sky130_fd_sc_hs_tt_1.68v_25C.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_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00278	0.00267	0.00278	0.00291	0.00290	0.25611
sky130_fd_sc_hs__a2111oi_2	0.00528	0.00510	0.00427	0.00429	0.00429	0.45431
sky130_fd_sc_hs__a2111oi_4	0.01047	0.01022	0.00836	0.00822	0.00840	0.84019

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.01309	0.05288
sky130_fd_sc_hs__a2111oi_2	0.00000	0.02443	0.10576
sky130_fd_sc_hs__a2111oi_4	0.00000	0.04887	0.21152

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)	0.23101	1.26673	9.89421
	A2->Y (FR)	0.27436	1.33337	10.09870
	B1->Y (FR)	0.25453	1.31457	10.53700
	C1->Y (FR)	0.21965	1.29953	10.93900
	D1->Y (FR)	0.16589	1.23580	10.78110
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.21395	1.08703	9.73305
	A2->Y (FR)	0.26799	1.15088	9.86602
	B1->Y (FR)	0.23778	1.12441	10.24630
	C1->Y (FR)	0.19997	1.11274	10.75850
	D1->Y (FR)	0.12314	1.02850	10.57320
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.20393	0.93068	9.53875
	A2->Y (FR)	0.26210	1.00234	9.75560
	B1->Y (FR)	0.23274	0.98174	10.20340
	C1->Y (FR)	0.19008	0.96453	10.72280
	D1->Y (FR)	0.11447	0.88479	10.59400

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.03179	0.34999	2.83580
	A2->Y (RF)	0.03545	0.32258	2.56833
	B1->Y (RF)	0.02489	0.28388	2.28502
	C1->Y (RF)	0.02501	0.27544	2.26931
	D1->Y (RF)	0.02184	0.26505	2.25018
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.02760	0.31355	2.85280
	A2->Y (RF)	0.03341	0.28768	2.54100
	B1->Y (RF)	0.03622	0.37005	3.52602
	C1->Y (RF)	0.03497	0.35627	3.49566
	D1->Y (RF)	0.02647	0.33663	3.46642
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.02848	0.28540	2.92190
	A2->Y (RF)	0.03353	0.24679	2.42359
	B1->Y (RF)	0.03219	0.31261	3.29043
	C1->Y (RF)	0.03114	0.29538	3.25997
	D1->Y (RF)	0.02338	0.27850	3.29530

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00050	0.00028	0.00242
	A1	0.00821	0.00801	0.01013
	A2	0.00089	0.00075	0.00290
	A2	0.00959	0.00946	0.01160
	B1	0.00040	0.00024	0.00312
	B1	0.00855	0.00835	0.01095
	C1	0.00038	0.00023	0.00349
	C1	0.00764	0.00745	0.01051
	D1	0.00028	0.00064	0.00691
	D1	0.00517	0.00553	0.01181
sky130_fd_sc_hs__a2111oi_2	A1	0.00024	-0.00012	0.00400
	A1	0.01478	0.01437	0.01856
	A2	0.00169	0.00133	0.00546
	A2	0.01814	0.01778	0.02183
	B1	0.00095	0.00078	0.00401
	B1	0.01566	0.01541	0.01833
	C1	0.00105	0.00090	0.00468
	C1	0.01374	0.01354	0.01705
	D1	0.00089	0.00123	0.00958
	D1	0.01170	0.01190	0.01974

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00033	-0.00109	0.00726
	A1	0.02884	0.02815	0.03652
	A2	0.00228	0.00157	0.00990
	A2	0.03533	0.03470	0.04296
	B1	0.00124	0.00091	0.00750
	B1	0.03035	0.02997	0.03581
	C1	0.00132	0.00108	0.00877
	C1	0.02642	0.02608	0.03329
	D1	0.00098	0.00184	0.01812
	D1	0.02229	0.02260	0.03816

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01083	0.01068	0.01361
	A1	0.00333	0.00315	0.00615
	A2	0.01185	0.01165	0.01403
	A2	0.00331	0.00310	0.00553
	B1	0.00934	0.00932	0.01253
	B1	0.00183	0.00177	0.00521
	C1	0.00757	0.00767	0.01085
	C1	0.00092	0.00097	0.00435
	D1	0.00484	0.00504	0.00838
	D1	-0.00004	0.00014	0.00349

sky130_fd_sc_hs__a2111oi_2	**A1**	0.02031	0.01994	0.02572
	A1	0.00623	0.00586	0.01169
	A2	0.02227	0.02185	0.02650
	A2	0.00617	0.00570	0.01045
	B1	0.01634	0.01620	0.02040
	B1	0.00330	0.00307	0.00750
	C1	0.01265	0.01266	0.01681
	C1	0.00151	0.00141	0.00576
	D1	0.00608	0.00637	0.01076
	D1	-0.00119	-0.00090	0.00348
sky130_fd_sc_hs__a2111oi_4	**A1**	0.03971	0.03898	0.05029
	A1	0.01143	0.01071	0.02217
	A2	0.04371	0.04282	0.05238
	A2	0.01136	0.01048	0.02024
	B1	0.03212	0.03168	0.04032
	B1	0.00597	0.00548	0.01462
	C1	0.02456	0.02455	0.03311
	C1	0.00234	0.00214	0.01115
	D1	0.01202	0.01270	0.02164
	D1	-0.00245	-0.00184	0.00707

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)**	0.00142	0.00142	0.00141
	(A2 * B1 * D1 * !Y)	-0.00170	-0.00177	-0.00176
	(A2 * B1 * C1 * !D1 * !Y)	0.00142	0.00142	0.00141
	(A2 * B1 * C1 * !D1 * !Y)	-0.00170	-0.00177	-0.00176
	(A2 * B1 * !C1 * !D1 * !Y)	0.00142	0.00142	0.00141
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00169	-0.00178	-0.00177
	(A2 * !B1 * C1 * D1 * !Y)	0.00140	0.00142	0.00140
	(A2 * !B1 * C1 * D1 * !Y)	-0.00158	-0.00171	-0.00171
	(A2 * !B1 * C1 * !D1 * !Y)	0.00140	0.00142	0.00141
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00158	-0.00172	-0.00171
	(A2 * !B1 * !C1 * D1 * !Y)	0.00142	0.00142	0.00140
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00156	-0.00169	-0.00168
	(!A2 * B1 * D1 * !Y)	0.00134	0.00135	0.00134
	(!A2 * B1 * D1 * !Y)	-0.00181	-0.00181	-0.00181
	(!A2 * B1 * C1 * !D1 * !Y)	0.00133	0.00135	0.00134
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00133	0.00135	0.00134
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A2 * !B1 * C1 * D1 * !Y)	0.00133	0.00135	0.00134
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00134	0.00135	0.00135
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00134	0.00135	0.00135
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00048	0.00047	0.00046
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00207	-0.00207	-0.00210

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00280	0.00284	0.00281
	(A2 * B1 * D1 * !Y)	-0.00339	-0.00356	-0.00353
	(A2 * B1 * C1 * !D1 * !Y)	0.00280	0.00284	0.00281
	(A2 * B1 * C1 * !D1 * !Y)	-0.00338	-0.00356	-0.00353
	(A2 * B1 * !C1 * !D1 * !Y)	0.00280	0.00284	0.00281
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00334	-0.00355	-0.00353
	(A2 * !B1 * C1 * D1 * !Y)	0.00280	0.00284	0.00281
	(A2 * !B1 * C1 * D1 * !Y)	-0.00314	-0.00343	-0.00340
	(A2 * !B1 * C1 * !D1 * !Y)	0.00281	0.00284	0.00281
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00316	-0.00343	-0.00340
	(A2 * !B1 * !C1 * D1 * !Y)	0.00283	0.00284	0.00281
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00310	-0.00336	-0.00334
	(!A2 * B1 * D1 * !Y)	0.00269	0.00272	0.00271
	(!A2 * B1 * D1 * !Y)	-0.00359	-0.00361	-0.00360
	(!A2 * B1 * C1 * !D1 * !Y)	0.00267	0.00267	0.00268
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00360	-0.00360	-0.00360
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00267	0.00270	0.00268
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00360	-0.00362	-0.00360
	(!A2 * !B1 * C1 * D1 * !Y)	0.00267	0.00269	0.00268
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00359	-0.00362	-0.00360
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00267	0.00269	0.00268
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00360	-0.00361	-0.00360
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00267	0.00268	0.00268
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00360	-0.00361	-0.00360
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00097	0.00098	0.00093
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00409	-0.00412	-0.00419

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00562	0.00571	0.00564
	(A2 * B1 * D1 * !Y)	-0.00676	-0.00713	-0.00706
	(A2 * B1 * C1 * !D1 * !Y)	0.00562	0.00571	0.00564
	(A2 * B1 * C1 * !D1 * !Y)	-0.00676	-0.00713	-0.00706
	(A2 * B1 * !C1 * !D1 * !Y)	0.00563	0.00570	0.00564
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00671	-0.00712	-0.00706
	(A2 * !B1 * C1 * D1 * !Y)	0.00563	0.00570	0.00564
	(A2 * !B1 * C1 * D1 * !Y)	-0.00634	-0.00689	-0.00682
	(A2 * !B1 * C1 * !D1 * !Y)	0.00564	0.00570	0.00564
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00634	-0.00689	-0.00682
	(A2 * !B1 * !C1 * D1 * !Y)	0.00567	0.00570	0.00564
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00622	-0.00674	-0.00670
	(!A2 * B1 * D1 * !Y)	0.00539	0.00544	0.00542
	(!A2 * B1 * D1 * !Y)	-0.00721	-0.00725	-0.00722
	(!A2 * B1 * C1 * !D1 * !Y)	0.00538	0.00543	0.00541
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00719	-0.00724	-0.00722
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00540	0.00543	0.00541
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00722	-0.00724	-0.00722
	(!A2 * !B1 * C1 * D1 * !Y)	0.00539	0.00544	0.00542
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00721	-0.00725	-0.00722
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00539	0.00544	0.00542
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00721	-0.00725	-0.00722
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00535	0.00540	0.00536
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00722	-0.00726	-0.00722
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00187	0.00188	0.00179
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00827	-0.00833	-0.00847

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)**	-0.00141	-0.00141	-0.00140
	(A2 * B1 * D1 * !Y)	0.00177	0.00177	0.00176
	(A2 * B1 * C1 * !D1 * !Y)	-0.00141	-0.00141	-0.00140
	(A2 * B1 * C1 * !D1 * !Y)	0.00177	0.00177	0.00176
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00141	-0.00141	-0.00140
	(A2 * B1 * !C1 * !D1 * !Y)	0.00177	0.00178	0.00177
	(A2 * !B1 * C1 * D1 * !Y)	-0.00140	-0.00141	-0.00140
	(A2 * !B1 * C1 * D1 * !Y)	0.00170	0.00171	0.00171
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00140	-0.00141	-0.00140
	(A2 * !B1 * C1 * !D1 * !Y)	0.00170	0.00172	0.00171
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00140	-0.00141	-0.00140
	(A2 * !B1 * !C1 * D1 * !Y)	0.00167	0.00169	0.00168
	(!A2 * B1 * D1 * !Y)	-0.00130	-0.00135	-0.00134
	(!A2 * B1 * D1 * !Y)	0.00181	0.00182	0.00181
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00130	-0.00134	-0.00134
	(!A2 * B1 * C1 * !D1 * !Y)	0.00180	0.00181	0.00181
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00130	-0.00135	-0.00134
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00180	0.00184	0.00181
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00130	-0.00135	-0.00134
	(!A2 * !B1 * C1 * D1 * !Y)	0.00180	0.00184	0.00181
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00130	-0.00135	-0.00135
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00182	0.00182	0.00181
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00130	-0.00135	-0.00135
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00182	0.00182	0.00181
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00210	0.00213	0.00210

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00279	-0.00281	-0.00280
	(A2 * B1 * D1 * !Y)	0.00351	0.00356	0.00353
	(A2 * B1 * C1 * !D1 * !Y)	-0.00279	-0.00281	-0.00280
	(A2 * B1 * C1 * !D1 * !Y)	0.00350	0.00356	0.00353
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00280	-0.00281	-0.00280
	(A2 * B1 * !C1 * !D1 * !Y)	0.00351	0.00355	0.00353
	(A2 * !B1 * C1 * D1 * !Y)	-0.00280	-0.00281	-0.00280
	(A2 * !B1 * C1 * D1 * !Y)	0.00339	0.00343	0.00340
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00280	-0.00282	-0.00280
	(A2 * !B1 * C1 * !D1 * !Y)	0.00339	0.00343	0.00340
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00280	-0.00281	-0.00280
	(A2 * !B1 * !C1 * D1 * !Y)	0.00333	0.00336	0.00334
	(!A2 * B1 * D1 * !Y)	-0.00257	-0.00271	-0.00271
	(!A2 * B1 * D1 * !Y)	0.00360	0.00363	0.00361
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00258	-0.00267	-0.00268
	(!A2 * B1 * C1 * !D1 * !Y)	0.00362	0.00364	0.00361
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00257	-0.00270	-0.00268
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00362	0.00365	0.00361
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00258	-0.00269	-0.00268
	(!A2 * !B1 * C1 * D1 * !Y)	0.00362	0.00364	0.00361
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00257	-0.00269	-0.00268
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00360	0.00365	0.00361
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00256	-0.00268	-0.00268
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00360	0.00365	0.00361
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00091	-0.00092	-0.00090
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00421	0.00426	0.00420

