK	0.00791	0.00789	0.00772
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01047	0.01054	0.01032
	CLK	0.00923	0.00931	0.00909

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00251	0.00243	0.00237
	(DE * SCE)	0.00097	0.00088	0.00084
	(CLK * DE * !SCE)	0.00515	0.00511	0.00503
	(CLK * DE * !SCE)	0.00321	0.00317	0.00310
	(CLK * !DE * !SCE)	0.00056	0.00057	0.00056
	(CLK * !DE * !SCE)	-0.00048	-0.00049	-0.00048
	(!DE * SCE)	0.00056	0.00056	0.00056
	(!DE * SCE)	-0.00048	-0.00048	-0.00048
	(!CLK * DE * !SCE * Q * !Q_N)	0.00891	0.00887	0.00878
	(!CLK * DE * !SCE * Q * !Q_N)	0.00697	0.00694	0.00684
	(!CLK * DE * !SCE * !Q * Q_N)	0.00864	0.00860	0.00849
	(!CLK * DE * !SCE * !Q * Q_N)	0.00669	0.00665	0.00654
	(!CLK * !DE * !SCE)	0.00056	0.00057	0.00056
	(!CLK * !DE * !SCE)	-0.00048	-0.00049	-0.00048
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00255	0.00246	0.00241
	(DE * SCE)	0.00094	0.00086	0.00080
	(CLK * DE * !SCE)	0.00525	0.00520	0.00513
	(CLK * DE * !SCE)	0.00323	0.00318	0.00312
	(CLK * !DE * !SCE)	0.00059	0.00060	0.00059
	(CLK * !DE * !SCE)	-0.00050	-0.00051	-0.00050
	(!DE * SCE)	0.00059	0.00059	0.00059
	(!DE * SCE)	-0.00050	-0.00050	-0.00050
	(!CLK * DE * !SCE * Q * !Q_N)	0.00896	0.00891	0.00883
	(!CLK * DE * !SCE * Q * !Q_N)	0.00694	0.00690	0.00681
	(!CLK * DE * !SCE * !Q * Q_N)	0.00867	0.00863	0.00853
	(!CLK * DE * !SCE * !Q * Q_N)	0.00664	0.00661	0.00650
	(!CLK * !DE * !SCE)	0.00059	0.00060	0.00059
	(!CLK * !DE * !SCE)	-0.00050	-0.00051	-0.00050

Passive power(pJ) for D falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00091	0.00082	0.00081
	(DE * SCE)	0.00246	0.00238	0.00237
	(CLK * DE * !SCE)	0.00177	0.00167	0.00158
	(CLK * DE * !SCE)	0.00371	0.00362	0.00348
	(CLK * !DE * !SCE)	-0.00020	-0.00020	-0.00020
	(CLK * !DE * !SCE)	0.00085	0.00085	0.00085
	(!DE * SCE)	-0.00020	-0.00020	-0.00020
	(!DE * SCE)	0.00085	0.00085	0.00085
	(!CLK * DE * !SCE * Q * !Q_N)	0.00516	0.00506	0.00184
	(!CLK * DE * !SCE * Q * !Q_N)	0.00710	0.00701	0.00364
	(!CLK * DE * !SCE * !Q * Q_N)	0.00546	0.00538	0.00213
	(!CLK * DE * !SCE * !Q * Q_N)	0.00742	0.00733	0.00394
	(!CLK * !DE * !SCE)	-0.00020	-0.00020	-0.00020
	(!CLK * !DE * !SCE)	0.00085	0.00085	0.00084
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00078	0.00069	0.00068
	(DE * SCE)	0.00240	0.00231	0.00230
	(CLK * DE * !SCE)	0.00169	0.00159	0.00149
	(CLK * DE * !SCE)	0.00371	0.00362	0.00347
	(CLK * !DE * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK * !DE * !SCE)	0.00090	0.00089	0.00089
	(!DE * SCE)	-0.00021	-0.00021	-0.00021
	(!DE * SCE)	0.00090	0.00089	0.00089
	(!CLK * DE * !SCE * Q * !Q_N)	0.00505	0.00495	0.00173
	(!CLK * DE * !SCE * Q * !Q_N)	0.00707	0.00697	0.00362
	(!CLK * DE * !SCE * !Q * Q_N)	0.00536	0.00527	0.00203
	(!CLK * DE * !SCE * !Q * Q_N)	0.00740	0.00731	0.00393
	(!CLK * !DE * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK * !DE * !SCE)	0.00090	0.00089	0.00088

Passive power(pJ) for DE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00415	0.00399	0.00390
	SCE	0.00189	0.00172	0.00163
	(CLK * !SCE)	0.00707	0.00694	0.00684
	(CLK * !SCE)	0.00337	0.00322	0.00312
	(!CLK * D * !SCE * Q * !Q_N)	0.00277	0.00267	0.00261
	(!CLK * D * !SCE * Q * !Q_N)	-0.00001	-0.00012	-0.00017
	(!CLK * D * !SCE * !Q * Q_N)	0.01084	0.01071	0.01058
	(!CLK * D * !SCE * !Q * Q_N)	0.00714	0.00700	0.00687
	(!CLK * !D * !SCE * Q * !Q_N)	0.00857	0.00844	0.00833
	(!CLK * !D * !SCE * Q * !Q_N)	0.00672	0.00657	0.00644
	(!CLK * !D * !SCE * !Q * Q_N)	0.00281	0.00271	0.00265
	(!CLK * !D * !SCE * !Q * Q_N)	0.00005	-0.00006	-0.00010
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00406	0.00390	0.00381
	SCE	0.00176	0.00159	0.00151
	(CLK * !SCE)	0.00715	0.00702	0.00691
	(CLK * !SCE)	0.00337	0.00323	0.00313
	(!CLK * D * !SCE * Q * !Q_N)	0.00276	0.00266	0.00260
	(!CLK * D * !SCE * Q * !Q_N)	-0.00007	-0.00018	-0.00023
	(!CLK * D * !SCE * !Q * Q_N)	0.01084	0.01070	0.01058
	(!CLK * D * !SCE * !Q * Q_N)	0.00706	0.00691	0.00679
	(!CLK * !D * !SCE * Q * !Q_N)	0.00848	0.00836	0.00824
	(!CLK * !D * !SCE * Q * !Q_N)	0.00660	0.00646	0.00634
	(!CLK * !D * !SCE * !Q * Q_N)	0.00281	0.00271	0.00265
	(!CLK * !D * !SCE * !Q * Q_N)	0.00001	-0.00010	-0.00015

Passive power(pJ) for DE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00243	0.00232	0.00223
	SCE	0.00470	0.00458	0.00451
	(CLK * !SCE)	0.00506	0.00496	0.00488
	(CLK * !SCE)	0.00693	0.00683	0.00676
	(!CLK * D * !SCE * Q * !Q_N)	-0.00001	-0.00010	-0.00013
	(!CLK * D * !SCE * Q * !Q_N)	0.00275	0.00267	0.00264
	(!CLK * D * !SCE * !Q * Q_N)	0.00588	0.00575	0.00232
	(!CLK * D * !SCE * !Q * Q_N)	0.00959	0.00946	0.00587
	(!CLK * !D * !SCE * Q * !Q_N)	0.00882	0.00872	0.00864
	(!CLK * !D * !SCE * Q * !Q_N)	0.01069	0.01059	0.01053
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00006	-0.00015	-0.00018
	(!CLK * !D * !SCE * !Q * Q_N)	0.00270	0.00261	0.00257
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00241	0.00230	0.00221
	SCE	0.00471	0.00459	0.00451
	(CLK * !SCE)	0.00509	0.00501	0.00492
	(CLK * !SCE)	0.00698	0.00688	0.00682
	(!CLK * D * !SCE * Q * !Q_N)	-0.00003	-0.00012	-0.00015
	(!CLK * D * !SCE * Q * !Q_N)	0.00278	0.00270	0.00267
	(!CLK * D * !SCE * !Q * Q_N)	0.00577	0.00564	0.00223
	(!CLK * D * !SCE * !Q * Q_N)	0.00956	0.00943	0.00585
	(!CLK * !D * !SCE * Q * !Q_N)	0.00880	0.00871	0.00863
	(!CLK * !D * !SCE * Q * !Q_N)	0.01069	0.01059	0.01053
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00010	-0.00019	-0.00022
	(!CLK * !D * !SCE * !Q * Q_N)	0.00271	0.00261	0.00258

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00275	0.00271	0.00267
	(CLK * SCE)	0.00121	0.00117	0.00113
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00653	0.00649	0.00641
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00499	0.00495	0.00487
	!SCE	0.00044	0.00044	0.00044
	!SCE	-0.00061	-0.00062	-0.00061
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00281	0.00278	0.00273
	(CLK * SCE)	0.00123	0.00120	0.00116
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00651	0.00647	0.00639
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00493	0.00489	0.00481
	!SCE	0.00044	0.00044	0.00044
	!SCE	-0.00064	-0.00064	-0.00064

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00147	0.00142	0.00141
	(CLK * SCE)	0.00301	0.00297	0.00294
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00519	0.00514	0.00452
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00673	0.00669	0.00601
	!SCE	-0.00044	-0.00044	-0.00044
	!SCE	0.00062	0.00062	0.00061
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00145	0.00141	0.00139
	(CLK * SCE)	0.00303	0.00299	0.00296
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00515	0.00510	0.00450
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00673	0.00669	0.00604
	!SCE	-0.00043	-0.00044	-0.00044
	!SCE	0.00065	0.00065	0.00064

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D)	0.00466	0.00453	0.00437
	(CLK * D)	0.00255	0.00240	0.00224
	(CLK * !D)	0.00467	0.00453	0.00437
	(CLK * !D)	0.00255	0.00240	0.00224
	(!CLK * D * SCD * Q * !Q_N)	0.00257	0.00250	0.00245
	(!CLK * D * SCD * Q * !Q_N)	0.00005	-0.00004	-0.00009
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00247	0.00240	0.00235
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00005	-0.00015	-0.00019
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00831	0.00826	0.00810
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00620	0.00613	0.00597
	(!CLK * D * !SCD * Q * !Q_N)	0.00832	0.00827	0.00812
	(!CLK * D * !SCD * Q * !Q_N)	0.00622	0.00614	0.00598
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00821	0.00808	0.00793
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00529	0.00515	0.00500
sky130_fd_sc_hs__sedfxbp_1	**(!CLK * D * !DE * !SCD * !Q * Q_N)**	0.00277	0.00268	0.00264
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00026	0.00017	0.00012
	(!CLK * !D * SCD * !Q * Q_N)	0.00821	0.00808	0.00793
	(!CLK * !D * SCD * !Q * Q_N)	0.00528	0.00515	0.00500
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00840	0.00827	0.00812
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00547	0.00534	0.00519
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00287	0.00278	0.00274
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00036	0.00027	0.00022
	(!CLK * !D * !SCD * !Q * Q_N)	0.00277	0.00268	0.00264
	(!CLK * !D * !SCD * !Q * Q_N)	0.00026	0.00017	0.00012
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00257	0.00250	0.00245
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00005	-0.00004	-0.00009
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00833	0.00827	0.00811
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00622	0.00614	0.00598

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00475	0.00461	0.00445
	(CLK * D)	0.00258	0.00243	0.00226
	(CLK * !D)	0.00476	0.00461	0.00445
	(CLK * !D)	0.00259	0.00243	0.00225
	(!CLK * D * SCD * Q * !Q_N)	0.00262	0.00255	0.00249
	(!CLK * D * SCD * Q * !Q_N)	0.00002	-0.00008	-0.00012
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00253	0.00246	0.00240
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00007	-0.00017	-0.00021
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00839	0.00833	0.00816
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00621	0.00614	0.00597
	(!CLK * D * !SCD * Q * !Q_N)	0.00837	0.00830	0.00813
	(!CLK * D * !SCD * Q * !Q_N)	0.00619	0.00611	0.00594
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00820	0.00806	0.00791
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00517	0.00504	0.00489
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00286	0.00278	0.00273
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00027	0.00017	0.00013
	(!CLK * !D * SCD * !Q * Q_N)	0.00820	0.00805	0.00791
	(!CLK * !D * SCD * !Q * Q_N)	0.00517	0.00504	0.00488
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00840	0.00826	0.00812
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00538	0.00525	0.00509
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00295	0.00286	0.00282
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00036	0.00027	0.00022
	(!CLK * !D * !SCD * !Q * Q_N)	0.00286	0.00278	0.00273
	(!CLK * !D * !SCD * !Q * Q_N)	0.00027	0.00017	0.00013
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00262	0.00255	0.00249
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00002	-0.00008	-0.00012
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00837	0.00830	0.00813
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00620	0.00611	0.00594

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D)	0.00276	0.00285	0.00296
	(CLK * D)	0.00489	0.00497	0.00509
	(CLK * !D)	0.00276	0.00285	0.00296
	(CLK * !D)	0.00489	0.00497	0.00509
	(!CLK * D * SCD * Q * !Q_N)	0.00009	0.00002	0.00000
	(!CLK * D * SCD * Q * !Q_N)	0.00261	0.00256	0.00254
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00019	0.00012	0.00010
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00271	0.00266	0.00264
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00650	0.00658	0.00669
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00864	0.00871	0.00881
	(!CLK * D * !SCD * Q * !Q_N)	0.00649	0.00656	0.00666
	(!CLK * D * !SCD * Q * !Q_N)	0.00862	0.00869	0.00879
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00455	0.00439	0.00360
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00748	0.00732	0.00643
sky130_fd_sc_hs__sedfxbp_1	**(!CLK * D * !DE * !SCD * !Q * Q_N)**	-0.00010	-0.00016	-0.00019
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00241	0.00236	0.00233
	(!CLK * !D * SCD * !Q * Q_N)	0.00455	0.00439	0.00356
	(!CLK * !D * SCD * !Q * Q_N)	0.00748	0.00732	0.00637
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00436	0.00421	0.00341
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00730	0.00713	0.00623
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00020	-0.00026	-0.00028
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00231	0.00226	0.00223
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00010	-0.00016	-0.00019
	(!CLK * !D * !SCD * !Q * Q_N)	0.00241	0.00236	0.00233
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00009	0.00002	0.00000
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00261	0.00256	0.00254
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00649	0.00657	0.00667
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00862	0.00869	0.00880

	(CLK * D)	0.00288	0.00297	0.00309
	(CLK * D)	0.00507	0.00516	0.00527
	(CLK * !D)	0.00288	0.00297	0.00308
	(CLK * !D)	0.00507	0.00515	0.00527
	(!CLK * D * SCD * Q * !Q_N)	0.00014	0.00007	0.00005
	(!CLK * D * SCD * Q * !Q_N)	0.00274	0.00269	0.00266
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00023	0.00016	0.00015
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00283	0.00278	0.00275
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00653	0.00661	0.00672
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00873	0.00880	0.00891
	(!CLK * D * !SCD * Q * !Q_N)	0.00656	0.00664	0.00675
	(!CLK * D * !SCD * Q * !Q_N)	0.00875	0.00882	0.00893
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00455	0.00439	0.00363
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00758	0.00741	0.00655
sky130_fd_sc_hs__sedfxbp_2	**(!CLK * D * !DE * !SCD * !Q * Q_N)**	-0.00008	-0.00015	-0.00018
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00250	0.00245	0.00242
	(!CLK * !D * SCD * !Q * Q_N)	0.00455	0.00439	0.00359
	(!CLK * !D * SCD * !Q * Q_N)	0.00758	0.00741	0.00650
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00434	0.00418	0.00344
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00737	0.00721	0.00635
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00017	-0.00024	-0.00027
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00241	0.00236	0.00233
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00008	-0.00015	-0.00018
	(!CLK * !D * !SCD * !Q * Q_N)	0.00250	0.00245	0.00242
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00014	0.00007	0.00005
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00274	0.00269	0.00266
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00656	0.00664	0.00674
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00875	0.00882	0.00893

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(SCD * SCE * Q * !Q_N)	0.00762	0.00742	0.00729
	(SCD * SCE * Q * !Q_N)	0.00554	0.00533	0.00521
	(D * !SCE * Q * !Q_N)	0.00762	0.00742	0.00729
	(D * !SCE * Q * !Q_N)	0.00554	0.00533	0.00520
	(D * !DE * !SCE * !Q * Q_N)	0.00752	0.00730	0.00717
	(D * !DE * !SCE * !Q * Q_N)	0.00544	0.00521	0.00508
	(!SCD * SCE * !Q * Q_N)	0.00752	0.00730	0.00717
	(!SCD * SCE * !Q * Q_N)	0.00544	0.00521	0.00508
	(!D * !SCE * !Q * Q_N)	0.00752	0.00730	0.00717
	(!D * !SCE * !Q * Q_N)	0.00544	0.00521	0.00508
	(!D * !DE * !SCE * Q * !Q_N)	0.00762	0.00742	0.00729
	(!D * !DE * !SCE * Q * !Q_N)	0.00554	0.00533	0.00520
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.00758	0.00737	0.00724
	(SCD * SCE * Q * !Q_N)	0.00550	0.00529	0.00516
	(D * !SCE * Q * !Q_N)	0.00757	0.00736	0.00724
	(D * !SCE * Q * !Q_N)	0.00549	0.00528	0.00515
	(D * !DE * !SCE * !Q * Q_N)	0.00753	0.00731	0.00718
	(D * !DE * !SCE * !Q * Q_N)	0.00545	0.00522	0.00509
	(!SCD * SCE * !Q * Q_N)	0.00754	0.00732	0.00719
	(!SCD * SCE * !Q * Q_N)	0.00546	0.00523	0.00510
	(!D * !SCE * !Q * Q_N)	0.00753	0.00731	0.00718
	(!D * !SCE * !Q * Q_N)	0.00545	0.00523	0.00509
	(!D * !DE * !SCE * Q * !Q_N)	0.00757	0.00736	0.00723
	(!D * !DE * !SCE * Q * !Q_N)	0.00549	0.00528	0.00515

Passive power(pJ) for CLK falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(SCD * SCE * Q * !Q_N)	0.00421	0.00406	0.00394
	(SCD * SCE * Q * !Q_N)	0.00630	0.00615	0.00603
	(SCD * SCE * !Q * Q_N)	0.00801	0.00786	0.00766
	(SCD * SCE * !Q * Q_N)	0.01012	0.00995	0.00974
	(D * DE * !SCE * !Q * Q_N)	0.00799	0.00783	0.00764
	(D * DE * !SCE * !Q * Q_N)	0.01009	0.00992	0.00973
	(D * !SCE * Q * !Q_N)	0.00421	0.00406	0.00395
	(D * !SCE * Q * !Q_N)	0.00631	0.00616	0.00604
	(D * !DE * !SCE * !Q * Q_N)	0.00416	0.00402	0.00390
	(D * !DE * !SCE * !Q * Q_N)	0.00627	0.00611	0.00599
	(!SCD * SCE * Q * !Q_N)	0.00859	0.00840	0.00835
	(!SCD * SCE * Q * !Q_N)	0.01069	0.01050	0.01043
	(!SCD * SCE * !Q * Q_N)	0.00416	0.00401	0.00390
	(!SCD * SCE * !Q * Q_N)	0.00626	0.00610	0.00599
	(!D * DE * !SCE * Q * !Q_N)	0.00860	0.00840	0.00804
	(!D * DE * !SCE * Q * !Q_N)	0.01069	0.01050	0.01002
	(!D * !SCE * !Q * Q_N)	0.00416	0.00402	0.00390
	(!D * !SCE * !Q * Q_N)	0.00627	0.00611	0.00598
	(!D * !DE * !SCE * Q * !Q_N)	0.00421	0.00406	0.00395
	(!D * !DE * !SCE * Q * !Q_N)	0.00631	0.00616	0.00604

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00428	0.00414	0.00402
	(SCD * SCE * Q * !Q_N)	0.00638	0.00622	0.00610
	(SCD * SCE * !Q * Q_N)	0.00794	0.00779	0.00759
	(SCD * SCE * !Q * Q_N)	0.01003	0.00987	0.00967
	(D * DE * !SCE * !Q * Q_N)	0.00792	0.00777	0.00758
	(D * DE * !SCE * !Q * Q_N)	0.01001	0.00985	0.00966
	(D * !SCE * Q * !Q_N)	0.00428	0.00414	0.00403
	(D * !SCE * Q * !Q_N)	0.00639	0.00623	0.00611
	(D * !DE * !SCE * !Q * Q_N)	0.00418	0.00403	0.00392
	(D * !DE * !SCE * !Q * Q_N)	0.00627	0.00612	0.00600
	(!SCD * SCE * Q * !Q_N)	0.00863	0.00848	0.00841
	(!SCD * SCE * Q * !Q_N)	0.01074	0.01058	0.01048
	(!SCD * SCE * !Q * Q_N)	0.00416	0.00402	0.00391
	(!SCD * SCE * !Q * Q_N)	0.00626	0.00611	0.00600
	(!D * DE * !SCE * Q * !Q_N)	0.00865	0.00850	0.00812
	(!D * DE * !SCE * Q * !Q_N)	0.01075	0.01059	0.01010
	(!D * !SCE * !Q * Q_N)	0.00418	0.00403	0.00392
	(!D * !SCE * !Q * Q_N)	0.00627	0.00612	0.00600
	(!D * !DE * !SCE * Q * !Q_N)	0.00428	0.00414	0.00403
	(!D * !DE * !SCE * Q * !Q_N)	0.00639	0.00623	0.00611