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00562	-0.00566	-0.00563
	(A2 * B1 * D1 * !Y)	0.00704	0.00714	0.00706
	(A2 * B1 * C1 * !D1 * !Y)	-0.00561	-0.00566	-0.00563
	(A2 * B1 * C1 * !D1 * !Y)	0.00702	0.00714	0.00706
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00562	-0.00565	-0.00563
	(A2 * B1 * !C1 * !D1 * !Y)	0.00703	0.00712	0.00706
	(A2 * !B1 * C1 * D1 * !Y)	-0.00562	-0.00565	-0.00563
	(A2 * !B1 * C1 * D1 * !Y)	0.00681	0.00689	0.00682
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00562	-0.00565	-0.00562
	(A2 * !B1 * C1 * !D1 * !Y)	0.00681	0.00689	0.00682
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00563	-0.00565	-0.00563
	(A2 * !B1 * !C1 * D1 * !Y)	0.00669	0.00674	0.00670
	(!A2 * B1 * D1 * !Y)	-0.00515	-0.00544	-0.00542
	(!A2 * B1 * D1 * !Y)	0.00721	0.00731	0.00724
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00514	-0.00543	-0.00541
	(!A2 * B1 * C1 * !D1 * !Y)	0.00720	0.00731	0.00724
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00517	-0.00543	-0.00541
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00726	0.00732	0.00725
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00517	-0.00544	-0.00542
	(!A2 * !B1 * C1 * D1 * !Y)	0.00726	0.00731	0.00724
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00515	-0.00541	-0.00542
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00723	0.00729	0.00724
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00515	-0.00540	-0.00536
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00722	0.00730	0.00725
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00174	-0.00177	-0.00174
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00845	0.00861	0.00848

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)**	0.00149	0.00151	0.00149
	(A1 * B1 * D1 * !Y)	-0.00171	-0.00178	-0.00178
	(A1 * B1 * C1 * !D1 * !Y)	0.00149	0.00151	0.00149
	(A1 * B1 * C1 * !D1 * !Y)	-0.00170	-0.00178	-0.00178
	(A1 * B1 * !C1 * !D1 * !Y)	0.00149	0.00151	0.00149
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00169	-0.00178	-0.00178
	(A1 * !B1 * C1 * D1 * !Y)	0.00149	0.00150	0.00149
	(A1 * !B1 * C1 * D1 * !Y)	-0.00160	-0.00173	-0.00172
	(A1 * !B1 * C1 * !D1 * !Y)	0.00149	0.00150	0.00149
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00160	-0.00173	-0.00172
	(A1 * !B1 * !C1 * D1 * !Y)	0.00150	0.00150	0.00149
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00157	-0.00169	-0.00169
	(!A1 * B1 * !Y)	0.00142	0.00143	0.00142
	(!A1 * B1 * !Y)	-0.00181	-0.00183	-0.00182
	(!A1 * !B1 * C1 * !Y)	0.00142	0.00143	0.00142
	(!A1 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00182
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00142	0.00143	0.00142
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00181	-0.00182	-0.00182
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00142	0.00143	0.00142
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00181	-0.00182	-0.00182

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00282	0.00286	0.00282
	(A1 * B1 * D1 * !Y)	-0.00338	-0.00355	-0.00352
	(A1 * B1 * C1 * !D1 * !Y)	0.00282	0.00286	0.00282
	(A1 * B1 * C1 * !D1 * !Y)	-0.00337	-0.00355	-0.00352
	(A1 * B1 * !C1 * !D1 * !Y)	0.00282	0.00286	0.00282
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00334	-0.00355	-0.00352
	(A1 * !B1 * C1 * D1 * !Y)	0.00283	0.00285	0.00282
	(A1 * !B1 * C1 * D1 * !Y)	-0.00316	-0.00342	-0.00339
	(A1 * !B1 * C1 * !D1 * !Y)	0.00283	0.00285	0.00282
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00316	-0.00342	-0.00339
	(A1 * !B1 * !C1 * D1 * !Y)	0.00285	0.00286	0.00283
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00311	-0.00336	-0.00334
	(!A1 * B1 * !Y)	0.00270	0.00275	0.00271
	(!A1 * B1 * !Y)	-0.00357	-0.00359	-0.00359
	(!A1 * !B1 * C1 * !Y)	0.00270	0.00270	0.00271
	(!A1 * !B1 * C1 * !Y)	-0.00357	-0.00358	-0.00359
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00270	0.00274	0.00271
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00357	-0.00359	-0.00359
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00270	0.00273	0.00271
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00357	-0.00360	-0.00359

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00567	0.00574	0.00567
	(A1 * B1 * D1 * !Y)	-0.00677	-0.00711	-0.00705
	(A1 * B1 * C1 * !D1 * !Y)	0.00569	0.00574	0.00567
	(A1 * B1 * C1 * !D1 * !Y)	-0.00679	-0.00710	-0.00705
	(A1 * B1 * !C1 * !D1 * !Y)	0.00569	0.00574	0.00567
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00673	-0.00710	-0.00705
	(A1 * !B1 * C1 * D1 * !Y)	0.00569	0.00574	0.00567
	(A1 * !B1 * C1 * D1 * !Y)	-0.00637	-0.00686	-0.00682
	(A1 * !B1 * C1 * !D1 * !Y)	0.00570	0.00574	0.00567
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00637	-0.00686	-0.00682
	(A1 * !B1 * !C1 * D1 * !Y)	0.00573	0.00574	0.00568
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00625	-0.00673	-0.00670
	(!A1 * B1 * !Y)	0.00536	0.00541	0.00538
	(!A1 * B1 * !Y)	-0.00720	-0.00724	-0.00721
	(!A1 * !B1 * C1 * !Y)	0.00540	0.00541	0.00542
	(!A1 * !B1 * C1 * !Y)	-0.00720	-0.00721	-0.00721
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00537	0.00545	0.00540
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00719	-0.00724	-0.00721
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00539	0.00546	0.00541
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00719	-0.00724	-0.00721

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)**	-0.00148	-0.00149	-0.00149
	(A1 * B1 * D1 * !Y)	0.00177	0.00178	0.00178
	(A1 * B1 * C1 * !D1 * !Y)	-0.00148	-0.00149	-0.00149
	(A1 * B1 * C1 * !D1 * !Y)	0.00177	0.00178	0.00178
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00148	-0.00149	-0.00149
	(A1 * B1 * !C1 * !D1 * !Y)	0.00177	0.00178	0.00178
	(A1 * !B1 * C1 * D1 * !Y)	-0.00148	-0.00149	-0.00148
	(A1 * !B1 * C1 * D1 * !Y)	0.00171	0.00173	0.00172
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00148	-0.00149	-0.00148
	(A1 * !B1 * C1 * !D1 * !Y)	0.00171	0.00173	0.00172
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00148	-0.00149	-0.00148
	(A1 * !B1 * !C1 * D1 * !Y)	0.00168	0.00169	0.00169
	(!A1 * B1 * !Y)	-0.00138	-0.00143	-0.00142
	(!A1 * B1 * !Y)	0.00181	0.00184	0.00182
	(!A1 * !B1 * C1 * !Y)	-0.00138	-0.00143	-0.00142
	(!A1 * !B1 * C1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00138	-0.00143	-0.00142
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00134	-0.00143	-0.00142
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00186	0.00184	0.00182

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00282	-0.00283	-0.00282
	(A1 * B1 * D1 * !Y)	0.00352	0.00356	0.00352
	(A1 * B1 * C1 * !D1 * !Y)	-0.00282	-0.00283	-0.00282
	(A1 * B1 * C1 * !D1 * !Y)	0.00352	0.00355	0.00352
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00282	-0.00283	-0.00282
	(A1 * B1 * !C1 * !D1 * !Y)	0.00352	0.00355	0.00352
	(A1 * !B1 * C1 * D1 * !Y)	-0.00281	-0.00283	-0.00282
	(A1 * !B1 * C1 * D1 * !Y)	0.00338	0.00342	0.00339
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00281	-0.00283	-0.00282
	(A1 * !B1 * C1 * !D1 * !Y)	0.00338	0.00342	0.00339
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00281	-0.00283	-0.00282
	(A1 * !B1 * !C1 * D1 * !Y)	0.00333	0.00336	0.00334
	(!A1 * B1 * !Y)	-0.00260	-0.00270	-0.00271
	(!A1 * B1 * !Y)	0.00358	0.00359	0.00360
	(!A1 * !B1 * C1 * !Y)	-0.00260	-0.00270	-0.00271
	(!A1 * !B1 * C1 * !Y)	0.00358	0.00359	0.00360
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00260	-0.00270	-0.00271
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00358	0.00359	0.00360
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00252	-0.00272	-0.00271
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00369	0.00364	0.00360

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00567	-0.00568	-0.00566
	(A1 * B1 * D1 * !Y)	0.00706	0.00711	0.00705
	(A1 * B1 * C1 * !D1 * !Y)	-0.00567	-0.00568	-0.00566
	(A1 * B1 * C1 * !D1 * !Y)	0.00706	0.00710	0.00705
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00567	-0.00568	-0.00566
	(A1 * B1 * !C1 * !D1 * !Y)	0.00706	0.00710	0.00705
	(A1 * !B1 * C1 * D1 * !Y)	-0.00565	-0.00568	-0.00566
	(A1 * !B1 * C1 * D1 * !Y)	0.00679	0.00686	0.00682
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00565	-0.00568	-0.00566
	(A1 * !B1 * C1 * !D1 * !Y)	0.00680	0.00686	0.00682
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00566	-0.00568	-0.00566
	(A1 * !B1 * !C1 * D1 * !Y)	0.00669	0.00673	0.00670
	(!A1 * B1 * !Y)	-0.00522	-0.00541	-0.00538
	(!A1 * B1 * !Y)	0.00721	0.00724	0.00723
	(!A1 * !B1 * C1 * !Y)	-0.00522	-0.00541	-0.00542
	(!A1 * !B1 * C1 * !Y)	0.00721	0.00724	0.00723
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00521	-0.00540	-0.00540
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00721	0.00724	0.00723
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00502	-0.00544	-0.00541
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00746	0.00731	0.00723

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)**	0.00148	0.00149	0.00147
	(A1 * A2 * C1 * D1 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * C1 * !D1 * !Y)	0.00153	0.00151	0.00147
	(A1 * A2 * C1 * !D1 * !Y)	-0.00125	-0.00125	-0.00124
	(A1 * A2 * !C1 * D1 * !Y)	0.00146	0.00150	0.00146
	(A1 * A2 * !C1 * D1 * !Y)	-0.00118	-0.00118	-0.00118
	(A1 * A2 * !C1 * !D1 * !Y)	0.00145	0.00148	0.00146
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00097	-0.00099	-0.00097
	(A1 * !A2 * C1 * D1 * !Y)	0.00145	0.00145	0.00145
	(A1 * !A2 * C1 * D1 * !Y)	-0.00169	-0.00175	-0.00174
	(A1 * !A2 * C1 * !D1 * !Y)	0.00154	0.00145	0.00145
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00158	-0.00175	-0.00175
	(A1 * !A2 * !C1 * D1 * !Y)	0.00150	0.00147	0.00145
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00149	-0.00168	-0.00167
	(!A1 * C1 * D1 * !Y)	0.00145	0.00145	0.00145
	(!A1 * C1 * D1 * !Y)	-0.00169	-0.00175	-0.00174
	(!A1 * C1 * !D1 * !Y)	0.00153	0.00145	0.00145
	(!A1 * C1 * !D1 * !Y)	-0.00159	-0.00175	-0.00175
	(!A1 * !C1 * D1 * !Y)	0.00150	0.00147	0.00145
	(!A1 * !C1 * D1 * !Y)	-0.00150	-0.00168	-0.00167

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00166	0.00169	0.00166
	(A1 * A2 * C1 * D1 * !Y)	-0.00251	-0.00252	-0.00253
	(A1 * A2 * C1 * !D1 * !Y)	0.00171	0.00171	0.00166
	(A1 * A2 * C1 * !D1 * !Y)	-0.00246	-0.00247	-0.00245
	(A1 * A2 * !C1 * D1 * !Y)	0.00167	0.00169	0.00167
	(A1 * A2 * !C1 * D1 * !Y)	-0.00238	-0.00239	-0.00237
	(A1 * A2 * !C1 * !D1 * !Y)	0.00165	0.00168	0.00165
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00195	-0.00197	-0.00194
	(A1 * !A2 * C1 * D1 * !Y)	0.00166	0.00166	0.00165
	(A1 * !A2 * C1 * D1 * !Y)	-0.00337	-0.00350	-0.00348
	(A1 * !A2 * C1 * !D1 * !Y)	0.00175	0.00166	0.00165
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00325	-0.00350	-0.00349
	(A1 * !A2 * !C1 * D1 * !Y)	0.00173	0.00167	0.00165
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00304	-0.00333	-0.00334
	(!A1 * C1 * D1 * !Y)	0.00165	0.00166	0.00165
	(!A1 * C1 * D1 * !Y)	-0.00337	-0.00350	-0.00348
	(!A1 * C1 * !D1 * !Y)	0.00174	0.00166	0.00165
	(!A1 * C1 * !D1 * !Y)	-0.00326	-0.00350	-0.00349
	(!A1 * !C1 * D1 * !Y)	0.00173	0.00167	0.00165
	(!A1 * !C1 * D1 * !Y)	-0.00305	-0.00333	-0.00334