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT					OUTPUT
D	DE	SCD	SCE	CLK	Q
x	0	x	0	R	IQ
x	x	0	1	R	0
x	x	1	1	R	1
0	1	0	x	R	0
0	1	1	0	R	0
1	1	x	0	R	1
x	x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxtp_1	51.14880
sky130_fd_sc_hs__sedfxtp_2	54.34560
sky130_fd_sc_hs__sedfxtp_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	DE	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sedfxtp_1	0.00182	0.00348	0.00159	0.00343	0.00254	0.18858
sky130_fd_sc_hs__sedfxtp_2	0.00191	0.00351	0.00161	0.00348	0.00256	0.37588
sky130_fd_sc_hs__sedfxtp_4	0.00192	0.00349	0.00161	0.00345	0.00266	0.72063

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	0.00060	0.00070
sky130_fd_sc_hs__sedfxtp_2	0.00000	0.00064	0.00074
sky130_fd_sc_hs__sedfxtp_4	0.00000	0.00072	0.00082

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RR)**	0.81642	2.19940	10.27790
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.81974	2.03636	10.34960
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.88848	1.96175	10.30870

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.97919	1.83133	4.78889
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	1.21536	2.10093	5.18986
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	1.70518	2.62298	5.88843

Constraint Information

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.41639	-0.59366	-2.11505
	setup	CLK (R)	0.56274	0.68424	2.24888
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.42261	-0.59618	-2.11879
	setup	CLK (R)	0.57147	0.68715	2.25296
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.42294	-0.59874	-2.12761
	setup	CLK (R)	0.56611	0.68292	2.25424

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-3.45580	-3.56854	-6.84133
	setup	CLK (R)	3.97441	4.07408	7.12438
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-3.45625	-3.56972	-6.84139
	setup	CLK (R)	3.97488	4.06970	7.12044
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-3.48693	-3.59480	-6.87404
	setup	CLK (R)	3.96945	4.06559	7.10754

Constraints(ns) for DE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.14248	-0.15441	-0.36914
	setup	CLK (R)	4.07881	4.07421	3.79560
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14890	-0.15925	-0.36965
	setup	CLK (R)	4.06748	4.06296	3.79031
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.13824	-0.14959	-0.37000
	setup	CLK (R)	4.06436	4.05768	3.78080

Constraints(ns) for DE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.75928	-1.06256	-4.70068
	setup	CLK (R)	3.51758	3.68904	7.23580
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.76296	-1.06570	-4.69743
	setup	CLK (R)	3.52634	3.68960	7.23257
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.76748	-1.06533	-4.69801
	setup	CLK (R)	3.54737	3.71693	7.25187

Constraints(ns) for DE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.14248	-0.15441	-0.36914
	hold	CLK (R)	-0.79856	-0.95119	-1.65144
	setup	CLK (R)	0.56044	0.66057	2.19802
	setup	CLK (R)	4.07881	4.07421	3.79560
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.14890	-0.15925	-0.36965
	hold	CLK (R)	-0.79972	-0.94373	-1.59810
	setup	CLK (R)	0.56633	0.66555	2.19989
	setup	CLK (R)	4.06748	4.06296	3.79031
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.13824	-0.14959	-0.37000
	hold	CLK (R)	-0.80091	-0.95276	-1.62050
	setup	CLK (R)	0.56231	0.65979	2.19982
	setup	CLK (R)	4.06436	4.05768	3.78080

Constraints(ns) for DE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-3.40350	-3.58853	-7.20218
	hold	CLK (R)	-0.75928	-1.06256	-4.70068
	setup	CLK (R)	3.51758	3.68904	7.23580
	setup	CLK (R)	0.83599	1.10923	4.74845
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-3.40386	-3.58660	-7.20068
	hold	CLK (R)	-0.76296	-1.06570	-4.69743
	setup	CLK (R)	3.52634	3.68960	7.23257
	setup	CLK (R)	0.83945	1.10837	4.74775
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-3.43492	-3.61793	-7.21271
	hold	CLK (R)	-0.76748	-1.06533	-4.69801
	setup	CLK (R)	3.54737	3.71693	7.25187
	setup	CLK (R)	0.83543	1.10523	4.74092

Constraints(ns) for SCD rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.22579	-0.38008	-1.66618
	setup	CLK (R)	0.32500	0.44663	1.81001
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.22839	-0.38139	-1.66589
	setup	CLK (R)	0.32995	0.44889	1.80441
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.23192	-0.38449	-1.68118
	setup	CLK (R)	0.32610	0.44444	1.81564

Constraints(ns) for SCD falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-2.05285	-2.21828	-5.82085
	setup	CLK (R)	2.52838	2.70058	6.08489
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-2.03551	-2.20526	-5.80204
	setup	CLK (R)	2.51032	2.67608	6.05614
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-2.06868	-2.23761	-5.84398
	setup	CLK (R)	2.50842	2.66998	6.06720

Constraints(ns) for SCE rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.04902	0.00748	0.63870
	setup	CLK (R)	2.57694	2.56169	2.24735
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.05881	0.00987	0.64350
	setup	CLK (R)	2.55244	2.53255	2.22493
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.04275	0.01119	0.63030
	setup	CLK (R)	2.55191	2.52468	2.23507

Constraints(ns) for SCE falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.61945	-0.92408	-4.66409
	setup	CLK (R)	3.07083	3.17508	6.12617
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.62258	-0.92728	-4.66097
	setup	CLK (R)	3.05039	3.15163	6.09477
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.62255	-0.92557	-4.66253
	setup	CLK (R)	3.06203	3.15998	6.11307

Constraints(ns) for SCE rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-2.09609	-2.07900	-1.99891
	hold	CLK (R)	-0.04902	0.00748	0.63870
	hold	CLK (R)	-0.20330	-0.36727	-1.50196
	hold	CLK (R)	-0.59654	-0.73244	-1.21976
	setup	CLK (R)	2.57511	2.56010	2.24735
	setup	CLK (R)	0.30049	0.43954	1.66556
	setup	CLK (R)	0.30288	0.43779	1.66539
	setup	CLK (R)	2.57694	2.56169	2.24686
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-2.07461	-2.06081	-1.98345
	hold	CLK (R)	-0.05881	0.00987	0.64350
	hold	CLK (R)	-0.20480	-0.36882	-1.49947
	hold	CLK (R)	-0.59550	-0.71592	-1.19720
	setup	CLK (R)	2.54894	2.53164	2.22493
	setup	CLK (R)	0.30677	0.43976	1.66237
	setup	CLK (R)	0.30623	0.43908	1.66109
	setup	CLK (R)	2.55244	2.53255	2.22099
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-2.11022	-2.09184	-2.02017
	hold	CLK (R)	-0.04275	0.01119	0.63030
	hold	CLK (R)	-0.20530	-0.37147	-1.52172
	hold	CLK (R)	-0.60245	-0.73731	-1.25030
	setup	CLK (R)	2.55191	2.52363	2.23507
	setup	CLK (R)	0.30197	0.43905	1.67464
	setup	CLK (R)	0.30284	0.43883	1.67481
	setup	CLK (R)	2.55016	2.52468	2.23168

Constraints(ns) for SCE falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	hold	CLK (R)	-0.63068	-0.93548	-4.68145
	hold	CLK (R)	-2.49545	-2.61019	-5.77093
	hold	CLK (R)	-2.50621	-2.61718	-5.77035
	hold	CLK (R)	-0.61945	-0.92408	-4.66409
	setup	CLK (R)	0.78155	1.02689	4.80225
	setup	CLK (R)	2.60464	2.71426	5.81111
	setup	CLK (R)	3.07083	3.17508	6.12617
	setup	CLK (R)	0.69320	0.97164	4.71858
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.63105	-0.93720	-4.68048
	hold	CLK (R)	-2.47728	-2.59275	-5.75053
	hold	CLK (R)	-2.48729	-2.60423	-5.75035
	hold	CLK (R)	-0.62258	-0.92728	-4.66097
	setup	CLK (R)	0.78643	1.03271	4.79769
	setup	CLK (R)	2.59455	2.68861	5.77942
	setup	CLK (R)	3.05039	3.15163	6.09477
	setup	CLK (R)	0.69715	0.97155	4.71856
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.63330	-0.93977	-4.68390
	hold	CLK (R)	-2.52385	-2.63817	-5.79920
	hold	CLK (R)	-2.53544	-2.64845	-5.80059
	hold	CLK (R)	-0.62255	-0.92557	-4.66253
	setup	CLK (R)	0.78071	1.02631	4.79274
	setup	CLK (R)	2.63625	2.73419	5.84941
	setup	CLK (R)	3.06203	3.15998	6.11307
	setup	CLK (R)	0.69591	0.97032	4.71508

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**min_pulse_width**	**CLK ()**	0.37347	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.37347	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.79951	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.37347	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.79951	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.37347	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.79435	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.79435	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.37347	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.79951	1.45020	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.38380	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.38380	1.45020	16.50020
	min_pulse_width	**CLK ()**	1.13776	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.38380	1.45020	16.50020
	min_pulse_width	**CLK ()**	1.14035	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.38380	1.45020	16.50020
	min_pulse_width	**CLK ()**	1.13260	1.45020	16.50020
	min_pulse_width	**CLK ()**	1.13260	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.38380	1.45020	16.50020
	min_pulse_width	**CLK ()**	1.14035	1.45020	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.40187	1.45020	16.50020
	min_pulse_width	**CLK ()**	0.40446	1.45020	16.50020
	min_pulse_width	**CLK ()**	1.74904	1.56806	16.50020
	min_pulse_width	**CLK ()**	0.40187	1.45020	16.50020
	min_pulse_width	**CLK ()**	1.74904	1.56806	16.50020
	min_pulse_width	**CLK ()**	0.40187	1.45020	16.50020
	min_pulse_width	**CLK ()**	1.74247	1.56113	16.50020
	min_pulse_width	**CLK ()**	1.74247	1.56113	16.50020
	min_pulse_width	**CLK ()**	0.40187	1.45020	16.50020
	min_pulse_width	**CLK ()**	1.74904	1.56806	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
sky130_fd_sc_hs__sedfxtp_1	min_pulse_width	CLK ()	0.75299	1.64433	16.50020
	min_pulse_width	CLK ()	0.80652	1.65819	16.50020
	min_pulse_width	CLK ()	1.95222	2.13658	16.50020
	min_pulse_width	CLK ()	0.75299	1.64433	16.50020
	min_pulse_width	CLK ()	1.95614	2.13658	16.50020
	min_pulse_width	CLK ()	0.75299	1.64433	16.50020
	min_pulse_width	CLK ()	2.42849	2.61151	16.50020
	min_pulse_width	CLK ()	1.95614	2.13658	16.50020
	min_pulse_width	CLK ()	0.75299	1.64433	16.50020
	min_pulse_width	CLK ()	1.95222	2.13658	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.75892	1.64433	16.50020
	min_pulse_width	CLK ()	0.81250	1.65819	16.50020
	min_pulse_width	CLK ()	1.94352	2.12272	16.50020
	min_pulse_width	CLK ()	0.75892	1.64433	16.50020
	min_pulse_width	CLK ()	1.94352	2.12272	16.50020
	min_pulse_width	CLK ()	0.75892	1.64433	16.50020
	min_pulse_width	CLK ()	2.41422	2.59418	16.50020
	min_pulse_width	CLK ()	1.94352	2.12272	16.50020
	min_pulse_width	CLK ()	0.75739	1.64779	16.50020
	min_pulse_width	CLK ()	1.94352	2.12272	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.74566	1.64086	16.50020
	min_pulse_width	**CLK ()**	0.79750	1.65126	16.50020
	min_pulse_width	**CLK ()**	1.89111	2.05685	16.50020
	min_pulse_width	**CLK ()**	0.74566	1.64086	16.50020
	min_pulse_width	**CLK ()**	1.89111	2.05685	16.50020
	min_pulse_width	**CLK ()**	0.74566	1.64086	16.50020
	min_pulse_width	**CLK ()**	2.35165	2.52484	16.50020
	min_pulse_width	**CLK ()**	1.89111	2.05685	16.50020
	min_pulse_width	**CLK ()**	0.74566	1.64086	16.50020
	min_pulse_width	**CLK ()**	1.89111	2.05685	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.01582	0.01573	0.01573
	CLK	0.01341	0.01331	0.01332
sky130_fd_sc_hs__sedfxtp_2	CLK	0.01736	0.01735	0.01745
	CLK	0.01491	0.01491	0.01504
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02032	0.02047	0.02073
	CLK	0.01780	0.01797	0.01822

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.01465	0.01448	0.01433
	CLK	0.01298	0.01281	0.01265
sky130_fd_sc_hs__sedfxtp_2	CLK	0.01614	0.01612	0.01597
	CLK	0.01447	0.01445	0.01430
sky130_fd_sc_hs__sedfxtp_4	CLK	0.01847	0.01867	0.01879
	CLK	0.01673	0.01692	0.01692

Passive power(pJ) for D rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00247	0.00240	0.00234
	(DE * SCE)	0.00093	0.00085	0.00080
	(CLK * DE * !SCE)	0.00514	0.00510	0.00503
	(CLK * DE * !SCE)	0.00319	0.00315	0.00308
	(CLK * !DE * !SCE)	0.00057	0.00057	0.00057
	(CLK * !DE * !SCE)	-0.00049	-0.00049	-0.00048
	(!DE * SCE)	0.00057	0.00057	0.00057
	(!DE * SCE)	-0.00049	-0.00049	-0.00048
	(!CLK * DE * !SCE * Q)	0.00892	0.00888	0.00879
	(!CLK * DE * !SCE * Q)	0.00696	0.00693	0.00683
	(!CLK * DE * !SCE * !Q)	0.00863	0.00860	0.00850
	(!CLK * DE * !SCE * !Q)	0.00666	0.00663	0.00653
	(!CLK * !DE * !SCE)	0.00057	0.00057	0.00057
	(!CLK * !DE * !SCE)	-0.00049	-0.00049	-0.00048
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00256	0.00248	0.00243
	(DE * SCE)	0.00094	0.00085	0.00080
	(CLK * DE * !SCE)	0.00523	0.00518	0.00511
	(CLK * DE * !SCE)	0.00319	0.00315	0.00308
	(CLK * !DE * !SCE)	0.00060	0.00060	0.00059
	(CLK * !DE * !SCE)	-0.00051	-0.00051	-0.00051
	(!DE * SCE)	0.00059	0.00060	0.00059
	(!DE * SCE)	-0.00051	-0.00051	-0.00051
	(!CLK * DE * !SCE * Q)	0.00898	0.00894	0.00885
	(!CLK * DE * !SCE * Q)	0.00694	0.00690	0.00681
	(!CLK * DE * !SCE * !Q)	0.00873	0.00869	0.00858
	(!CLK * DE * !SCE * !Q)	0.00668	0.00664	0.00653
	(!CLK * !DE * !SCE)	0.00060	0.00060	0.00059
	(!CLK * !DE * !SCE)	-0.00051	-0.00052	-0.00051

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00257	0.00249	0.00243
	(DE * SCE)	0.00094	0.00085	0.00080
	(CLK * DE * !SCE)	0.00527	0.00522	0.00515
	(CLK * DE * !SCE)	0.00323	0.00318	0.00311
	(CLK * !DE * !SCE)	0.00060	0.00060	0.00060
	(CLK * !DE * !SCE)	-0.00051	-0.00052	-0.00051
	(!DE * SCE)	0.00060	0.00060	0.00060
	(!DE * SCE)	-0.00051	-0.00051	-0.00051
	(!CLK * DE * !SCE * Q)	0.00892	0.00888	0.00879
	(!CLK * DE * !SCE * Q)	0.00688	0.00684	0.00675
	(!CLK * DE * !SCE * !Q)	0.00864	0.00860	0.00849
	(!CLK * DE * !SCE * !Q)	0.00658	0.00655	0.00643
	(!CLK * !DE * !SCE)	0.00060	0.00060	0.00060
	(!CLK * !DE * !SCE)	-0.00051	-0.00052	-0.00051

Passive power(pJ) for D falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00085	0.00076	0.00075
	(DE * SCE)	0.00241	0.00233	0.00231
	(CLK * DE * !SCE)	0.00172	0.00162	0.00153
	(CLK * DE * !SCE)	0.00368	0.00359	0.00346
	(CLK * !DE * !SCE)	-0.00020	-0.00021	-0.00021
	(CLK * !DE * !SCE)	0.00085	0.00085	0.00085
	(!DE * SCE)	-0.00021	-0.00021	-0.00020
	(!DE * SCE)	0.00085	0.00085	0.00085
	(!CLK * DE * !SCE * Q)	0.00505	0.00496	0.00176
	(!CLK * DE * !SCE * Q)	0.00701	0.00691	0.00358
	(!CLK * DE * !SCE * !Q)	0.00536	0.00528	0.00206
	(!CLK * DE * !SCE * !Q)	0.00733	0.00725	0.00389
	(!CLK * !DE * !SCE)	-0.00020	-0.00021	-0.00021
	(!CLK * !DE * !SCE)	0.00085	0.00085	0.00085
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00082	0.00073	0.00072
	(DE * SCE)	0.00246	0.00237	0.00236
	(CLK * DE * !SCE)	0.00168	0.00158	0.00148
	(CLK * DE * !SCE)	0.00373	0.00363	0.00349
	(CLK * !DE * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK * !DE * !SCE)	0.00091	0.00091	0.00090
	(!DE * SCE)	-0.00021	-0.00021	-0.00021
	(!DE * SCE)	0.00091	0.00091	0.00090
	(!CLK * DE * !SCE * Q)	0.00502	0.00492	0.00172
	(!CLK * DE * !SCE * Q)	0.00706	0.00696	0.00362
	(!CLK * DE * !SCE * !Q)	0.00530	0.00521	0.00200
	(!CLK * DE * !SCE * !Q)	0.00736	0.00726	0.00391
	(!CLK * !DE * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK * !DE * !SCE)	0.00091	0.00091	0.00090

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00078	0.00069	0.00067
	(DE * SCE)	0.00242	0.00233	0.00232
	(CLK * DE * !SCE)	0.00179	0.00169	0.00158
	(CLK * DE * !SCE)	0.00384	0.00374	0.00358
	(CLK * !DE * !SCE)	-0.00021	-0.00021	-0.00021
	(CLK * !DE * !SCE)	0.00091	0.00091	0.00090
	(!DE * SCE)	-0.00021	-0.00021	-0.00021
	(!DE * SCE)	0.00091	0.00091	0.00091
	(!CLK * DE * !SCE * Q)	0.00507	0.00497	0.00178
	(!CLK * DE * !SCE * Q)	0.00711	0.00701	0.00368
	(!CLK * DE * !SCE * !Q)	0.00538	0.00529	0.00207
	(!CLK * DE * !SCE * !Q)	0.00744	0.00734	0.00399
	(!CLK * !DE * !SCE)	-0.00021	-0.00021	-0.00021
	(!CLK * !DE * !SCE)	0.00091	0.00091	0.00090

Passive power(pJ) for DE rising (conditional):

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00414	0.00397	0.00388
	SCE	0.00181	0.00164	0.00156
	(CLK * !SCE)	0.00710	0.00697	0.00687
	(CLK * !SCE)	0.00334	0.00319	0.00309
	(!CLK * D * !SCE * Q)	0.00280	0.00269	0.00264
	(!CLK * D * !SCE * Q)	-0.00004	-0.00015	-0.00020
	(!CLK * D * !SCE * !Q)	0.01086	0.01072	0.01060
	(!CLK * D * !SCE * !Q)	0.00710	0.00696	0.00684
	(!CLK * !D * !SCE * Q)	0.00850	0.00836	0.00825
	(!CLK * !D * !SCE * Q)	0.00659	0.00644	0.00632
	(!CLK * !D * !SCE * !Q)	0.00283	0.00274	0.00267
	(!CLK * !D * !SCE * !Q)	0.00003	-0.00008	-0.00013

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00415	0.00399	0.00390
	SCE	0.00181	0.00164	0.00156
	(CLK * !SCE)	0.00721	0.00707	0.00697
	(CLK * !SCE)	0.00337	0.00322	0.00312
	(!CLK * D * !SCE * Q)	0.00282	0.00271	0.00265
	(!CLK * D * !SCE * Q)	-0.00006	-0.00017	-0.00023
	(!CLK * D * !SCE * !Q)	0.01094	0.01081	0.01069
	(!CLK * D * !SCE * !Q)	0.00710	0.00696	0.00684
	(!CLK * !D * !SCE * Q)	0.00850	0.00838	0.00826
	(!CLK * !D * !SCE * Q)	0.00658	0.00643	0.00632
	(!CLK * !D * !SCE * !Q)	0.00285	0.00275	0.00269
	(!CLK * !D * !SCE * !Q)	0.00000	-0.00011	-0.00016
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00409	0.00393	0.00384
	SCE	0.00177	0.00160	0.00152
	(CLK * !SCE)	0.00722	0.00708	0.00698
	(CLK * !SCE)	0.00339	0.00325	0.00315
	(!CLK * D * !SCE * Q)	0.00281	0.00270	0.00264
	(!CLK * D * !SCE * Q)	-0.00006	-0.00017	-0.00022
	(!CLK * D * !SCE * !Q)	0.01084	0.01070	0.01058
	(!CLK * D * !SCE * !Q)	0.00701	0.00687	0.00675
	(!CLK * !D * !SCE * Q)	0.00854	0.00842	0.00830
	(!CLK * !D * !SCE * Q)	0.00663	0.00649	0.00637
	(!CLK * !D * !SCE * !Q)	0.00284	0.00275	0.00268
	(!CLK * !D * !SCE * !Q)	0.00001	-0.00010	-0.00015