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00322	0.00325	0.00318
	(A1 * A2 * C1 * D1 * !Y)	-0.00515	-0.00519	-0.00516
	(A1 * A2 * C1 * !D1 * !Y)	0.00336	0.00332	0.00319
	(A1 * A2 * C1 * !D1 * !Y)	-0.00500	-0.00501	-0.00500
	(A1 * A2 * !C1 * D1 * !Y)	0.00321	0.00326	0.00323
	(A1 * A2 * !C1 * D1 * !Y)	-0.00479	-0.00481	-0.00480
	(A1 * A2 * !C1 * !D1 * !Y)	0.00317	0.00321	0.00317
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00402	-0.00406	-0.00402
	(A1 * !A2 * C1 * D1 * !Y)	0.00319	0.00319	0.00317
	(A1 * !A2 * C1 * D1 * !Y)	-0.00689	-0.00720	-0.00716
	(A1 * !A2 * C1 * !D1 * !Y)	0.00346	0.00319	0.00317
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00654	-0.00720	-0.00716
	(A1 * !A2 * !C1 * D1 * !Y)	0.00336	0.00320	0.00318
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00617	-0.00686	-0.00682
	(!A1 * C1 * D1 * !Y)	0.00319	0.00318	0.00317
	(!A1 * C1 * D1 * !Y)	-0.00690	-0.00720	-0.00716
	(!A1 * C1 * !D1 * !Y)	0.00344	0.00318	0.00317
	(!A1 * C1 * !D1 * !Y)	-0.00658	-0.00719	-0.00717
	(!A1 * !C1 * D1 * !Y)	0.00336	0.00320	0.00318
	(!A1 * !C1 * D1 * !Y)	-0.00620	-0.00687	-0.00684

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)**	-0.00147	-0.00147	-0.00146
	(A1 * A2 * C1 * D1 * !Y)	0.00128	0.00129	0.00128
	(A1 * A2 * C1 * !D1 * !Y)	-0.00146	-0.00147	-0.00146
	(A1 * A2 * C1 * !D1 * !Y)	0.00125	0.00125	0.00124
	(A1 * A2 * !C1 * D1 * !Y)	-0.00146	-0.00146	-0.00146
	(A1 * A2 * !C1 * D1 * !Y)	0.00118	0.00118	0.00118
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00136	-0.00137	-0.00138
	(A1 * A2 * !C1 * !D1 * !Y)	0.00105	0.00106	0.00104
	(A1 * !A2 * C1 * D1 * !Y)	-0.00145	-0.00145	-0.00145
	(A1 * !A2 * C1 * D1 * !Y)	0.00174	0.00176	0.00174
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00145	-0.00145	-0.00145
	(A1 * !A2 * C1 * !D1 * !Y)	0.00175	0.00175	0.00175
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00145	-0.00145	-0.00144
	(A1 * !A2 * !C1 * D1 * !Y)	0.00167	0.00168	0.00167
	(!A1 * C1 * D1 * !Y)	-0.00145	-0.00145	-0.00145
	(!A1 * C1 * D1 * !Y)	0.00174	0.00176	0.00174
	(!A1 * C1 * !D1 * !Y)	-0.00145	-0.00145	-0.00145
	(!A1 * C1 * !D1 * !Y)	0.00175	0.00175	0.00175
	(!A1 * !C1 * D1 * !Y)	-0.00144	-0.00145	-0.00144
	(!A1 * !C1 * D1 * !Y)	0.00166	0.00168	0.00167

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00164	-0.00164	-0.00165
	(A1 * A2 * C1 * D1 * !Y)	0.00251	0.00252	0.00253
	(A1 * A2 * C1 * !D1 * !Y)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * C1 * !D1 * !Y)	0.00246	0.00247	0.00245
	(A1 * A2 * !C1 * D1 * !Y)	-0.00167	-0.00167	-0.00166
	(A1 * A2 * !C1 * D1 * !Y)	0.00238	0.00239	0.00237
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00148	-0.00147	-0.00147
	(A1 * A2 * !C1 * !D1 * !Y)	0.00213	0.00212	0.00211
	(A1 * !A2 * C1 * D1 * !Y)	-0.00165	-0.00165	-0.00164
	(A1 * !A2 * C1 * D1 * !Y)	0.00348	0.00350	0.00348
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00165	-0.00165	-0.00164
	(A1 * !A2 * C1 * !D1 * !Y)	0.00348	0.00350	0.00349
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00165	-0.00165	-0.00165
	(A1 * !A2 * !C1 * D1 * !Y)	0.00333	0.00333	0.00334
	(!A1 * C1 * D1 * !Y)	-0.00165	-0.00165	-0.00164
	(!A1 * C1 * D1 * !Y)	0.00348	0.00350	0.00348
	(!A1 * C1 * !D1 * !Y)	-0.00165	-0.00165	-0.00164
	(!A1 * C1 * !D1 * !Y)	0.00349	0.00350	0.00349
	(!A1 * !C1 * D1 * !Y)	-0.00165	-0.00165	-0.00165
	(!A1 * !C1 * D1 * !Y)	0.00333	0.00333	0.00334

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00316	-0.00318	-0.00317
	(A1 * A2 * C1 * D1 * !Y)	0.00515	0.00519	0.00516
	(A1 * A2 * C1 * !D1 * !Y)	-0.00316	-0.00317	-0.00317
	(A1 * A2 * C1 * !D1 * !Y)	0.00500	0.00501	0.00500
	(A1 * A2 * !C1 * D1 * !Y)	-0.00319	-0.00321	-0.00320
	(A1 * A2 * !C1 * D1 * !Y)	0.00479	0.00481	0.00480
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00284	-0.00285	-0.00283
	(A1 * A2 * !C1 * !D1 * !Y)	0.00433	0.00434	0.00432
	(A1 * !A2 * C1 * D1 * !Y)	-0.00317	-0.00318	-0.00316
	(A1 * !A2 * C1 * D1 * !Y)	0.00718	0.00720	0.00716
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00314	-0.00317	-0.00316
	(A1 * !A2 * C1 * !D1 * !Y)	0.00710	0.00720	0.00716
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00318	-0.00319	-0.00317
	(A1 * !A2 * !C1 * D1 * !Y)	0.00683	0.00686	0.00682
	(!A1 * C1 * D1 * !Y)	-0.00315	-0.00318	-0.00316
	(!A1 * C1 * D1 * !Y)	0.00712	0.00721	0.00716
	(!A1 * C1 * !D1 * !Y)	-0.00315	-0.00317	-0.00316
	(!A1 * C1 * !D1 * !Y)	0.00713	0.00720	0.00717
	(!A1 * !C1 * D1 * !Y)	-0.00318	-0.00319	-0.00317
	(!A1 * !C1 * D1 * !Y)	0.00684	0.00687	0.00684

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)**	0.00164	0.00165	0.00157
	(A1 * B1 * D1 * !Y)	-0.00110	-0.00110	-0.00110
	(A1 * B1 * !D1 * !Y)	0.00153	0.00156	0.00153
	(A1 * B1 * !D1 * !Y)	-0.00092	-0.00094	-0.00093
	(A1 * A2 * !B1 * D1 * !Y)	0.00172	0.00157	0.00154
	(A1 * A2 * !B1 * D1 * !Y)	-0.00112	-0.00118	-0.00118
	(A1 * A2 * !B1 * !D1 * !Y)	0.00154	0.00157	0.00153
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00091	-0.00093	-0.00092
	(A1 * !A2 * !B1 * D1 * !Y)	0.00184	0.00156	0.00152
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00135	-0.00168	-0.00170
	(!A1 * B1 * D1 * !Y)	0.00167	0.00168	0.00158
	(!A1 * B1 * D1 * !Y)	-0.00111	-0.00111	-0.00110
	(!A1 * B1 * !D1 * !Y)	0.00154	0.00156	0.00153
	(!A1 * B1 * !D1 * !Y)	-0.00092	-0.00093	-0.00093
	(!A1 * !B1 * D1 * !Y)	0.00184	0.00156	0.00152
	(!A1 * !B1 * D1 * !Y)	-0.00135	-0.00168	-0.00170

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00169	0.00176	0.00165
	(A1 * B1 * D1 * !Y)	-0.00232	-0.00232	-0.00232
	(A1 * B1 * !D1 * !Y)	0.00158	0.00161	0.00158
	(A1 * B1 * !D1 * !Y)	-0.00200	-0.00203	-0.00200
	(A1 * A2 * !B1 * D1 * !Y)	0.00188	0.00164	0.00159
	(A1 * A2 * !B1 * D1 * !Y)	-0.00249	-0.00250	-0.00249
	(A1 * A2 * !B1 * !D1 * !Y)	0.00159	0.00162	0.00158
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00198	-0.00201	-0.00198
	(A1 * !A2 * !B1 * D1 * !Y)	0.00224	0.00161	0.00157
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00291	-0.00359	-0.00359
	(!A1 * B1 * D1 * !Y)	0.00177	0.00184	0.00168
	(!A1 * B1 * D1 * !Y)	-0.00234	-0.00234	-0.00235
	(!A1 * B1 * !D1 * !Y)	0.00159	0.00161	0.00158
	(!A1 * B1 * !D1 * !Y)	-0.00200	-0.00203	-0.00200
	(!A1 * !B1 * D1 * !Y)	0.00224	0.00161	0.00157
	(!A1 * !B1 * D1 * !Y)	-0.00291	-0.00359	-0.00359

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00342	0.00345	0.00321
	(A1 * B1 * D1 * !Y)	-0.00457	-0.00463	-0.00458
	(A1 * B1 * !D1 * !Y)	0.00309	0.00312	0.00306
	(A1 * B1 * !D1 * !Y)	-0.00390	-0.00394	-0.00392
	(A1 * A2 * !B1 * D1 * !Y)	0.00386	0.00322	0.00308
	(A1 * A2 * !B1 * D1 * !Y)	-0.00469	-0.00488	-0.00484
	(A1 * A2 * !B1 * !D1 * !Y)	0.00315	0.00319	0.00308
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00388	-0.00392	-0.00389
	(A1 * !A2 * !B1 * D1 * !Y)	0.00454	0.00311	0.00303
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00555	-0.00698	-0.00705
	(!A1 * B1 * D1 * !Y)	0.00355	0.00360	0.00328
	(!A1 * B1 * D1 * !Y)	-0.00462	-0.00467	-0.00462
	(!A1 * B1 * !D1 * !Y)	0.00312	0.00317	0.00307
	(!A1 * B1 * !D1 * !Y)	-0.00389	-0.00396	-0.00393
	(!A1 * !B1 * D1 * !Y)	0.00453	0.00311	0.00303
	(!A1 * !B1 * D1 * !Y)	-0.00555	-0.00698	-0.00706

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)**	-0.00152	-0.00153	-0.00153
	(A1 * B1 * D1 * !Y)	0.00110	0.00110	0.00110
	(A1 * B1 * !D1 * !Y)	-0.00152	-0.00152	-0.00151
	(A1 * B1 * !D1 * !Y)	0.00095	0.00095	0.00095
	(A1 * A2 * !B1 * D1 * !Y)	-0.00153	-0.00153	-0.00153
	(A1 * A2 * !B1 * D1 * !Y)	0.00118	0.00118	0.00118
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00141	-0.00143	-0.00151
	(A1 * A2 * !B1 * !D1 * !Y)	0.00100	0.00101	0.00094
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * !A2 * !B1 * D1 * !Y)	0.00169	0.00170	0.00170
	(!A1 * B1 * D1 * !Y)	-0.00153	-0.00153	-0.00153
	(!A1 * B1 * D1 * !Y)	0.00111	0.00111	0.00110
	(!A1 * B1 * !D1 * !Y)	-0.00151	-0.00152	-0.00151
	(!A1 * B1 * !D1 * !Y)	0.00095	0.00096	0.00095
	(!A1 * !B1 * D1 * !Y)	-0.00152	-0.00152	-0.00151
	(!A1 * !B1 * D1 * !Y)	0.00169	0.00170	0.00170

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00159	-0.00159	-0.00159
	(A1 * B1 * D1 * !Y)	0.00232	0.00232	0.00232
	(A1 * B1 * !D1 * !Y)	-0.00154	-0.00155	-0.00152
	(A1 * B1 * !D1 * !Y)	0.00204	0.00205	0.00206
	(A1 * A2 * !B1 * D1 * !Y)	-0.00159	-0.00159	-0.00159
	(A1 * A2 * !B1 * D1 * !Y)	0.00250	0.00250	0.00249
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00138	-0.00139	-0.00150
	(A1 * A2 * !B1 * !D1 * !Y)	0.00212	0.00213	0.00206
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00157	-0.00157	-0.00155
	(A1 * !A2 * !B1 * D1 * !Y)	0.00360	0.00359	0.00359
	(!A1 * B1 * D1 * !Y)	-0.00159	-0.00159	-0.00159
	(!A1 * B1 * D1 * !Y)	0.00234	0.00234	0.00235
	(!A1 * B1 * !D1 * !Y)	-0.00153	-0.00154	-0.00151
	(!A1 * B1 * !D1 * !Y)	0.00203	0.00206	0.00207
	(!A1 * !B1 * D1 * !Y)	-0.00156	-0.00157	-0.00155
	(!A1 * !B1 * D1 * !Y)	0.00357	0.00359	0.00359