Passive power(pJ) for DE falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00237	0.00226	0.00217
	SCE	0.00470	0.00458	0.00450
	(CLK * !SCE)	0.00502	0.00493	0.00484
	(CLK * !SCE)	0.00694	0.00684	0.00676
	(!CLK * D * !SCE * Q)	-0.00003	-0.00012	-0.00015
	(!CLK * D * !SCE * Q)	0.00279	0.00271	0.00268
	(!CLK * D * !SCE * !Q)	0.00578	0.00565	0.00225
	(!CLK * D * !SCE * !Q)	0.00956	0.00942	0.00586
	(!CLK * !D * !SCE * Q)	0.00880	0.00870	0.00862
	(!CLK * !D * !SCE * Q)	0.01071	0.01061	0.01055
	(!CLK * !D * !SCE * !Q)	-0.00007	-0.00017	-0.00020
	(!CLK * !D * !SCE * !Q)	0.00273	0.00264	0.00261
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00239	0.00228	0.00219
	SCE	0.00473	0.00461	0.00453
	(CLK * !SCE)	0.00504	0.00495	0.00487
	(CLK * !SCE)	0.00697	0.00687	0.00680
	(!CLK * D * !SCE * Q)	-0.00004	-0.00013	-0.00016
	(!CLK * D * !SCE * Q)	0.00282	0.00274	0.00271
	(!CLK * D * !SCE * !Q)	0.00574	0.00561	0.00222
	(!CLK * D * !SCE * !Q)	0.00959	0.00946	0.00590
	(!CLK * !D * !SCE * Q)	0.00879	0.00870	0.00862
	(!CLK * !D * !SCE * Q)	0.01072	0.01062	0.01056
	(!CLK * !D * !SCE * !Q)	-0.00009	-0.00018	-0.00022
	(!CLK * !D * !SCE * !Q)	0.00276	0.00267	0.00264

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00240	0.00229	0.00220
	SCE	0.00472	0.00461	0.00452
	(CLK * !SCE)	0.00508	0.00499	0.00491
	(CLK * !SCE)	0.00699	0.00689	0.00683
	(!CLK * D * !SCE * Q)	-0.00004	-0.00013	-0.00016
	(!CLK * D * !SCE * Q)	0.00281	0.00273	0.00270
	(!CLK * D * !SCE * !Q)	0.00582	0.00569	0.00230
	(!CLK * D * !SCE * !Q)	0.00966	0.00953	0.00595
	(!CLK * !D * !SCE * Q)	0.00873	0.00864	0.00855
	(!CLK * !D * !SCE * Q)	0.01064	0.01054	0.01048
	(!CLK * !D * !SCE * !Q)	-0.00009	-0.00018	-0.00021
	(!CLK * !D * !SCE * !Q)	0.00275	0.00266	0.00262

Passive power(pJ) for SCD rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00275	0.00272	0.00267
	(CLK * SCE)	0.00117	0.00113	0.00109
	(!CLK * SCE)	0.00653	0.00649	0.00641
	(!CLK * SCE)	0.00494	0.00491	0.00483
	!SCE	0.00043	0.00043	0.00043
	!SCE	-0.00065	-0.00066	-0.00066
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00282	0.00278	0.00274
	(CLK * SCE)	0.00121	0.00117	0.00113
	(!CLK * SCE)	0.00656	0.00653	0.00645
	(!CLK * SCE)	0.00496	0.00492	0.00484
	!SCE	0.00044	0.00045	0.00044
	!SCE	-0.00066	-0.00066	-0.00066
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00282	0.00278	0.00274
	(CLK * SCE)	0.00122	0.00119	0.00115
	(!CLK * SCE)	0.00646	0.00642	0.00634
	(!CLK * SCE)	0.00485	0.00482	0.00474
	!SCE	0.00044	0.00044	0.00044
	!SCE	-0.00066	-0.00066	-0.00066

Passive power(pJ) for SCD falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00148	0.00144	0.00143
	(CLK * SCE)	0.00307	0.00303	0.00300
	(!CLK * SCE)	0.00515	0.00511	0.00449
	(!CLK * SCE)	0.00674	0.00670	0.00603
	!SCE	-0.00042	-0.00043	-0.00043
	!SCE	0.00065	0.00066	0.00066
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00143	0.00139	0.00138
	(CLK * SCE)	0.00304	0.00300	0.00297
	(!CLK * SCE)	0.00507	0.00503	0.00443
	(!CLK * SCE)	0.00669	0.00665	0.00600
	!SCE	-0.00043	-0.00045	-0.00044
	!SCE	0.00066	0.00067	0.00066
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00161	0.00158	0.00156
	(CLK * SCE)	0.00322	0.00318	0.00315
	(!CLK * SCE)	0.00522	0.00518	0.00456
	(!CLK * SCE)	0.00683	0.00679	0.00611
	!SCE	-0.00043	-0.00044	-0.00044
	!SCE	0.00066	0.00067	0.00066

Passive power(pJ) for SCE rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00469	0.00456	0.00439
	(CLK * D)	0.00262	0.00247	0.00230
	(CLK * !D)	0.00468	0.00454	0.00437
	(CLK * !D)	0.00261	0.00245	0.00228
	(!CLK * D * SCD * Q)	0.00249	0.00242	0.00237
	(!CLK * D * SCD * Q)	-0.00001	-0.00010	-0.00014
	(!CLK * D * DE * SCD * !Q)	0.00241	0.00235	0.00229
	(!CLK * D * DE * SCD * !Q)	-0.00009	-0.00018	-0.00022
	(!CLK * D * DE * !SCD * !Q)	0.00830	0.00824	0.00808
	(!CLK * D * DE * !SCD * !Q)	0.00622	0.00615	0.00599
	(!CLK * D * !SCD * Q)	0.00828	0.00821	0.00805
	(!CLK * D * !SCD * Q)	0.00619	0.00612	0.00596
	(!CLK * D * !DE * SCD * !Q)	0.00813	0.00800	0.00785
	(!CLK * D * !DE * SCD * !Q)	0.00521	0.00508	0.00493
	(!CLK * D * !DE * !SCD * !Q)	0.00276	0.00268	0.00264
	(!CLK * D * !DE * !SCD * !Q)	0.00027	0.00018	0.00014
	(!CLK * !D * SCD * !Q)	0.00813	0.00800	0.00785
	(!CLK * !D * SCD * !Q)	0.00521	0.00508	0.00493
	(!CLK * !D * DE * SCD * Q)	0.00832	0.00819	0.00804
	(!CLK * !D * DE * SCD * Q)	0.00539	0.00527	0.00512
	(!CLK * !D * DE * !SCD * Q)	0.00284	0.00276	0.00272
	(!CLK * !D * DE * !SCD * Q)	0.00035	0.00026	0.00022
	(!CLK * !D * !SCD * !Q)	0.00276	0.00268	0.00264
	(!CLK * !D * !SCD * !Q)	0.00027	0.00018	0.00014
	(!CLK * !D * !DE * SCD * Q)	0.00249	0.00242	0.00237
	(!CLK * !D * !DE * SCD * Q)	-0.00001	-0.00010	-0.00014
	(!CLK * !D * !DE * !SCD * Q)	0.00828	0.00821	0.00805
	(!CLK * !D * !DE * !SCD * Q)	0.00620	0.00612	0.00595

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00471	0.00456	0.00440
	(CLK * D)	0.00259	0.00243	0.00226
	(CLK * !D)	0.00472	0.00456	0.00440
	(CLK * !D)	0.00259	0.00243	0.00226
	(!CLK * D * SCD * Q)	0.00253	0.00246	0.00241
	(!CLK * D * SCD * Q)	-0.00002	-0.00011	-0.00015
	(!CLK * D * DE * SCD * !Q)	0.00246	0.00239	0.00233
	(!CLK * D * DE * SCD * !Q)	-0.00009	-0.00018	-0.00023
	(!CLK * D * DE * !SCD * !Q)	0.00828	0.00822	0.00806
	(!CLK * D * DE * !SCD * !Q)	0.00616	0.00609	0.00592
	(!CLK * D * !SCD * Q)	0.00828	0.00821	0.00805
	(!CLK * D * !SCD * Q)	0.00615	0.00608	0.00592
	(!CLK * D * !DE * SCD * !Q)	0.00818	0.00805	0.00790
	(!CLK * D * !DE * SCD * !Q)	0.00522	0.00508	0.00493
	(!CLK * D * !DE * !SCD * !Q)	0.00279	0.00271	0.00267
	(!CLK * D * !DE * !SCD * !Q)	0.00026	0.00017	0.00012
	(!CLK * !D * SCD * !Q)	0.00818	0.00805	0.00790
	(!CLK * !D * SCD * !Q)	0.00521	0.00508	0.00493
	(!CLK * !D * DE * SCD * Q)	0.00834	0.00821	0.00806
	(!CLK * !D * DE * SCD * Q)	0.00537	0.00524	0.00509
	(!CLK * !D * DE * !SCD * Q)	0.00287	0.00279	0.00274
	(!CLK * !D * DE * !SCD * Q)	0.00033	0.00024	0.00020
	(!CLK * !D * !SCD * !Q)	0.00279	0.00271	0.00267
	(!CLK * !D * !SCD * !Q)	0.00026	0.00017	0.00012
	(!CLK * !D * !DE * SCD * Q)	0.00253	0.00246	0.00241
	(!CLK * !D * !DE * SCD * Q)	-0.00002	-0.00011	-0.00015
	(!CLK * !D * !DE * !SCD * Q)	0.00828	0.00821	0.00805
	(!CLK * !D * !DE * !SCD * Q)	0.00616	0.00607	0.00591

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00485	0.00472	0.00455
	(CLK * D)	0.00275	0.00260	0.00244
	(CLK * !D)	0.00486	0.00472	0.00455
	(CLK * !D)	0.00276	0.00260	0.00244
	(!CLK * D * SCD * Q)	0.00251	0.00244	0.00239
	(!CLK * D * SCD * Q)	-0.00002	-0.00010	-0.00015
	(!CLK * D * DE * SCD * !Q)	0.00243	0.00237	0.00231
	(!CLK * D * DE * SCD * !Q)	-0.00010	-0.00018	-0.00022
	(!CLK * D * DE * !SCD * !Q)	0.00840	0.00834	0.00818
	(!CLK * D * DE * !SCD * !Q)	0.00630	0.00623	0.00607
	(!CLK * D * !SCD * Q)	0.00837	0.00831	0.00815
	(!CLK * D * !SCD * Q)	0.00627	0.00619	0.00604
	(!CLK * D * !DE * SCD * !Q)	0.00807	0.00795	0.00779
	(!CLK * D * !DE * SCD * !Q)	0.00513	0.00500	0.00485
	(!CLK * D * !DE * !SCD * !Q)	0.00277	0.00270	0.00265
	(!CLK * D * !DE * !SCD * !Q)	0.00026	0.00017	0.00013
	(!CLK * !D * SCD * !Q)	0.00807	0.00795	0.00779
	(!CLK * !D * SCD * !Q)	0.00513	0.00500	0.00485
	(!CLK * !D * DE * SCD * Q)	0.00825	0.00813	0.00797
	(!CLK * !D * DE * SCD * Q)	0.00531	0.00518	0.00503
	(!CLK * !D * DE * !SCD * Q)	0.00285	0.00277	0.00273
	(!CLK * !D * DE * !SCD * Q)	0.00034	0.00025	0.00021
	(!CLK * !D * !SCD * !Q)	0.00278	0.00270	0.00265
	(!CLK * !D * !SCD * !Q)	0.00026	0.00017	0.00013
	(!CLK * !D * !DE * SCD * Q)	0.00251	0.00244	0.00239
	(!CLK * !D * !DE * SCD * Q)	-0.00002	-0.00010	-0.00015
	(!CLK * !D * !DE * !SCD * Q)	0.00838	0.00831	0.00815
	(!CLK * !D * !DE * !SCD * Q)	0.00627	0.00619	0.00603

Passive power(pJ) for SCE falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00289	0.00299	0.00311
	(CLK * D)	0.00499	0.00508	0.00520
	(CLK * !D)	0.00289	0.00299	0.00311
	(CLK * !D)	0.00499	0.00508	0.00520
	(!CLK * D * SCD * Q)	0.00020	0.00013	0.00012
	(!CLK * D * SCD * Q)	0.00270	0.00265	0.00263
	(!CLK * D * DE * SCD * !Q)	0.00028	0.00021	0.00020
	(!CLK * D * DE * SCD * !Q)	0.00278	0.00273	0.00271
	(!CLK * D * DE * !SCD * !Q)	0.00661	0.00669	0.00681
	(!CLK * D * DE * !SCD * !Q)	0.00871	0.00878	0.00889
	(!CLK * D * !SCD * Q)	0.00664	0.00672	0.00684
	(!CLK * D * !SCD * Q)	0.00874	0.00881	0.00892
	(!CLK * D * !DE * SCD * !Q)	0.00455	0.00439	0.00363
	(!CLK * D * !DE * SCD * !Q)	0.00747	0.00731	0.00645
	(!CLK * D * !DE * !SCD * !Q)	-0.00005	-0.00011	-0.00014
	(!CLK * D * !DE * !SCD * !Q)	0.00243	0.00238	0.00236
	(!CLK * !D * SCD * !Q)	0.00455	0.00439	0.00359
	(!CLK * !D * SCD * !Q)	0.00747	0.00731	0.00639
	(!CLK * !D * DE * SCD * Q)	0.00435	0.00420	0.00345
	(!CLK * !D * DE * SCD * Q)	0.00728	0.00712	0.00626
	(!CLK * !D * DE * !SCD * Q)	-0.00013	-0.00020	-0.00022
	(!CLK * !D * DE * !SCD * Q)	0.00235	0.00230	0.00228
	(!CLK * !D * !SCD * !Q)	-0.00005	-0.00011	-0.00014
	(!CLK * !D * !SCD * !Q)	0.00243	0.00238	0.00236
	(!CLK * !D * !DE * SCD * Q)	0.00020	0.00013	0.00012
	(!CLK * !D * !DE * SCD * Q)	0.00270	0.00265	0.00263
	(!CLK * !D * !DE * !SCD * Q)	0.00664	0.00672	0.00683
	(!CLK * !D * !DE * !SCD * Q)	0.00874	0.00881	0.00893

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00289	0.00298	0.00310
	(CLK * D)	0.00502	0.00511	0.00523
	(CLK * !D)	0.00288	0.00297	0.00309
	(CLK * !D)	0.00501	0.00510	0.00522
	(!CLK * D * SCD * Q)	0.00018	0.00011	0.00010
	(!CLK * D * SCD * Q)	0.00273	0.00268	0.00265
	(!CLK * D * DE * SCD * !Q)	0.00026	0.00019	0.00017
	(!CLK * D * DE * SCD * !Q)	0.00280	0.00275	0.00272
	(!CLK * D * DE * !SCD * !Q)	0.00659	0.00667	0.00679
	(!CLK * D * DE * !SCD * !Q)	0.00873	0.00880	0.00891
	(!CLK * D * !SCD * Q)	0.00660	0.00667	0.00679
	(!CLK * D * !SCD * Q)	0.00874	0.00881	0.00892
	(!CLK * D * !DE * SCD * !Q)	0.00449	0.00434	0.00358
	(!CLK * D * !DE * SCD * !Q)	0.00746	0.00730	0.00645
	(!CLK * D * !DE * !SCD * !Q)	-0.00007	-0.00013	-0.00015
	(!CLK * D * !DE * !SCD * !Q)	0.00246	0.00241	0.00238
	(!CLK * !D * SCD * !Q)	0.00449	0.00434	0.00354
	(!CLK * !D * SCD * !Q)	0.00747	0.00731	0.00640
	(!CLK * !D * DE * SCD * Q)	0.00433	0.00418	0.00344
	(!CLK * !D * DE * SCD * Q)	0.00731	0.00715	0.00629
	(!CLK * !D * DE * !SCD * Q)	-0.00014	-0.00021	-0.00023
	(!CLK * !D * DE * !SCD * Q)	0.00238	0.00234	0.00231
	(!CLK * !D * !SCD * !Q)	-0.00007	-0.00013	-0.00016
	(!CLK * !D * !SCD * !Q)	0.00246	0.00241	0.00238
	(!CLK * !D * !DE * SCD * Q)	0.00018	0.00011	0.00010
	(!CLK * !D * !DE * SCD * Q)	0.00273	0.00268	0.00265
	(!CLK * !D * !DE * !SCD * Q)	0.00660	0.00668	0.00679
	(!CLK * !D * !DE * !SCD * Q)	0.00874	0.00881	0.00892

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00291	0.00301	0.00313
	(CLK * D)	0.00503	0.00512	0.00524
	(CLK * !D)	0.00291	0.00301	0.00313
	(CLK * !D)	0.00503	0.00512	0.00524
	(!CLK * D * SCD * Q)	0.00020	0.00013	0.00012
	(!CLK * D * SCD * Q)	0.00272	0.00267	0.00264
	(!CLK * D * DE * SCD * !Q)	0.00027	0.00020	0.00019
	(!CLK * D * DE * SCD * !Q)	0.00279	0.00275	0.00272
	(!CLK * D * DE * !SCD * !Q)	0.00650	0.00658	0.00670
	(!CLK * D * DE * !SCD * !Q)	0.00862	0.00870	0.00882
	(!CLK * D * !SCD * Q)	0.00653	0.00661	0.00673
	(!CLK * D * !SCD * Q)	0.00865	0.00873	0.00884
	(!CLK * D * !DE * SCD * !Q)	0.00463	0.00448	0.00369
	(!CLK * D * !DE * SCD * !Q)	0.00759	0.00743	0.00653
	(!CLK * D * !DE * !SCD * !Q)	-0.00006	-0.00012	-0.00014
	(!CLK * D * !DE * !SCD * !Q)	0.00245	0.00240	0.00238
	(!CLK * !D * SCD * !Q)	0.00464	0.00448	0.00364
	(!CLK * !D * SCD * !Q)	0.00759	0.00743	0.00647
	(!CLK * !D * DE * SCD * Q)	0.00445	0.00430	0.00350
	(!CLK * !D * DE * SCD * Q)	0.00740	0.00724	0.00633
	(!CLK * !D * DE * !SCD * Q)	-0.00013	-0.00020	-0.00022
	(!CLK * !D * DE * !SCD * Q)	0.00237	0.00232	0.00230
	(!CLK * !D * !SCD * !Q)	-0.00006	-0.00012	-0.00014
	(!CLK * !D * !SCD * !Q)	0.00245	0.00240	0.00237
	(!CLK * !D * !DE * SCD * Q)	0.00020	0.00013	0.00011
	(!CLK * !D * !DE * SCD * Q)	0.00272	0.00267	0.00264
	(!CLK * !D * !DE * !SCD * Q)	0.00653	0.00661	0.00673
	(!CLK * !D * !DE * !SCD * Q)	0.00865	0.00873	0.00885

Passive power(pJ) for CLK rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.00743	0.00723	0.00709
	(SCD * SCE * Q)	0.00537	0.00516	0.00503
	(D * !SCE * Q)	0.00742	0.00722	0.00709
	(D * !SCE * Q)	0.00536	0.00515	0.00502
	(D * !DE * !SCE * !Q)	0.00746	0.00723	0.00710
	(D * !DE * !SCE * !Q)	0.00540	0.00517	0.00504
	(!SCD * SCE * !Q)	0.00746	0.00724	0.00711
	(!SCD * SCE * !Q)	0.00540	0.00517	0.00505
	(!D * !SCE * !Q)	0.00746	0.00723	0.00710
	(!D * !SCE * !Q)	0.00540	0.00517	0.00504
	(!D * !DE * !SCE * Q)	0.00742	0.00722	0.00709
	(!D * !DE * !SCE * Q)	0.00536	0.00515	0.00502
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.00752	0.00732	0.00720
	(SCD * SCE * Q)	0.00544	0.00524	0.00512
	(D * !SCE * Q)	0.00752	0.00731	0.00719
	(D * !SCE * Q)	0.00544	0.00523	0.00511
	(D * !DE * !SCE * !Q)	0.00756	0.00733	0.00720
	(D * !DE * !SCE * !Q)	0.00547	0.00525	0.00513
	(!SCD * SCE * !Q)	0.00756	0.00734	0.00721
	(!SCD * SCE * !Q)	0.00548	0.00526	0.00513
	(!D * !SCE * !Q)	0.00756	0.00733	0.00720
	(!D * !SCE * !Q)	0.00547	0.00525	0.00513
	(!D * !DE * !SCE * Q)	0.00752	0.00731	0.00719
	(!D * !DE * !SCE * Q)	0.00544	0.00523	0.00511

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00752	0.00731	0.00718
	(SCD * SCE * Q)	0.00537	0.00516	0.00503
	(D * !SCE * Q)	0.00751	0.00730	0.00717
	(D * !SCE * Q)	0.00536	0.00515	0.00502
	(D * !DE * !SCE * !Q)	0.00748	0.00725	0.00711
	(D * !DE * !SCE * !Q)	0.00533	0.00510	0.00497
	(!SCD * SCE * !Q)	0.00748	0.00726	0.00712
	(!SCD * SCE * !Q)	0.00534	0.00511	0.00498
	(!D * !SCE * !Q)	0.00748	0.00725	0.00711
	(!D * !SCE * !Q)	0.00533	0.00510	0.00497
	(!D * !DE * !SCE * Q)	0.00751	0.00731	0.00717
	(!D * !DE * !SCE * Q)	0.00536	0.00515	0.00502