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00308	-0.00310	-0.00309
	(A1 * B1 * D1 * !Y)	0.00457	0.00463	0.00458
	(A1 * B1 * !D1 * !Y)	-0.00300	-0.00301	-0.00296
	(A1 * B1 * !D1 * !Y)	0.00402	0.00404	0.00404
	(A1 * A2 * !B1 * D1 * !Y)	-0.00308	-0.00309	-0.00307
	(A1 * A2 * !B1 * D1 * !Y)	0.00486	0.00488	0.00484
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00276	-0.00279	-0.00294
	(A1 * A2 * !B1 * !D1 * !Y)	0.00411	0.00411	0.00400
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00301	-0.00303	-0.00300
	(A1 * !A2 * !B1 * D1 * !Y)	0.00699	0.00707	0.00705
	(!A1 * B1 * D1 * !Y)	-0.00308	-0.00311	-0.00309
	(!A1 * B1 * D1 * !Y)	0.00462	0.00467	0.00462
	(!A1 * B1 * !D1 * !Y)	-0.00300	-0.00301	-0.00295
	(!A1 * B1 * !D1 * !Y)	0.00403	0.00405	0.00405
	(!A1 * !B1 * D1 * !Y)	-0.00302	-0.00303	-0.00300
	(!A1 * !B1 * D1 * !Y)	0.00700	0.00707	0.00706

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00170	0.00173	0.00170
	(A1 * C1 * !Y)	-0.00085	-0.00086	-0.00085
	(A1 * B1 * !C1 * !Y)	0.00170	0.00173	0.00170
	(A1 * B1 * !C1 * !Y)	-0.00085	-0.00086	-0.00085
	(A1 * A2 * !B1 * !C1 * !Y)	0.00170	0.00173	0.00170
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00085	-0.00086	-0.00085
	(!A1 * C1 * !Y)	0.00170	0.00173	0.00170
	(!A1 * C1 * !Y)	-0.00085	-0.00086	-0.00085
	(!A1 * B1 * !C1 * !Y)	0.00170	0.00173	0.00170
	(!A1 * B1 * !C1 * !Y)	-0.00085	-0.00086	-0.00085

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00193	0.00196	0.00193
	(A1 * C1 * !Y)	-0.00173	-0.00175	-0.00172
	(A1 * B1 * !C1 * !Y)	0.00193	0.00196	0.00193
	(A1 * B1 * !C1 * !Y)	-0.00172	-0.00175	-0.00172
	(A1 * A2 * !B1 * !C1 * !Y)	0.00193	0.00196	0.00193
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00172	-0.00175	-0.00172
	(!A1 * C1 * !Y)	0.00193	0.00196	0.00193
	(!A1 * C1 * !Y)	-0.00173	-0.00175	-0.00173
	(!A1 * B1 * !C1 * !Y)	0.00193	0.00196	0.00193
	(!A1 * B1 * !C1 * !Y)	-0.00172	-0.00175	-0.00172
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00383	0.00386	0.00383
	(A1 * C1 * !Y)	-0.00340	-0.00342	-0.00339
	(A1 * B1 * !C1 * !Y)	0.00383	0.00386	0.00382
	(A1 * B1 * !C1 * !Y)	-0.00339	-0.00341	-0.00338
	(A1 * A2 * !B1 * !C1 * !Y)	0.00384	0.00389	0.00383
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00342	-0.00344	-0.00338
	(!A1 * C1 * !Y)	0.00385	0.00386	0.00383
	(!A1 * C1 * !Y)	-0.00343	-0.00342	-0.00339
	(!A1 * B1 * !C1 * !Y)	0.00384	0.00389	0.00383
	(!A1 * B1 * !C1 * !Y)	-0.00342	-0.00344	-0.00338

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00165	-0.00166	-0.00169
	(A1 * C1 * !Y)	0.00090	0.00090	0.00086
	(A1 * B1 * !C1 * !Y)	-0.00157	-0.00158	-0.00168
	(A1 * B1 * !C1 * !Y)	0.00094	0.00094	0.00086
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00138	-0.00141	-0.00163
	(A1 * A2 * !B1 * !C1 * !Y)	0.00106	0.00106	0.00090
	(!A1 * C1 * !Y)	-0.00165	-0.00166	-0.00169
	(!A1 * C1 * !Y)	0.00090	0.00090	0.00086
	(!A1 * B1 * !C1 * !Y)	-0.00157	-0.00158	-0.00168
	(!A1 * B1 * !C1 * !Y)	0.00094	0.00094	0.00086
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00176	-0.00178	-0.00191
	(A1 * C1 * !Y)	0.00189	0.00189	0.00177
	(A1 * B1 * !C1 * !Y)	-0.00160	-0.00162	-0.00188
	(A1 * B1 * !C1 * !Y)	0.00196	0.00196	0.00176
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00124	-0.00128	-0.00178
	(A1 * A2 * !B1 * !C1 * !Y)	0.00218	0.00219	0.00183
	(!A1 * C1 * !Y)	-0.00175	-0.00178	-0.00191
	(!A1 * C1 * !Y)	0.00188	0.00189	0.00177
	(!A1 * B1 * !C1 * !Y)	-0.00159	-0.00162	-0.00188
	(!A1 * B1 * !C1 * !Y)	0.00195	0.00196	0.00176
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00354	-0.00357	-0.00380
	(A1 * C1 * !Y)	0.00366	0.00366	0.00346
	(A1 * B1 * !C1 * !Y)	-0.00319	-0.00323	-0.00372
	(A1 * B1 * !C1 * !Y)	0.00385	0.00385	0.00348
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00252	-0.00259	-0.00354
	(A1 * A2 * !B1 * !C1 * !Y)	0.00422	0.00425	0.00359
	(!A1 * C1 * !Y)	-0.00354	-0.00357	-0.00380
	(!A1 * C1 * !Y)	0.00367	0.00367	0.00346
	(!A1 * B1 * !C1 * !Y)	-0.00317	-0.00323	-0.00372
	(!A1 * B1 * !C1 * !Y)	0.00382	0.00386	0.00348

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00254	0.00267	0.00255	0.00260	0.00256	1.07657
sky130_fd_sc_hs__a2111o_2	0.00283	0.00294	0.00277	0.00286	0.00298	2.05301
sky130_fd_sc_hs__a2111o_4	0.00479	0.00471	0.00491	0.00492	0.00486	3.92683

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	0.03904	0.14085
sky130_fd_sc_hs__a2111o_2	0.00000	0.03423	0.13054
sky130_fd_sc_hs__a2111o_4	0.00000	0.09921	0.29409

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)	0.08842	0.65385	6.40532
	A2->X (RR)	0.09266	0.65254	6.42446
	B1->X (RR)	0.07148	0.61166	6.24291
	C1->X (RR)	0.06956	0.59868	6.18076
	D1->X (RR)	0.06356	0.57896	6.16875
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.09057	0.57339	6.37189
	A2->X (RR)	0.09473	0.56673	6.37409
	B1->X (RR)	0.07067	0.52670	6.20546
	C1->X (RR)	0.06791	0.51223	6.13641
	D1->X (RR)	0.06348	0.49643	6.11219
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.09782	0.51505	6.45914
	A2->X (RR)	0.10352	0.50945	6.46460
	B1->X (RR)	0.06975	0.44994	6.23483
	C1->X (RR)	0.06784	0.43779	6.16449
	D1->X (RR)	0.06177	0.41844	6.14211

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.31212	0.79708	4.93320
	A2->X (FF)	0.33953	0.83583	4.99382
	B1->X (FF)	0.31382	0.80823	5.14025
	C1->X (FF)	0.28192	0.79634	5.22893
	D1->X (FF)	0.23236	0.75599	5.12422
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.37114	0.85086	5.08784
	A2->X (FF)	0.39466	0.88716	5.15882
	B1->X (FF)	0.36963	0.85889	5.31930
	C1->X (FF)	0.33455	0.84439	5.43349
	D1->X (FF)	0.28657	0.80530	5.33257
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.39471	0.83484	5.14789
	A2->X (FF)	0.44597	0.90028	5.24032
	B1->X (FF)	0.42296	0.87818	5.43781
	C1->X (FF)	0.38602	0.86577	5.59996
	D1->X (FF)	0.30795	0.79945	5.46075

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.01293	0.01316	0.02529
	A1	0.00599	0.00622	0.01852
	A2	0.01368	0.01376	0.02370
	A2	0.00599	0.00606	0.01617
	B1	0.01136	0.01172	0.02374
	B1	0.00462	0.00502	0.01810
	C1	0.00979	0.01023	0.02197
	C1	0.00385	0.00427	0.01700
	D1	0.00734	0.00797	0.02506
	D1	0.00298	0.00361	0.02101
sky130_fd_sc_hs__a2111o_2	A1	0.01642	0.01681	0.02818
	A1	0.00867	0.00906	0.02085
	A2	0.01742	0.01772	0.02722
	A2	0.00870	0.00900	0.01891
	B1	0.01464	0.01519	0.02657
	B1	0.00709	0.00768	0.02037
	C1	0.01274	0.01340	0.02455
	C1	0.00603	0.00674	0.01911
	D1	0.01113	0.01184	0.02659
	D1	0.00517	0.00591	0.02227

sky130_fd_sc_hs__a2111o_4	**A1**	0.03076	0.03151	0.05452
	A1	0.01722	0.01799	0.04160
	A2	0.03262	0.03330	0.05207
	A2	0.01719	0.01789	0.03727
	B1	0.02807	0.02929	0.05207
	B1	0.01433	0.01574	0.04155
	C1	0.02468	0.02604	0.04779
	C1	0.01271	0.01403	0.03860
	D1	0.02039	0.02200	0.05114
	D1	0.01017	0.01189	0.04480

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00385	0.00377	0.01379
	A1	0.01092	0.01083	0.02042
	A2	0.00440	0.00429	0.01378
	A2	0.01219	0.01214	0.02097
	B1	0.00380	0.00382	0.01510
	B1	0.01103	0.01100	0.02066
	C1	0.00380	0.00394	0.01478
	C1	0.01023	0.01026	0.02006
	D1	0.00386	0.00467	0.02154
	D1	0.00950	0.01016	0.02527

sky130_fd_sc_hs__a2111o_2	**A1**	0.00722	0.00656	0.01627
	A1	0.01515	0.01460	0.02311
	A2	0.00776	0.00663	0.01594
	A2	0.01660	0.01600	0.02412
	B1	0.00691	0.00665	0.01735
	B1	0.01541	0.01473	0.02368
	C1	0.00780	0.00734	0.01661
	C1	0.01448	0.01400	0.02308
	D1	0.00682	0.00721	0.02305
	D1	0.01358	0.01346	0.02752
sky130_fd_sc_hs__a2111o_4	**A1**	0.01428	0.01260	0.03011
	A1	0.02813	0.02670	0.04391
	A2	0.01590	0.01412	0.03390
	A2	0.03149	0.02971	0.04590
	B1	0.01584	0.01393	0.03417
	B1	0.02954	0.02778	0.04505
	C1	0.01597	0.01415	0.03495
	C1	0.02789	0.02605	0.04349
	D1	0.01343	0.01404	0.04379
	D1	0.02598	0.02555	0.05242

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)**	0.00145	0.00146	0.00145
	(A2 * B1 * D1 * X)	-0.00153	-0.00160	-0.00159
	(A2 * B1 * C1 * !D1 * X)	0.00145	0.00146	0.00145
	(A2 * B1 * C1 * !D1 * X)	-0.00153	-0.00160	-0.00159
	(A2 * B1 * !C1 * !D1 * X)	0.00145	0.00146	0.00145
	(A2 * B1 * !C1 * !D1 * X)	-0.00152	-0.00159	-0.00159
	(A2 * !B1 * C1 * D1 * X)	0.00145	0.00146	0.00145
	(A2 * !B1 * C1 * D1 * X)	-0.00144	-0.00156	-0.00154
	(A2 * !B1 * C1 * !D1 * X)	0.00145	0.00146	0.00145
	(A2 * !B1 * C1 * !D1 * X)	-0.00144	-0.00156	-0.00154
	(A2 * !B1 * !C1 * D1 * X)	0.00146	0.00146	0.00145
	(A2 * !B1 * !C1 * D1 * X)	-0.00141	-0.00153	-0.00152
	(!A2 * B1 * D1 * X)	0.00138	0.00140	0.00139
	(!A2 * B1 * D1 * X)	-0.00161	-0.00163	-0.00162
	(!A2 * B1 * C1 * !D1 * X)	0.00139	0.00140	0.00139
	(!A2 * B1 * C1 * !D1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * B1 * !C1 * !D1 * X)	0.00138	0.00140	0.00139
	(!A2 * B1 * !C1 * !D1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * C1 * D1 * X)	0.00138	0.00140	0.00139
	(!A2 * !B1 * C1 * D1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * C1 * !D1 * X)	0.00138	0.00140	0.00139
	(!A2 * !B1 * C1 * !D1 * X)	-0.00161	-0.00163	-0.00162
	(!A2 * !B1 * !C1 * D1 * X)	0.00138	0.00140	0.00139
	(!A2 * !B1 * !C1 * D1 * X)	-0.00161	-0.00163	-0.00162
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00061	0.00060	0.00059
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00188	-0.00188	-0.00190