Passive power(pJ) for CLK falling (conditional):

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00425	0.00410	0.00399
	(SCD * SCE * Q)	0.00633	0.00617	0.00605
	(SCD * SCE * !Q)	0.00791	0.00776	0.00758
	(SCD * SCE * !Q)	0.00999	0.00982	0.00964
	(D * DE * !SCE * !Q)	0.00789	0.00773	0.00756
	(D * DE * !SCE * !Q)	0.00997	0.00980	0.00962
	(D * !SCE * Q)	0.00425	0.00411	0.00400
	(D * !SCE * Q)	0.00633	0.00618	0.00606
	(D * !DE * !SCE * !Q)	0.00407	0.00393	0.00382
	(D * !DE * !SCE * !Q)	0.00615	0.00599	0.00588
	(!SCD * SCE * Q)	0.00854	0.00840	0.00836
	(!SCD * SCE * Q)	0.01062	0.01048	0.01041
	(!SCD * SCE * !Q)	0.00406	0.00392	0.00381
	(!SCD * SCE * !Q)	0.00614	0.00599	0.00588
	(!D * DE * !SCE * Q)	0.00855	0.00841	0.00807
	(!D * DE * !SCE * Q)	0.01063	0.01049	0.01003
	(!D * !SCE * !Q)	0.00407	0.00393	0.00381
	(!D * !SCE * !Q)	0.00615	0.00599	0.00588
	(!D * !DE * !SCE * Q)	0.00425	0.00411	0.00400
	(!D * !DE * !SCE * Q)	0.00633	0.00618	0.00606

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00428	0.00413	0.00402
	(SCD * SCE * Q)	0.00637	0.00622	0.00610
	(SCD * SCE * !Q)	0.00791	0.00775	0.00756
	(SCD * SCE * !Q)	0.01000	0.00983	0.00964
	(D * DE * !SCE * !Q)	0.00788	0.00773	0.00755
	(D * DE * !SCE * !Q)	0.00997	0.00981	0.00962
	(D * !SCE * Q)	0.00428	0.00414	0.00403
	(D * !SCE * Q)	0.00638	0.00622	0.00611
	(D * !DE * !SCE * !Q)	0.00410	0.00396	0.00384
	(D * !DE * !SCE * !Q)	0.00619	0.00604	0.00592
	(!SCD * SCE * Q)	0.00861	0.00842	0.00838
	(!SCD * SCE * Q)	0.01071	0.01051	0.01044
	(!SCD * SCE * !Q)	0.00409	0.00395	0.00384
	(!SCD * SCE * !Q)	0.00619	0.00603	0.00592
	(!D * DE * !SCE * Q)	0.00862	0.00843	0.00809
	(!D * DE * !SCE * Q)	0.01071	0.01051	0.01006
	(!D * !SCE * !Q)	0.00410	0.00396	0.00384
	(!D * !SCE * !Q)	0.00619	0.00604	0.00592
	(!D * !DE * !SCE * Q)	0.00428	0.00414	0.00403
	(!D * !DE * !SCE * Q)	0.00638	0.00622	0.00611

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00416	0.00401	0.00389
	(SCD * SCE * Q)	0.00632	0.00616	0.00604
	(SCD * SCE * !Q)	0.00776	0.00760	0.00741
	(SCD * SCE * !Q)	0.00993	0.00976	0.00956
	(D * DE * !SCE * !Q)	0.00775	0.00759	0.00739
	(D * DE * !SCE * !Q)	0.00991	0.00974	0.00954
	(D * !SCE * Q)	0.00417	0.00401	0.00390
	(D * !SCE * Q)	0.00633	0.00616	0.00605
	(D * !DE * !SCE * !Q)	0.00405	0.00391	0.00379
	(D * !DE * !SCE * !Q)	0.00622	0.00606	0.00594
	(!SCD * SCE * Q)	0.00844	0.00824	0.00822
	(!SCD * SCE * Q)	0.01060	0.01040	0.01036
	(!SCD * SCE * !Q)	0.00405	0.00390	0.00378
	(!SCD * SCE * !Q)	0.00621	0.00605	0.00594
	(!D * DE * !SCE * Q)	0.00845	0.00825	0.00795
	(!D * DE * !SCE * Q)	0.01061	0.01040	0.01000
	(!D * !SCE * !Q)	0.00405	0.00391	0.00379
	(!D * !SCE * !Q)	0.00622	0.00606	0.00594
	(!D * !DE * !SCE * Q)	0.00417	0.00401	0.00390
	(!D * !DE * !SCE * Q)	0.00633	0.00616	0.00605

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor2_1	11.18880
sky130_fd_sc_hs__xnor2_2	17.58240
sky130_fd_sc_hs__xnor2_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__xnor2_1	0.00450	0.00456	0.07580
sky130_fd_sc_hs__xnor2_2	0.00750	0.00756	0.14929
sky130_fd_sc_hs__xnor2_4	0.01324	0.01378	0.27963

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	0.00012	0.00014
sky130_fd_sc_hs__xnor2_2	0.00000	0.00019	0.00022
sky130_fd_sc_hs__xnor2_4	0.00000	0.00033	0.00038

Delay Information

Delay(ns) to Y rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__xnor2_1	A->Y (RR)	B	0.28231	1.28952	5.68970
	A->Y (FR)	!B	0.63063	2.74740	14.28190
	B->Y (RR)	A	0.27493	1.26982	5.45727
	B->Y (FR)	!A	0.56643	2.58756	13.71560
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.29556	1.22428	5.86404
	A->Y (FR)	!B	0.61567	2.46739	14.29460
	B->Y (RR)	A	0.28924	1.21588	5.69827
	B->Y (FR)	!A	0.53809	2.29708	13.70260
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.36034	1.48842	8.54325
	A->Y (FR)	!B	0.56816	2.23126	14.32470
	B->Y (RR)	A	0.35014	1.46166	8.30485
	B->Y (FR)	!A	0.49374	2.06443	13.76020

Delay(ns) to Y falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__xnor2_1	A->Y (FF)	B	0.43136	1.42379	6.78047
	A->Y (RF)	!B	0.09694	0.79042	4.74616
	B->Y (FF)	A	0.40608	1.40075	6.72667
	B->Y (RF)	!A	0.08655	0.77596	4.71933
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.54740	1.54976	7.31947
	A->Y (RF)	!B	0.09428	0.74863	4.73802
	B->Y (FF)	A	0.49092	1.48631	7.15028
	B->Y (RF)	!A	0.09058	0.73835	4.72906
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.49425	1.47042	7.12460
	A->Y (RF)	!B	0.09370	0.70812	4.71938
	B->Y (FF)	A	0.44119	1.41034	6.94399
	B->Y (RF)	!A	0.08986	0.69708	4.71466

Power Information

Internal switching power(pJ) to Y rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__xnor2_1	A	B	0.00503	0.00500	0.00497
	A	B	0.00109	0.00103	0.00104
	A	!B	-0.00043	-0.00049	-0.00051
	A	!B	0.00329	0.00326	0.00324
	B	A	0.00475	0.00463	0.00455
	B	A	0.00132	0.00120	0.00117
	B	!A	0.00006	0.00001	-0.00001
	B	!A	0.00329	0.00327	0.00326
sky130_fd_sc_hs__xnor2_2	A	B	0.00804	0.00798	0.00795
	A	B	0.00230	0.00221	0.00220
	A	!B	-0.00004	-0.00017	-0.00018
	A	!B	0.00651	0.00640	0.00638
	B	A	0.00782	0.00765	0.00759
	B	A	0.00271	0.00257	0.00257
	B	!A	0.00029	0.00019	0.00015
	B	!A	0.00617	0.00603	0.00604
sky130_fd_sc_hs__xnor2_4	A	B	0.01291	0.01286	0.01288
	A	B	0.00275	0.00261	0.00262
	A	!B	-0.00060	-0.00086	-0.00088
	A	!B	0.01179	0.01160	0.01159
	B	A	0.01275	0.01236	0.01224
	B	A	0.00372	0.00341	0.00329
	B	!A	-0.00012	-0.00033	-0.00036
	B	!A	0.01114	0.01088	0.01088

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__xnor2_1	A	B	0.00140	0.00132	0.00133
	A	B	0.00535	0.00528	0.00524
	A	!B	0.00419	0.00417	0.00412
	A	!B	0.00036	0.00031	0.00028
	B	A	0.00182	0.00147	0.00139
	B	A	0.00521	0.00490	0.00478
	B	!A	0.00303	0.00303	0.00301
	B	!A	-0.00023	-0.00026	-0.00028
sky130_fd_sc_hs__xnor2_2	A	B	0.00285	0.00278	0.00284
	A	B	0.00864	0.00857	0.00850
	A	!B	0.00778	0.00771	0.00761
	A	!B	0.00114	0.00101	0.00095
	B	A	0.00359	0.00314	0.00296
	B	A	0.00861	0.00819	0.00792
	B	!A	0.00606	0.00604	0.00603
	B	!A	0.00015	0.00009	0.00007
sky130_fd_sc_hs__xnor2_4	A	B	0.00462	0.00440	0.00444
	A	B	0.01486	0.01471	0.01456
	A	!B	0.01410	0.01392	0.01377
	A	!B	0.00147	0.00120	0.00111
	B	A	0.00524	0.00458	0.00418
	B	A	0.01410	0.01348	0.01304
	B	!A	0.01110	0.01103	0.01106
	B	!A	-0.00013	-0.00028	-0.00027

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor3_1	27.17280
sky130_fd_sc_hs__xnor3_2	28.77120
sky130_fd_sc_hs__xnor3_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xnor3_1	0.00241	0.00672	0.00383	0.18663
sky130_fd_sc_hs__xnor3_2	0.00246	0.00674	0.00388	0.37442
sky130_fd_sc_hs__xnor3_4	0.00245	0.00673	0.00379	0.74274

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	0.00050	0.00052
sky130_fd_sc_hs__xnor3_2	0.00000	0.00054	0.00056
sky130_fd_sc_hs__xnor3_4	0.00000	0.00062	0.00064

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-R)	1.14538	2.86584	14.06660
	B->X (-R)	0.82566	2.55458	13.51470
	C->X (-R)	0.66065	2.36797	12.94970
sky130_fd_sc_hs__xnor3_2	A->X (-R)	1.19330	2.73602	14.14780
	B->X (-R)	0.85158	2.40619	13.57490
	C->X (-R)	0.67792	2.21210	13.00600
sky130_fd_sc_hs__xnor3_4	A->X (-R)	1.32196	2.74712	14.31690
	B->X (-R)	0.99266	2.42631	13.75450
	C->X (-R)	0.80106	2.21912	13.17640

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	2.15117	3.33067	9.86844
	B->X (-F)	1.94932	3.10788	9.31962
	C->X (-F)	1.13226	2.16563	7.99256
sky130_fd_sc_hs__xnor3_2	A->X (-F)	2.41014	3.62114	10.25490
	B->X (-F)	2.23211	3.44288	9.83398
	C->X (-F)	1.54736	2.65934	8.72105
sky130_fd_sc_hs__xnor3_4	A->X (-F)	2.92207	4.20838	11.10300
	B->X (-F)	2.80887	4.10906	10.86780
	C->X (-F)	2.34608	3.55166	9.83155

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01258	0.01251	0.01236
	A	0.01243	0.01239	0.01231
	B	0.01171	0.01189	0.01213
	B	0.01145	0.01152	0.01180
	C	0.00574	0.00561	0.00551
	C	0.00582	0.00605	0.00632
sky130_fd_sc_hs__xnor3_2	A	0.01384	0.01385	0.01374
	A	0.01363	0.01368	0.01374
	B	0.01295	0.01322	0.01352
	B	0.01263	0.01277	0.01314
	C	0.00711	0.00708	0.00700
	C	0.00701	0.00734	0.00768
sky130_fd_sc_hs__xnor3_4	A	0.01700	0.01716	0.01717
	A	0.01656	0.01674	0.01704
	B	0.01589	0.01630	0.01674
	B	0.01555	0.01580	0.01634
	C	0.01009	0.01021	0.01027
	C	0.00995	0.01041	0.01094

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01178	0.01173	0.01163
	A	0.01255	0.01254	0.01241
	B	0.01077	0.01093	0.01120
	B	0.01175	0.01183	0.01207
	C	0.00599	0.00623	0.00666
	C	0.00522	0.00512	0.00505
sky130_fd_sc_hs__xnor3_2	A	0.01294	0.01307	0.01295
	A	0.01366	0.01381	0.01373
	B	0.01188	0.01219	0.01253
	B	0.01287	0.01308	0.01336
	C	0.00713	0.00753	0.00802
	C	0.00649	0.00649	0.00646
sky130_fd_sc_hs__xnor3_4	A	0.01597	0.01638	0.01692
	A	0.01639	0.01678	0.01682
	B	0.01431	0.01487	0.01606
	B	0.01564	0.01607	0.01648
	C	0.00987	0.01054	0.01136
	C	0.00938	0.00963	0.00967

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	X
0	0	0
0	1	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor2_1	12.78720
sky130_fd_sc_hs__xor2_2	15.98400
sky130_fd_sc_hs__xor2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__xor2_1	0.00460	0.00482	0.07354
sky130_fd_sc_hs__xor2_2	0.00706	0.00705	0.14460
sky130_fd_sc_hs__xor2_4	0.01416	0.01435	0.27616

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	0.00011	0.00013
sky130_fd_sc_hs__xor2_2	0.00000	0.00016	0.00019
sky130_fd_sc_hs__xor2_4	0.00000	0.00033	0.00037

Delay Information

Delay(ns) to X rising (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__xor2_1	A->X (RR)	!B	0.49537	2.23925	10.13820
	A->X (FR)	B	0.66292	2.79981	14.33330
	B->X (RR)	!A	0.61255	2.32217	10.27810
	B->X (FR)	A	0.53907	2.64400	14.07560
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.35935	1.86982	10.18390
	A->X (FR)	B	0.56921	2.45128	14.34890
	B->X (RR)	!A	0.46037	1.92229	10.17360
	B->X (FR)	A	0.44102	2.31485	14.20590
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.33994	1.60902	10.03130
	A->X (FR)	B	0.56458	2.22806	14.26610
	B->X (RR)	!A	0.41662	1.64115	9.91355
	B->X (FR)	A	0.43819	2.10614	14.21510

Delay(ns) to X falling (conditional):

Cell Name	Timing Arc(Dir)	When	Delay(ns)		
			First	Mid	Last
sky130_fd_sc_hs__xor2_1	A->X (FF)	!B	0.81751	1.84046	7.55152
	A->X (RF)	B	0.08539	0.77365	4.66649
	B->X (FF)	!A	0.78278	1.70728	7.00565
	B->X (RF)	A	0.07616	0.77376	4.69932
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	1.04759	2.12309	8.24457
	A->X (RF)	B	0.07979	0.72990	4.69903
	B->X (FF)	!A	0.95177	1.93659	7.67584
	B->X (RF)	A	0.07371	0.75608	4.93888
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.98783	2.03327	8.14893
	A->X (RF)	B	0.08123	0.69751	4.69401
	B->X (FF)	!A	0.88010	1.82954	7.52895
	B->X (RF)	A	0.07461	0.71011	4.87031

Power Information

Internal switching power(pJ) to X rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__xor2_1	A	B	0.00002	-0.00002	-0.00004
	A	B	0.00405	0.00401	0.00400
	A	!B	0.00567	0.00560	0.00552
	A	!B	0.00165	0.00156	0.00150
	B	A	-0.00020	-0.00025	-0.00026
	B	A	0.00318	0.00311	0.00311
	B	!A	0.00532	0.00495	0.00479
	B	!A	0.00195	0.00158	0.00143
sky130_fd_sc_hs__xor2_2	A	B	0.00031	0.00023	0.00021
	A	B	0.00686	0.00674	0.00674
	A	!B	0.00766	0.00759	0.00749
	A	!B	0.00208	0.00196	0.00189
	B	A	-0.00044	-0.00051	-0.00052
	B	A	0.00516	0.00506	0.00507
	B	!A	0.00768	0.00723	0.00697
	B	!A	0.00300	0.00254	0.00231
sky130_fd_sc_hs__xor2_4	A	B	0.00024	0.00003	0.00002
	A	B	0.01421	0.01394	0.01395
	A	!B	0.01509	0.01481	0.01462
	A	!B	0.00420	0.00392	0.00370
	B	A	-0.00090	-0.00106	-0.00107
	B	A	0.01094	0.01075	0.01077
	B	!A	0.01397	0.01325	0.01277
	B	!A	0.00515	0.00444	0.00395

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__xor2_1	A	B	0.00365	0.00362	0.00356
	A	B	-0.00033	-0.00039	-0.00045
	A	!B	0.00117	0.00115	0.00116
	A	!B	0.00516	0.00516	0.00516
	B	A	0.00325	0.00322	0.00315
	B	A	-0.00007	-0.00014	-0.00019
	B	!A	0.00175	0.00167	0.00165
	B	!A	0.00521	0.00513	0.00509
sky130_fd_sc_hs__xor2_2	A	B	0.00610	0.00602	0.00593
	A	B	-0.00038	-0.00051	-0.00061
	A	!B	0.00108	0.00109	0.00111
	A	!B	0.00660	0.00665	0.00664
	B	A	0.00537	0.00526	0.00516
	B	A	-0.00014	-0.00029	-0.00038
	B	!A	0.00178	0.00172	0.00173
	B	!A	0.00665	0.00662	0.00656
sky130_fd_sc_hs__xor2_4	A	B	0.01283	0.01263	0.01244
	A	B	-0.00096	-0.00126	-0.00142
	A	!B	0.00235	0.00242	0.00240
	A	!B	0.01308	0.01320	0.01316
	B	A	0.01121	0.01096	0.01082
	B	A	-0.00048	-0.00081	-0.00095
	B	!A	0.00401	0.00394	0.00427
	B	!A	0.01325	0.01316	0.01300

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_ss_1.28v_-40C.ccs
Cell Library: Process , Voltage 1.28,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor3_1	30.36960
sky130_fd_sc_hs__xor3_2	31.96800
sky130_fd_sc_hs__xor3_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xor3_1	0.00241	0.00688	0.00383	0.18850
sky130_fd_sc_hs__xor3_2	0.00242	0.00692	0.00382	0.37606
sky130_fd_sc_hs__xor3_4	0.00241	0.00702	0.00378	0.74113

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	0.00050	0.00052
sky130_fd_sc_hs__xor3_2	0.00000	0.00054	0.00056
sky130_fd_sc_hs__xor3_4	0.00000	0.00062	0.00064

Delay Information

Delay(ns) to X rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-R)	1.11456	2.82928	14.02410
	B->X (-R)	0.77729	2.50978	13.46900
	C->X (-R)	0.67509	2.37536	13.03330
sky130_fd_sc_hs__xor3_2	A->X (-R)	1.14603	2.68710	14.09700
	B->X (-R)	0.80316	2.36303	13.54370
	C->X (-R)	0.70310	2.23216	13.13810
sky130_fd_sc_hs__xor3_4	A->X (-R)	1.30150	2.72710	14.29040
	B->X (-R)	0.91459	2.35179	13.70550
	C->X (-R)	0.80081	2.21012	13.29100

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	2.16348	3.32754	9.82865
	B->X (-F)	1.93922	3.09357	9.28719
	C->X (-F)	1.02759	2.03201	7.80195
sky130_fd_sc_hs__xor3_2	A->X (-F)	2.41416	3.62347	10.26810
	B->X (-F)	2.21519	3.42944	9.83517
	C->X (-F)	1.48527	2.57145	8.62093
sky130_fd_sc_hs__xor3_4	A->X (-F)	2.97911	4.25794	11.15480
	B->X (-F)	2.83050	4.12780	10.90100
	C->X (-F)	2.29044	3.47415	9.81504

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01338	0.01329	0.01315
	A	0.01235	0.01230	0.01222
	B	0.01263	0.01283	0.01307
	B	0.01139	0.01152	0.01192
	C	0.00582	0.00570	0.00560
	C	0.00572	0.00596	0.00625
sky130_fd_sc_hs__xor3_2	A	0.01474	0.01476	0.01465
	A	0.01360	0.01366	0.01366
	B	0.01400	0.01429	0.01460
	B	0.01259	0.01281	0.01325
	C	0.00720	0.00718	0.00710
	C	0.00718	0.00749	0.00786
sky130_fd_sc_hs__xor3_4	A	0.01779	0.01796	0.01797
	A	0.01674	0.01694	0.01721
	B	0.01711	0.01755	0.01799
	B	0.01552	0.01586	0.01650
	C	0.01004	0.01016	0.01022
	C	0.01001	0.01047	0.01104

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01268	0.01264	0.01255
	A	0.01256	0.01254	0.01239
	B	0.01183	0.01200	0.01226
	B	0.01172	0.01188	0.01224
	C	0.00636	0.00664	0.00711
	C	0.00519	0.00508	0.00501
sky130_fd_sc_hs__xor3_2	A	0.01381	0.01395	0.01418
	A	0.01363	0.01376	0.01367
	B	0.01293	0.01328	0.01367
	B	0.01278	0.01307	0.01348
	C	0.00762	0.00806	0.00862
	C	0.00643	0.00646	0.00642
sky130_fd_sc_hs__xor3_4	A	0.01634	0.01678	0.01774
	A	0.01677	0.01716	0.01719
	B	0.01599	0.01657	0.01753
	B	0.01576	0.01629	0.01682
	C	0.01021	0.01093	0.01230
	C	0.00945	0.00969	0.00975