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00147	0.00150	0.00148
	(A2 * B1 * D1 * X)	-0.00171	-0.00180	-0.00179
	(A2 * B1 * C1 * !D1 * X)	0.00147	0.00150	0.00148
	(A2 * B1 * C1 * !D1 * X)	-0.00171	-0.00180	-0.00179
	(A2 * B1 * !C1 * !D1 * X)	0.00148	0.00150	0.00148
	(A2 * B1 * !C1 * !D1 * X)	-0.00172	-0.00180	-0.00179
	(A2 * !B1 * C1 * D1 * X)	0.00148	0.00149	0.00148
	(A2 * !B1 * C1 * D1 * X)	-0.00162	-0.00175	-0.00174
	(A2 * !B1 * C1 * !D1 * X)	0.00148	0.00149	0.00148
	(A2 * !B1 * C1 * !D1 * X)	-0.00162	-0.00175	-0.00174
	(A2 * !B1 * !C1 * D1 * X)	0.00148	0.00149	0.00148
	(A2 * !B1 * !C1 * D1 * X)	-0.00159	-0.00172	-0.00171
	(!A2 * B1 * D1 * X)	0.00141	0.00143	0.00142
	(!A2 * B1 * D1 * X)	-0.00183	-0.00184	-0.00183
	(!A2 * B1 * C1 * !D1 * X)	0.00141	0.00142	0.00142
	(!A2 * B1 * C1 * !D1 * X)	-0.00183	-0.00184	-0.00183
	(!A2 * B1 * !C1 * !D1 * X)	0.00141	0.00142	0.00142
	(!A2 * B1 * !C1 * !D1 * X)	-0.00183	-0.00184	-0.00183
	(!A2 * !B1 * C1 * D1 * X)	0.00141	0.00143	0.00142
	(!A2 * !B1 * C1 * D1 * X)	-0.00183	-0.00184	-0.00183
	(!A2 * !B1 * C1 * !D1 * X)	0.00141	0.00143	0.00142
	(!A2 * !B1 * C1 * !D1 * X)	-0.00183	-0.00184	-0.00183
	(!A2 * !B1 * !C1 * D1 * X)	0.00141	0.00143	0.00142
	(!A2 * !B1 * !C1 * D1 * X)	-0.00183	-0.00184	-0.00183
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00051	0.00051	0.00050
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00212	-0.00213	-0.00215

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00246	0.00250	0.00247
	(A2 * B1 * D1 * X)	-0.00310	-0.00326	-0.00323
	(A2 * B1 * C1 * !D1 * X)	0.00246	0.00250	0.00247
	(A2 * B1 * C1 * !D1 * X)	-0.00309	-0.00326	-0.00323
	(A2 * B1 * !C1 * !D1 * X)	0.00246	0.00250	0.00247
	(A2 * B1 * !C1 * !D1 * X)	-0.00304	-0.00325	-0.00323
	(A2 * !B1 * C1 * D1 * X)	0.00246	0.00249	0.00247
	(A2 * !B1 * C1 * D1 * X)	-0.00289	-0.00314	-0.00312
	(A2 * !B1 * C1 * !D1 * X)	0.00246	0.00249	0.00247
	(A2 * !B1 * C1 * !D1 * X)	-0.00289	-0.00314	-0.00312
	(A2 * !B1 * !C1 * D1 * X)	0.00249	0.00250	0.00247
	(A2 * !B1 * !C1 * D1 * X)	-0.00283	-0.00309	-0.00308
	(!A2 * B1 * D1 * X)	0.00238	0.00241	0.00238
	(!A2 * B1 * D1 * X)	-0.00330	-0.00332	-0.00330
	(!A2 * B1 * C1 * !D1 * X)	0.00238	0.00240	0.00238
	(!A2 * B1 * C1 * !D1 * X)	-0.00330	-0.00331	-0.00330
	(!A2 * B1 * !C1 * !D1 * X)	0.00238	0.00240	0.00238
	(!A2 * B1 * !C1 * !D1 * X)	-0.00330	-0.00332	-0.00330
	(!A2 * !B1 * C1 * D1 * X)	0.00236	0.00240	0.00238
	(!A2 * !B1 * C1 * D1 * X)	-0.00329	-0.00332	-0.00330
	(!A2 * !B1 * C1 * !D1 * X)	0.00237	0.00240	0.00238
	(!A2 * !B1 * C1 * !D1 * X)	-0.00330	-0.00333	-0.00330
	(!A2 * !B1 * !C1 * D1 * X)	0.00238	0.00239	0.00238
	(!A2 * !B1 * !C1 * D1 * X)	-0.00330	-0.00331	-0.00330
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00089	0.00089	0.00084
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00376	-0.00378	-0.00383

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)**	-0.00145	-0.00145	-0.00145
	(A2 * B1 * D1 * X)	0.00159	0.00160	0.00159
	(A2 * B1 * C1 * !D1 * X)	-0.00145	-0.00145	-0.00145
	(A2 * B1 * C1 * !D1 * X)	0.00159	0.00160	0.00159
	(A2 * B1 * !C1 * !D1 * X)	-0.00145	-0.00145	-0.00145
	(A2 * B1 * !C1 * !D1 * X)	0.00159	0.00159	0.00159
	(A2 * !B1 * C1 * D1 * X)	-0.00144	-0.00145	-0.00145
	(A2 * !B1 * C1 * D1 * X)	0.00154	0.00156	0.00154
	(A2 * !B1 * C1 * !D1 * X)	-0.00144	-0.00145	-0.00144
	(A2 * !B1 * C1 * !D1 * X)	0.00154	0.00156	0.00154
	(A2 * !B1 * !C1 * D1 * X)	-0.00144	-0.00145	-0.00144
	(A2 * !B1 * !C1 * D1 * X)	0.00151	0.00153	0.00152
	(!A2 * B1 * D1 * X)	-0.00136	-0.00139	-0.00139
	(!A2 * B1 * D1 * X)	0.00162	0.00163	0.00163
	(!A2 * B1 * C1 * !D1 * X)	-0.00136	-0.00139	-0.00139
	(!A2 * B1 * C1 * !D1 * X)	0.00162	0.00163	0.00163
	(!A2 * B1 * !C1 * !D1 * X)	-0.00136	-0.00140	-0.00139
	(!A2 * B1 * !C1 * !D1 * X)	0.00162	0.00163	0.00163
	(!A2 * !B1 * C1 * D1 * X)	-0.00136	-0.00139	-0.00139
	(!A2 * !B1 * C1 * D1 * X)	0.00162	0.00163	0.00163
	(!A2 * !B1 * C1 * !D1 * X)	-0.00136	-0.00140	-0.00139
	(!A2 * !B1 * C1 * !D1 * X)	0.00162	0.00163	0.00163
	(!A2 * !B1 * !C1 * D1 * X)	-0.00136	-0.00140	-0.00139
	(!A2 * !B1 * !C1 * D1 * X)	0.00162	0.00163	0.00163
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00058	-0.00059	-0.00058
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00190	0.00194	0.00191

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00147	-0.00148	-0.00148
	(A2 * B1 * D1 * X)	0.00179	0.00180	0.00179
	(A2 * B1 * C1 * !D1 * X)	-0.00147	-0.00148	-0.00148
	(A2 * B1 * C1 * !D1 * X)	0.00179	0.00180	0.00179
	(A2 * B1 * !C1 * !D1 * X)	-0.00148	-0.00148	-0.00148
	(A2 * B1 * !C1 * !D1 * X)	0.00179	0.00180	0.00179
	(A2 * !B1 * C1 * D1 * X)	-0.00147	-0.00148	-0.00148
	(A2 * !B1 * C1 * D1 * X)	0.00173	0.00175	0.00174
	(A2 * !B1 * C1 * !D1 * X)	-0.00147	-0.00148	-0.00148
	(A2 * !B1 * C1 * !D1 * X)	0.00173	0.00175	0.00174
	(A2 * !B1 * !C1 * D1 * X)	-0.00147	-0.00148	-0.00148
	(A2 * !B1 * !C1 * D1 * X)	0.00170	0.00172	0.00171
	(!A2 * B1 * D1 * X)	-0.00138	-0.00142	-0.00142
	(!A2 * B1 * D1 * X)	0.00183	0.00185	0.00184
	(!A2 * B1 * C1 * !D1 * X)	-0.00138	-0.00142	-0.00142
	(!A2 * B1 * C1 * !D1 * X)	0.00183	0.00185	0.00184
	(!A2 * B1 * !C1 * !D1 * X)	-0.00137	-0.00142	-0.00142
	(!A2 * B1 * !C1 * !D1 * X)	0.00183	0.00185	0.00184
	(!A2 * !B1 * C1 * D1 * X)	-0.00138	-0.00142	-0.00142
	(!A2 * !B1 * C1 * D1 * X)	0.00183	0.00185	0.00184
	(!A2 * !B1 * C1 * !D1 * X)	-0.00138	-0.00142	-0.00142
	(!A2 * !B1 * C1 * !D1 * X)	0.00183	0.00185	0.00184
	(!A2 * !B1 * !C1 * D1 * X)	-0.00137	-0.00142	-0.00142
	(!A2 * !B1 * !C1 * D1 * X)	0.00183	0.00185	0.00184
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00049	-0.00049	-0.00048
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00216	0.00218	0.00215

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00246	-0.00248	-0.00246
	(A2 * B1 * D1 * X)	0.00321	0.00326	0.00323
	(A2 * B1 * C1 * !D1 * X)	-0.00246	-0.00248	-0.00246
	(A2 * B1 * C1 * !D1 * X)	0.00321	0.00326	0.00323
	(A2 * B1 * !C1 * !D1 * X)	-0.00246	-0.00247	-0.00246
	(A2 * B1 * !C1 * !D1 * X)	0.00321	0.00325	0.00323
	(A2 * !B1 * C1 * D1 * X)	-0.00246	-0.00248	-0.00247
	(A2 * !B1 * C1 * D1 * X)	0.00313	0.00314	0.00312
	(A2 * !B1 * C1 * !D1 * X)	-0.00246	-0.00248	-0.00247
	(A2 * !B1 * C1 * !D1 * X)	0.00313	0.00314	0.00312
	(A2 * !B1 * !C1 * D1 * X)	-0.00246	-0.00247	-0.00246
	(A2 * !B1 * !C1 * D1 * X)	0.00306	0.00309	0.00308
	(!A2 * B1 * D1 * X)	-0.00227	-0.00238	-0.00238
	(!A2 * B1 * D1 * X)	0.00330	0.00332	0.00331
	(!A2 * B1 * C1 * !D1 * X)	-0.00227	-0.00238	-0.00238
	(!A2 * B1 * C1 * !D1 * X)	0.00330	0.00331	0.00331
	(!A2 * B1 * !C1 * !D1 * X)	-0.00227	-0.00238	-0.00238
	(!A2 * B1 * !C1 * !D1 * X)	0.00330	0.00332	0.00331
	(!A2 * !B1 * C1 * D1 * X)	-0.00227	-0.00238	-0.00238
	(!A2 * !B1 * C1 * D1 * X)	0.00330	0.00332	0.00331
	(!A2 * !B1 * C1 * !D1 * X)	-0.00226	-0.00238	-0.00238
	(!A2 * !B1 * C1 * !D1 * X)	0.00330	0.00333	0.00331
	(!A2 * !B1 * !C1 * D1 * X)	-0.00226	-0.00238	-0.00238
	(!A2 * !B1 * !C1 * D1 * X)	0.00330	0.00333	0.00331
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00082	-0.00083	-0.00081
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00386	0.00390	0.00385

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)**	0.00132	0.00134	0.00132
	(A1 * B1 * D1 * X)	-0.00159	-0.00166	-0.00165
	(A1 * B1 * C1 * !D1 * X)	0.00132	0.00134	0.00132
	(A1 * B1 * C1 * !D1 * X)	-0.00159	-0.00166	-0.00165
	(A1 * B1 * !C1 * !D1 * X)	0.00132	0.00134	0.00132
	(A1 * B1 * !C1 * !D1 * X)	-0.00157	-0.00166	-0.00165
	(A1 * !B1 * C1 * D1 * X)	0.00132	0.00133	0.00132
	(A1 * !B1 * C1 * D1 * X)	-0.00149	-0.00160	-0.00160
	(A1 * !B1 * C1 * !D1 * X)	0.00132	0.00133	0.00132
	(A1 * !B1 * C1 * !D1 * X)	-0.00149	-0.00160	-0.00160
	(A1 * !B1 * !C1 * D1 * X)	0.00133	0.00133	0.00132
	(A1 * !B1 * !C1 * D1 * X)	-0.00145	-0.00157	-0.00157
	(!A1 * B1 * X)	0.00126	0.00127	0.00126
	(!A1 * B1 * X)	-0.00169	-0.00169	-0.00169
	(!A1 * !B1 * C1 * X)	0.00126	0.00127	0.00126
	(!A1 * !B1 * C1 * X)	-0.00168	-0.00169	-0.00169
	(!A1 * !B1 * !C1 * D1 * X)	0.00127	0.00128	0.00127
	(!A1 * !B1 * !C1 * D1 * X)	-0.00168	-0.00170	-0.00169
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00110	0.00111	0.00111
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00148	0.00151	0.00149
	(A1 * B1 * D1 * X)	-0.00172	-0.00181	-0.00180
	(A1 * B1 * C1 * !D1 * X)	0.00149	0.00151	0.00149
	(A1 * B1 * C1 * !D1 * X)	-0.00172	-0.00181	-0.00180
	(A1 * B1 * !C1 * !D1 * X)	0.00149	0.00151	0.00149
	(A1 * B1 * !C1 * !D1 * X)	-0.00171	-0.00180	-0.00180
	(A1 * !B1 * C1 * D1 * X)	0.00148	0.00150	0.00149
	(A1 * !B1 * C1 * D1 * X)	-0.00161	-0.00174	-0.00174
	(A1 * !B1 * C1 * !D1 * X)	0.00148	0.00150	0.00149
	(A1 * !B1 * C1 * !D1 * X)	-0.00161	-0.00174	-0.00174
	(A1 * !B1 * !C1 * D1 * X)	0.00149	0.00150	0.00149
	(A1 * !B1 * !C1 * D1 * X)	-0.00158	-0.00171	-0.00171
	(!A1 * B1 * X)	0.00141	0.00143	0.00142
	(!A1 * B1 * X)	-0.00183	-0.00185	-0.00184
	(!A1 * !B1 * C1 * X)	0.00141	0.00143	0.00142
	(!A1 * !B1 * C1 * X)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * D1 * X)	0.00142	0.00143	0.00142
	(!A1 * !B1 * !C1 * D1 * X)	-0.00183	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00132	0.00133	0.00132
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00194	-0.00195	-0.00194

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00254	0.00257	0.00254
	(A1 * B1 * D1 * X)	-0.00312	-0.00328	-0.00325
	(A1 * B1 * C1 * !D1 * X)	0.00254	0.00257	0.00254
	(A1 * B1 * C1 * !D1 * X)	-0.00312	-0.00327	-0.00325
	(A1 * B1 * !C1 * !D1 * X)	0.00254	0.00257	0.00254
	(A1 * B1 * !C1 * !D1 * X)	-0.00307	-0.00327	-0.00325
	(A1 * !B1 * C1 * D1 * X)	0.00254	0.00256	0.00254
	(A1 * !B1 * C1 * D1 * X)	-0.00293	-0.00316	-0.00314
	(A1 * !B1 * C1 * !D1 * X)	0.00255	0.00256	0.00254
	(A1 * !B1 * C1 * !D1 * X)	-0.00292	-0.00316	-0.00314
	(A1 * !B1 * !C1 * D1 * X)	0.00257	0.00257	0.00254
	(A1 * !B1 * !C1 * D1 * X)	-0.00287	-0.00310	-0.00309
	(!A1 * B1 * X)	0.00242	0.00246	0.00243
	(!A1 * B1 * X)	-0.00331	-0.00334	-0.00332
	(!A1 * !B1 * C1 * X)	0.00242	0.00244	0.00243
	(!A1 * !B1 * C1 * X)	-0.00331	-0.00333	-0.00332
	(!A1 * !B1 * !C1 * D1 * X)	0.00242	0.00246	0.00243
	(!A1 * !B1 * !C1 * D1 * X)	-0.00331	-0.00334	-0.00332
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00242	0.00246	0.00243
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00331	-0.00335	-0.00332

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)**	-0.00132	-0.00132	-0.00132
	(A1 * B1 * D1 * X)	0.00164	0.00166	0.00165
	(A1 * B1 * C1 * !D1 * X)	-0.00132	-0.00132	-0.00132
	(A1 * B1 * C1 * !D1 * X)	0.00164	0.00166	0.00165
	(A1 * B1 * !C1 * !D1 * X)	-0.00132	-0.00132	-0.00132
	(A1 * B1 * !C1 * !D1 * X)	0.00165	0.00166	0.00165
	(A1 * !B1 * C1 * D1 * X)	-0.00131	-0.00132	-0.00132
	(A1 * !B1 * C1 * D1 * X)	0.00158	0.00160	0.00160
	(A1 * !B1 * C1 * !D1 * X)	-0.00131	-0.00132	-0.00132
	(A1 * !B1 * C1 * !D1 * X)	0.00158	0.00160	0.00160
	(A1 * !B1 * !C1 * D1 * X)	-0.00131	-0.00131	-0.00131
	(A1 * !B1 * !C1 * D1 * X)	0.00156	0.00157	0.00157
	(!A1 * B1 * X)	-0.00123	-0.00127	-0.00126
	(!A1 * B1 * X)	0.00169	0.00170	0.00169
	(!A1 * !B1 * C1 * X)	-0.00123	-0.00127	-0.00126
	(!A1 * !B1 * C1 * X)	0.00168	0.00170	0.00169
	(!A1 * !B1 * !C1 * D1 * X)	-0.00123	-0.00127	-0.00127
	(!A1 * !B1 * !C1 * D1 * X)	0.00168	0.00170	0.00169
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00103	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00190	0.00188	0.00185

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00148	-0.00149	-0.00149
	(A1 * B1 * D1 * X)	0.00179	0.00181	0.00180
	(A1 * B1 * C1 * !D1 * X)	-0.00148	-0.00149	-0.00149
	(A1 * B1 * C1 * !D1 * X)	0.00179	0.00181	0.00180
	(A1 * B1 * !C1 * !D1 * X)	-0.00148	-0.00149	-0.00149
	(A1 * B1 * !C1 * !D1 * X)	0.00179	0.00180	0.00180
	(A1 * !B1 * C1 * D1 * X)	-0.00148	-0.00149	-0.00149
	(A1 * !B1 * C1 * D1 * X)	0.00173	0.00174	0.00174
	(A1 * !B1 * C1 * !D1 * X)	-0.00148	-0.00149	-0.00149
	(A1 * !B1 * C1 * !D1 * X)	0.00173	0.00174	0.00174
	(A1 * !B1 * !C1 * D1 * X)	-0.00148	-0.00149	-0.00148
	(A1 * !B1 * !C1 * D1 * X)	0.00170	0.00171	0.00171
	(!A1 * B1 * X)	-0.00139	-0.00143	-0.00142
	(!A1 * B1 * X)	0.00184	0.00186	0.00185
	(!A1 * !B1 * C1 * X)	-0.00139	-0.00143	-0.00142
	(!A1 * !B1 * C1 * X)	0.00184	0.00185	0.00185
	(!A1 * !B1 * !C1 * D1 * X)	-0.00139	-0.00142	-0.00142
	(!A1 * !B1 * !C1 * D1 * X)	0.00184	0.00185	0.00185
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00123	-0.00132	-0.00132
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00201	0.00197	0.00195

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00253	-0.00254	-0.00253
	(A1 * B1 * D1 * X)	0.00325	0.00328	0.00325
	(A1 * B1 * C1 * !D1 * X)	-0.00253	-0.00254	-0.00253
	(A1 * B1 * C1 * !D1 * X)	0.00325	0.00327	0.00325
	(A1 * B1 * !C1 * !D1 * X)	-0.00253	-0.00254	-0.00253
	(A1 * B1 * !C1 * !D1 * X)	0.00325	0.00327	0.00325
	(A1 * !B1 * C1 * D1 * X)	-0.00253	-0.00254	-0.00253
	(A1 * !B1 * C1 * D1 * X)	0.00313	0.00316	0.00314
	(A1 * !B1 * C1 * !D1 * X)	-0.00253	-0.00254	-0.00253
	(A1 * !B1 * C1 * !D1 * X)	0.00313	0.00316	0.00314
	(A1 * !B1 * !C1 * D1 * X)	-0.00252	-0.00253	-0.00253
	(A1 * !B1 * !C1 * D1 * X)	0.00308	0.00310	0.00309
	(!A1 * B1 * X)	-0.00234	-0.00243	-0.00243
	(!A1 * B1 * X)	0.00332	0.00334	0.00333
	(!A1 * !B1 * C1 * X)	-0.00234	-0.00243	-0.00243
	(!A1 * !B1 * C1 * X)	0.00332	0.00334	0.00333
	(!A1 * !B1 * !C1 * D1 * X)	-0.00233	-0.00242	-0.00243
	(!A1 * !B1 * !C1 * D1 * X)	0.00332	0.00334	0.00333
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00224	-0.00242	-0.00243
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00344	0.00337	0.00334

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)**	0.00135	0.00136	0.00135
	(A1 * A2 * C1 * D1 * X)	-0.00113	-0.00115	-0.00114
	(A1 * A2 * C1 * !D1 * X)	0.00145	0.00141	0.00136
	(A1 * A2 * C1 * !D1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A2 * !C1 * D1 * X)	0.00136	0.00137	0.00135
	(A1 * A2 * !C1 * D1 * X)	-0.00107	-0.00107	-0.00106
	(A1 * A2 * !C1 * !D1 * X)	0.00134	0.00137	0.00135
	(A1 * A2 * !C1 * !D1 * X)	-0.00087	-0.00089	-0.00088
	(A1 * !A2 * C1 * D1 * X)	0.00135	0.00136	0.00135
	(A1 * !A2 * C1 * D1 * X)	-0.00152	-0.00157	-0.00156
	(A1 * !A2 * C1 * !D1 * X)	0.00148	0.00136	0.00135
	(A1 * !A2 * C1 * !D1 * X)	-0.00139	-0.00156	-0.00156
	(A1 * !A2 * !C1 * D1 * X)	0.00143	0.00135	0.00135
	(A1 * !A2 * !C1 * D1 * X)	-0.00132	-0.00150	-0.00150
	(!A1 * C1 * D1 * X)	0.00135	0.00136	0.00135
	(!A1 * C1 * D1 * X)	-0.00152	-0.00157	-0.00156
	(!A1 * C1 * !D1 * X)	0.00149	0.00136	0.00135
	(!A1 * C1 * !D1 * X)	-0.00138	-0.00156	-0.00156
	(!A1 * !C1 * D1 * X)	0.00143	0.00136	0.00135
	(!A1 * !C1 * D1 * X)	-0.00132	-0.00150	-0.00149

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00144	0.00146	0.00144
	(A1 * A2 * C1 * D1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * C1 * !D1 * X)	0.00150	0.00148	0.00144
	(A1 * A2 * C1 * !D1 * X)	-0.00125	-0.00125	-0.00124
	(A1 * A2 * !C1 * D1 * X)	0.00143	0.00147	0.00144
	(A1 * A2 * !C1 * D1 * X)	-0.00118	-0.00118	-0.00118
	(A1 * A2 * !C1 * !D1 * X)	0.00143	0.00146	0.00144
	(A1 * A2 * !C1 * !D1 * X)	-0.00097	-0.00099	-0.00097
	(A1 * !A2 * C1 * D1 * X)	0.00143	0.00143	0.00144
	(A1 * !A2 * C1 * D1 * X)	-0.00169	-0.00175	-0.00174
	(A1 * !A2 * C1 * !D1 * X)	0.00152	0.00143	0.00144
	(A1 * !A2 * C1 * !D1 * X)	-0.00159	-0.00175	-0.00175
	(A1 * !A2 * !C1 * D1 * X)	0.00148	0.00146	0.00144
	(A1 * !A2 * !C1 * D1 * X)	-0.00150	-0.00168	-0.00167
	(!A1 * C1 * D1 * X)	0.00143	0.00143	0.00144
	(!A1 * C1 * D1 * X)	-0.00169	-0.00175	-0.00174
	(!A1 * C1 * !D1 * X)	0.00152	0.00143	0.00144
	(!A1 * C1 * !D1 * X)	-0.00158	-0.00175	-0.00175
	(!A1 * !C1 * D1 * X)	0.00148	0.00146	0.00144
	(!A1 * !C1 * D1 * X)	-0.00149	-0.00168	-0.00167

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00267	0.00270	0.00265
	(A1 * A2 * C1 * D1 * X)	-0.00236	-0.00237	-0.00235
	(A1 * A2 * C1 * !D1 * X)	0.00273	0.00272	0.00265
	(A1 * A2 * C1 * !D1 * X)	-0.00230	-0.00231	-0.00229
	(A1 * A2 * !C1 * D1 * X)	0.00265	0.00269	0.00266
	(A1 * A2 * !C1 * D1 * X)	-0.00223	-0.00223	-0.00222
	(A1 * A2 * !C1 * !D1 * X)	0.00265	0.00269	0.00265
	(A1 * A2 * !C1 * !D1 * X)	-0.00184	-0.00186	-0.00183
	(A1 * !A2 * C1 * D1 * X)	0.00264	0.00265	0.00264
	(A1 * !A2 * C1 * D1 * X)	-0.00310	-0.00321	-0.00320
	(A1 * !A2 * C1 * !D1 * X)	0.00278	0.00266	0.00264
	(A1 * !A2 * C1 * !D1 * X)	-0.00294	-0.00323	-0.00321
	(A1 * !A2 * !C1 * D1 * X)	0.00276	0.00266	0.00264
	(A1 * !A2 * !C1 * D1 * X)	-0.00277	-0.00310	-0.00308
	(!A1 * C1 * D1 * X)	0.00264	0.00265	0.00264
	(!A1 * C1 * D1 * X)	-0.00310	-0.00321	-0.00321
	(!A1 * C1 * !D1 * X)	0.00277	0.00265	0.00264
	(!A1 * C1 * !D1 * X)	-0.00295	-0.00322	-0.00321
	(!A1 * !C1 * D1 * X)	0.00276	0.00266	0.00264
	(!A1 * !C1 * D1 * X)	-0.00278	-0.00310	-0.00309

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)**	-0.00134	-0.00135	-0.00135
	(A1 * A2 * C1 * D1 * X)	0.00113	0.00115	0.00114
	(A1 * A2 * C1 * !D1 * X)	-0.00134	-0.00135	-0.00135
	(A1 * A2 * C1 * !D1 * X)	0.00111	0.00112	0.00112
	(A1 * A2 * !C1 * D1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * A2 * !C1 * D1 * X)	0.00107	0.00107	0.00106
	(A1 * A2 * !C1 * !D1 * X)	-0.00127	-0.00128	-0.00128
	(A1 * A2 * !C1 * !D1 * X)	0.00096	0.00096	0.00094
	(A1 * !A2 * C1 * D1 * X)	-0.00134	-0.00135	-0.00134
	(A1 * !A2 * C1 * D1 * X)	0.00155	0.00157	0.00156
	(A1 * !A2 * C1 * !D1 * X)	-0.00134	-0.00135	-0.00134
	(A1 * !A2 * C1 * !D1 * X)	0.00156	0.00157	0.00156
	(A1 * !A2 * !C1 * D1 * X)	-0.00134	-0.00134	-0.00134
	(A1 * !A2 * !C1 * D1 * X)	0.00149	0.00150	0.00150
	(!A1 * C1 * D1 * X)	-0.00134	-0.00135	-0.00134
	(!A1 * C1 * D1 * X)	0.00155	0.00157	0.00156
	(!A1 * C1 * !D1 * X)	-0.00134	-0.00135	-0.00134
	(!A1 * C1 * !D1 * X)	0.00156	0.00157	0.00156
	(!A1 * !C1 * D1 * X)	-0.00134	-0.00134	-0.00134
	(!A1 * !C1 * D1 * X)	0.00149	0.00150	0.00149

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00143	-0.00144	-0.00143
	(A1 * A2 * C1 * D1 * X)	0.00128	0.00129	0.00128
	(A1 * A2 * C1 * !D1 * X)	-0.00143	-0.00144	-0.00143
	(A1 * A2 * C1 * !D1 * X)	0.00125	0.00125	0.00124
	(A1 * A2 * !C1 * D1 * X)	-0.00143	-0.00143	-0.00143
	(A1 * A2 * !C1 * D1 * X)	0.00118	0.00118	0.00118
	(A1 * A2 * !C1 * !D1 * X)	-0.00133	-0.00135	-0.00136
	(A1 * A2 * !C1 * !D1 * X)	0.00105	0.00106	0.00104
	(A1 * !A2 * C1 * D1 * X)	-0.00143	-0.00143	-0.00143
	(A1 * !A2 * C1 * D1 * X)	0.00174	0.00176	0.00174
	(A1 * !A2 * C1 * !D1 * X)	-0.00143	-0.00143	-0.00143
	(A1 * !A2 * C1 * !D1 * X)	0.00175	0.00176	0.00175
	(A1 * !A2 * !C1 * D1 * X)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * !C1 * D1 * X)	0.00168	0.00168	0.00167
	(!A1 * C1 * D1 * X)	-0.00143	-0.00143	-0.00143
	(!A1 * C1 * D1 * X)	0.00174	0.00176	0.00174
	(!A1 * C1 * !D1 * X)	-0.00143	-0.00143	-0.00143
	(!A1 * C1 * !D1 * X)	0.00175	0.00176	0.00175
	(!A1 * !C1 * D1 * X)	-0.00143	-0.00144	-0.00143
	(!A1 * !C1 * D1 * X)	0.00167	0.00168	0.00167

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00264	-0.00265	-0.00264
	(A1 * A2 * C1 * D1 * X)	0.00236	0.00237	0.00235
	(A1 * A2 * C1 * !D1 * X)	-0.00264	-0.00265	-0.00264
	(A1 * A2 * C1 * !D1 * X)	0.00230	0.00231	0.00229
	(A1 * A2 * !C1 * D1 * X)	-0.00265	-0.00265	-0.00265
	(A1 * A2 * !C1 * D1 * X)	0.00223	0.00223	0.00222
	(A1 * A2 * !C1 * !D1 * X)	-0.00247	-0.00249	-0.00247
	(A1 * A2 * !C1 * !D1 * X)	0.00200	0.00202	0.00199
	(A1 * !A2 * C1 * D1 * X)	-0.00263	-0.00264	-0.00263
	(A1 * !A2 * C1 * D1 * X)	0.00319	0.00321	0.00320
	(A1 * !A2 * C1 * !D1 * X)	-0.00263	-0.00265	-0.00263
	(A1 * !A2 * C1 * !D1 * X)	0.00319	0.00324	0.00321
	(A1 * !A2 * !C1 * D1 * X)	-0.00263	-0.00265	-0.00263
	(A1 * !A2 * !C1 * D1 * X)	0.00307	0.00310	0.00308
	(!A1 * C1 * D1 * X)	-0.00263	-0.00264	-0.00263
	(!A1 * C1 * D1 * X)	0.00319	0.00321	0.00321
	(!A1 * C1 * !D1 * X)	-0.00264	-0.00265	-0.00263
	(!A1 * C1 * !D1 * X)	0.00321	0.00324	0.00321
	(!A1 * !C1 * D1 * X)	-0.00263	-0.00265	-0.00263
	(!A1 * !C1 * D1 * X)	0.00308	0.00310	0.00309

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)**	0.00146	0.00147	0.00140
	(A1 * B1 * D1 * X)	-0.00100	-0.00101	-0.00101
	(A1 * B1 * !D1 * X)	0.00137	0.00139	0.00135
	(A1 * B1 * !D1 * X)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * !B1 * D1 * X)	0.00156	0.00140	0.00136
	(A1 * A2 * !B1 * D1 * X)	-0.00101	-0.00109	-0.00108
	(A1 * A2 * !B1 * !D1 * X)	0.00137	0.00140	0.00136
	(A1 * A2 * !B1 * !D1 * X)	-0.00084	-0.00086	-0.00086
	(A1 * !A2 * !B1 * D1 * X)	0.00168	0.00138	0.00135
	(A1 * !A2 * !B1 * D1 * X)	-0.00121	-0.00152	-0.00155
	(!A1 * B1 * D1 * X)	0.00147	0.00148	0.00141
	(!A1 * B1 * D1 * X)	-0.00101	-0.00102	-0.00101
	(!A1 * B1 * !D1 * X)	0.00137	0.00139	0.00136
	(!A1 * B1 * !D1 * X)	-0.00086	-0.00087	-0.00086
	(!A1 * !B1 * D1 * X)	0.00168	0.00137	0.00136
	(!A1 * !B1 * D1 * X)	-0.00121	-0.00152	-0.00155

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00153	0.00155	0.00146
	(A1 * B1 * D1 * X)	-0.00118	-0.00119	-0.00119
	(A1 * B1 * !D1 * X)	0.00143	0.00146	0.00142
	(A1 * B1 * !D1 * X)	-0.00101	-0.00103	-0.00102
	(A1 * A2 * !B1 * D1 * X)	0.00162	0.00146	0.00143
	(A1 * A2 * !B1 * D1 * X)	-0.00119	-0.00126	-0.00125
	(A1 * A2 * !B1 * !D1 * X)	0.00144	0.00146	0.00143
	(A1 * A2 * !B1 * !D1 * X)	-0.00100	-0.00101	-0.00101
	(A1 * !A2 * !B1 * D1 * X)	0.00176	0.00146	0.00142
	(A1 * !A2 * !B1 * D1 * X)	-0.00148	-0.00179	-0.00181
	(!A1 * B1 * D1 * X)	0.00155	0.00157	0.00148
	(!A1 * B1 * D1 * X)	-0.00120	-0.00121	-0.00120
	(!A1 * B1 * !D1 * X)	0.00143	0.00146	0.00143
	(!A1 * B1 * !D1 * X)	-0.00102	-0.00104	-0.00103
	(!A1 * !B1 * D1 * X)	0.00176	0.00146	0.00142
	(!A1 * !B1 * D1 * X)	-0.00148	-0.00179	-0.00180

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00275	0.00283	0.00268
	(A1 * B1 * D1 * X)	-0.00218	-0.00217	-0.00218
	(A1 * B1 * !D1 * X)	0.00259	0.00263	0.00258
	(A1 * B1 * !D1 * X)	-0.00188	-0.00191	-0.00189
	(A1 * A2 * !B1 * D1 * X)	0.00290	0.00266	0.00260
	(A1 * A2 * !B1 * D1 * X)	-0.00227	-0.00234	-0.00232
	(A1 * A2 * !B1 * !D1 * X)	0.00261	0.00265	0.00259
	(A1 * A2 * !B1 * !D1 * X)	-0.00187	-0.00189	-0.00187
	(A1 * !A2 * !B1 * D1 * X)	0.00328	0.00264	0.00258
	(A1 * !A2 * !B1 * D1 * X)	-0.00262	-0.00329	-0.00332
	(!A1 * B1 * D1 * X)	0.00281	0.00289	0.00271
	(!A1 * B1 * D1 * X)	-0.00220	-0.00221	-0.00221
	(!A1 * B1 * !D1 * X)	0.00260	0.00265	0.00259
	(!A1 * B1 * !D1 * X)	-0.00188	-0.00191	-0.00189
	(!A1 * !B1 * D1 * X)	0.00328	0.00264	0.00258
	(!A1 * !B1 * D1 * X)	-0.00262	-0.00329	-0.00332

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)**	-0.00135	-0.00136	-0.00135
	(A1 * B1 * D1 * X)	0.00100	0.00101	0.00101
	(A1 * B1 * !D1 * X)	-0.00134	-0.00135	-0.00133
	(A1 * B1 * !D1 * X)	0.00088	0.00088	0.00089
	(A1 * A2 * !B1 * D1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * A2 * !B1 * D1 * X)	0.00108	0.00109	0.00108
	(A1 * A2 * !B1 * !D1 * X)	-0.00126	-0.00127	-0.00134
	(A1 * A2 * !B1 * !D1 * X)	0.00093	0.00093	0.00088
	(A1 * !A2 * !B1 * D1 * X)	-0.00134	-0.00135	-0.00134
	(A1 * !A2 * !B1 * D1 * X)	0.00154	0.00155	0.00155
	(!A1 * B1 * D1 * X)	-0.00135	-0.00136	-0.00135
	(!A1 * B1 * D1 * X)	0.00101	0.00102	0.00101
	(!A1 * B1 * !D1 * X)	-0.00134	-0.00135	-0.00133
	(!A1 * B1 * !D1 * X)	0.00088	0.00088	0.00089
	(!A1 * !B1 * D1 * X)	-0.00135	-0.00135	-0.00134
	(!A1 * !B1 * D1 * X)	0.00155	0.00155	0.00155

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00142	-0.00142	-0.00142
	(A1 * B1 * D1 * X)	0.00118	0.00119	0.00119
	(A1 * B1 * !D1 * X)	-0.00141	-0.00142	-0.00140
	(A1 * B1 * !D1 * X)	0.00104	0.00105	0.00104
	(A1 * A2 * !B1 * D1 * X)	-0.00142	-0.00142	-0.00142
	(A1 * A2 * !B1 * D1 * X)	0.00126	0.00126	0.00125
	(A1 * A2 * !B1 * !D1 * X)	-0.00131	-0.00132	-0.00140
	(A1 * A2 * !B1 * !D1 * X)	0.00109	0.00109	0.00102
	(A1 * !A2 * !B1 * D1 * X)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * !B1 * D1 * X)	0.00179	0.00180	0.00181
	(!A1 * B1 * D1 * X)	-0.00142	-0.00142	-0.00142
	(!A1 * B1 * D1 * X)	0.00120	0.00121	0.00120
	(!A1 * B1 * !D1 * X)	-0.00141	-0.00142	-0.00140
	(!A1 * B1 * !D1 * X)	0.00105	0.00106	0.00106
	(!A1 * !B1 * D1 * X)	-0.00141	-0.00142	-0.00141
	(!A1 * !B1 * D1 * X)	0.00179	0.00180	0.00180

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00259	-0.00258	-0.00259
	(A1 * B1 * D1 * X)	0.00218	0.00217	0.00218
	(A1 * B1 * !D1 * X)	-0.00255	-0.00256	-0.00253
	(A1 * B1 * !D1 * X)	0.00192	0.00193	0.00194
	(A1 * A2 * !B1 * D1 * X)	-0.00259	-0.00260	-0.00259
	(A1 * A2 * !B1 * D1 * X)	0.00233	0.00234	0.00232
	(A1 * A2 * !B1 * !D1 * X)	-0.00242	-0.00244	-0.00251
	(A1 * A2 * !B1 * !D1 * X)	0.00199	0.00200	0.00194
	(A1 * !A2 * !B1 * D1 * X)	-0.00255	-0.00258	-0.00255
	(A1 * !A2 * !B1 * D1 * X)	0.00328	0.00333	0.00332
	(!A1 * B1 * D1 * X)	-0.00259	-0.00259	-0.00259
	(!A1 * B1 * D1 * X)	0.00220	0.00221	0.00221
	(!A1 * B1 * !D1 * X)	-0.00255	-0.00256	-0.00252
	(!A1 * B1 * !D1 * X)	0.00193	0.00194	0.00195
	(!A1 * !B1 * D1 * X)	-0.00255	-0.00258	-0.00255
	(!A1 * !B1 * D1 * X)	0.00328	0.00333	0.00332

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00145	0.00148	0.00145
	(A1 * C1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * B1 * !C1 * X)	0.00145	0.00148	0.00145
	(A1 * B1 * !C1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * !B1 * !C1 * X)	0.00145	0.00148	0.00145
	(A1 * A2 * !B1 * !C1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * C1 * X)	0.00145	0.00148	0.00145
	(!A1 * C1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * B1 * !C1 * X)	0.00145	0.00148	0.00145
	(!A1 * B1 * !C1 * X)	-0.00080	-0.00082	-0.00081

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00174	0.00177	0.00175
	(A1 * C1 * X)	-0.00087	-0.00089	-0.00087
	(A1 * B1 * !C1 * X)	0.00174	0.00177	0.00175
	(A1 * B1 * !C1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !B1 * !C1 * X)	0.00174	0.00177	0.00175
	(A1 * A2 * !B1 * !C1 * X)	-0.00087	-0.00089	-0.00087
	(!A1 * C1 * X)	0.00174	0.00177	0.00175
	(!A1 * C1 * X)	-0.00087	-0.00089	-0.00087
	(!A1 * B1 * !C1 * X)	0.00174	0.00177	0.00175
	(!A1 * B1 * !C1 * X)	-0.00087	-0.00088	-0.00087
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00283	0.00288	0.00283
	(A1 * C1 * X)	-0.00165	-0.00167	-0.00165
	(A1 * B1 * !C1 * X)	0.00283	0.00288	0.00283
	(A1 * B1 * !C1 * X)	-0.00165	-0.00167	-0.00164
	(A1 * A2 * !B1 * !C1 * X)	0.00283	0.00288	0.00283
	(A1 * A2 * !B1 * !C1 * X)	-0.00164	-0.00167	-0.00164
	(!A1 * C1 * X)	0.00283	0.00288	0.00283
	(!A1 * C1 * X)	-0.00165	-0.00167	-0.00165
	(!A1 * B1 * !C1 * X)	0.00283	0.00288	0.00283
	(!A1 * B1 * !C1 * X)	-0.00165	-0.00167	-0.00164

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00141	-0.00142	-0.00145
	(A1 * C1 * X)	0.00085	0.00086	0.00082
	(A1 * B1 * !C1 * X)	-0.00135	-0.00136	-0.00144
	(A1 * B1 * !C1 * X)	0.00088	0.00089	0.00082
	(A1 * A2 * !B1 * !C1 * X)	-0.00119	-0.00120	-0.00139
	(A1 * A2 * !B1 * !C1 * X)	0.00099	0.00099	0.00085
	(!A1 * C1 * X)	-0.00141	-0.00142	-0.00145
	(!A1 * C1 * X)	0.00085	0.00086	0.00082
	(!A1 * B1 * !C1 * X)	-0.00135	-0.00136	-0.00144
	(!A1 * B1 * !C1 * X)	0.00088	0.00089	0.00082
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00169	-0.00170	-0.00174
	(A1 * C1 * X)	0.00092	0.00092	0.00089
	(A1 * B1 * !C1 * X)	-0.00162	-0.00163	-0.00173
	(A1 * B1 * !C1 * X)	0.00097	0.00097	0.00089
	(A1 * A2 * !B1 * !C1 * X)	-0.00143	-0.00145	-0.00168
	(A1 * A2 * !B1 * !C1 * X)	0.00109	0.00109	0.00092
	(!A1 * C1 * X)	-0.00169	-0.00170	-0.00174
	(!A1 * C1 * X)	0.00092	0.00092	0.00089
	(!A1 * B1 * !C1 * X)	-0.00162	-0.00163	-0.00173
	(!A1 * B1 * !C1 * X)	0.00097	0.00097	0.00089
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00267	-0.00269	-0.00281
	(A1 * C1 * X)	0.00180	0.00180	0.00168
	(A1 * B1 * !C1 * X)	-0.00252	-0.00254	-0.00278
	(A1 * B1 * !C1 * X)	0.00186	0.00186	0.00168
	(A1 * A2 * !B1 * !C1 * X)	-0.00220	-0.00223	-0.00269
	(A1 * A2 * !B1 * !C1 * X)	0.00207	0.00207	0.00174
	(!A1 * C1 * X)	-0.00267	-0.00269	-0.00281
	(!A1 * C1 * X)	0.00180	0.00181	0.00169
	(!A1 * B1 * !C1 * X)	-0.00252	-0.00254	-0.00278
	(!A1 * B1 * !C1 * X)	0.00187	0.00187	0.00168

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00282	0.00267	0.00281	0.00287	0.34219
sky130_fd_sc_hs__a211oi_2	0.00517	0.00540	0.00434	0.00413	0.63242
sky130_fd_sc_hs__a211oi_4	0.01040	0.01039	0.00827	0.00840	1.14485

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.02030	0.05288
sky130_fd_sc_hs__a211oi_2	0.00000	0.03828	0.10576
sky130_fd_sc_hs__a211oi_4	0.00000	0.07655	0.21153

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)	0.15068	1.10982	10.15670
	A2->Y (FR)	0.18050	1.16095	10.37030
	B1->Y (FR)	0.16007	1.16319	10.94390
	C1->Y (FR)	0.12412	1.12403	10.88660
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.13364	0.94837	10.14040
	A2->Y (FR)	0.17255	0.98682	10.16220
	B1->Y (FR)	0.14802	0.99569	10.79280
	C1->Y (FR)	0.09688	0.93952	10.72190
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.12855	0.81083	9.87168
	A2->Y (FR)	0.17146	0.86586	10.10010
	B1->Y (FR)	0.14285	0.86705	10.75960
	C1->Y (FR)	0.09377	0.82265	10.75270

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.03080	0.37367	3.45924
	A2->Y (RF)	0.03419	0.34525	3.14376
	B1->Y (RF)	0.02354	0.30041	2.81050
	C1->Y (RF)	0.02054	0.29208	2.80578
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.02730	0.33704	3.58626
	A2->Y (RF)	0.03364	0.31217	3.22720
	B1->Y (RF)	0.03403	0.39191	4.33055
	C1->Y (RF)	0.02431	0.36568	4.21547
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.02755	0.30185	3.61872
	A2->Y (RF)	0.03277	0.26228	3.03178
	B1->Y (RF)	0.03287	0.34414	4.28497
	C1->Y (RF)	0.02375	0.32241	4.25431

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00045	0.00025	0.00250
	A1	0.00689	0.00671	0.00897
	A2	0.00080	0.00067	0.00297
	A2	0.00819	0.00800	0.01035
	B1	0.00033	0.00021	0.00329
	B1	0.00570	0.00560	0.00866
	C1	0.00014	0.00036	0.00670
	C1	0.00472	0.00495	0.01128
sky130_fd_sc_hs__a211oi_2	A1	-0.00013	-0.00043	0.00411
	A1	0.01222	0.01195	0.01646
	A2	0.00147	0.00109	0.00549
	A2	0.01591	0.01557	0.01996
	B1	0.00071	0.00058	0.00404
	B1	0.01326	0.01306	0.01629
	C1	0.00054	0.00094	0.00879
	C1	0.01108	0.01133	0.01868
sky130_fd_sc_hs__a211oi_4	A1	-0.00068	-0.00129	0.00760
	A1	0.02390	0.02332	0.03217
	A2	0.00191	0.00125	0.01022
	A2	0.03057	0.02993	0.03889
	B1	0.00101	0.00078	0.00793
	B1	0.02537	0.02479	0.03162
	C1	0.00069	0.00163	0.01697
	C1	0.02130	0.02185	0.03612

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00860	0.00850	0.01127
	A1	0.00228	0.00215	0.00492
	A2	0.00956	0.00943	0.01163
	A2	0.00226	0.00209	0.00432
	B1	0.00608	0.00610	0.00923
	B1	0.00074	0.00074	0.00390
	C1	0.00436	0.00450	0.00758
	C1	-0.00022	-0.00010	0.00299
sky130_fd_sc_hs__a211oi_2	A1	0.01602	0.01586	0.02127
	A1	0.00393	0.00372	0.00908
	A2	0.01821	0.01786	0.02225
	A2	0.00393	0.00353	0.00786
	B1	0.01258	0.01245	0.01649
	B1	0.00161	0.00141	0.00535
	C1	0.00587	0.00611	0.01039
	C1	-0.00113	-0.00092	0.00310
sky130_fd_sc_hs__a211oi_4	A1	0.03173	0.03121	0.04182
	A1	0.00773	0.00725	0.01781
	A2	0.03598	0.03528	0.04439
	A2	0.00766	0.00690	0.01589
	B1	0.02386	0.02366	0.03115
	B1	0.00226	0.00192	0.00996
	C1	0.01097	0.01143	0.01945
	C1	-0.00268	-0.00231	0.00575

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)**	0.00142	0.00143	0.00141
	(A2 * B1 * C1 * !Y)	-0.00170	-0.00177	-0.00176
	(A2 * B1 * !C1 * !Y)	0.00142	0.00143	0.00141
	(A2 * B1 * !C1 * !Y)	-0.00169	-0.00177	-0.00176
	(A2 * !B1 * C1 * !Y)	0.00143	0.00143	0.00141
	(A2 * !B1 * C1 * !Y)	-0.00156	-0.00171	-0.00171
	(!A2 * B1 * C1 * !Y)	0.00134	0.00135	0.00134
	(!A2 * B1 * C1 * !Y)	-0.00180	-0.00181	-0.00180
	(!A2 * B1 * !C1 * !Y)	0.00134	0.00135	0.00134
	(!A2 * B1 * !C1 * !Y)	-0.00180	-0.00181	-0.00180
	(!A2 * !B1 * C1 * !Y)	0.00135	0.00137	0.00135
	(!A2 * !B1 * C1 * !Y)	-0.00179	-0.00181	-0.00180
	(!A2 * !B1 * !C1 * Y)	0.00045	0.00045	0.00044
	(!A2 * !B1 * !C1 * Y)	-0.00208	-0.00209	-0.00211
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00289	0.00292	0.00288
	(A2 * B1 * C1 * !Y)	-0.00334	-0.00350	-0.00347
	(A2 * B1 * !C1 * !Y)	0.00290	0.00292	0.00288
	(A2 * B1 * !C1 * !Y)	-0.00331	-0.00350	-0.00347
	(A2 * !B1 * C1 * !Y)	0.00293	0.00292	0.00288
	(A2 * !B1 * C1 * !Y)	-0.00314	-0.00340	-0.00337
	(!A2 * B1 * C1 * !Y)	0.00274	0.00275	0.00275
	(!A2 * B1 * C1 * !Y)	-0.00353	-0.00354	-0.00354
	(!A2 * B1 * !C1 * !Y)	0.00274	0.00274	0.00275
	(!A2 * B1 * !C1 * !Y)	-0.00354	-0.00354	-0.00354
	(!A2 * !B1 * C1 * !Y)	0.00274	0.00277	0.00275
	(!A2 * !B1 * C1 * !Y)	-0.00353	-0.00356	-0.00354
	(!A2 * !B1 * !C1 * Y)	0.00107	0.00107	0.00102
	(!A2 * !B1 * !C1 * Y)	-0.00401	-0.00405	-0.00412

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00559	0.00567	0.00561
	(A2 * B1 * C1 * !Y)	-0.00674	-0.00711	-0.00704
	(A2 * B1 * !C1 * !Y)	0.00563	0.00568	0.00561
	(A2 * B1 * !C1 * !Y)	-0.00668	-0.00711	-0.00704
	(A2 * !B1 * C1 * !Y)	0.00571	0.00568	0.00561
	(A2 * !B1 * C1 * !Y)	-0.00629	-0.00689	-0.00682
	(!A2 * B1 * C1 * !Y)	0.00538	0.00540	0.00539
	(!A2 * B1 * C1 * !Y)	-0.00723	-0.00723	-0.00721
	(!A2 * B1 * !C1 * !Y)	0.00536	0.00539	0.00539
	(!A2 * B1 * !C1 * !Y)	-0.00719	-0.00722	-0.00721
	(!A2 * !B1 * C1 * !Y)	0.00533	0.00537	0.00535
	(!A2 * !B1 * C1 * !Y)	-0.00721	-0.00723	-0.00721
	(!A2 * !B1 * !C1 * Y)	0.00185	0.00187	0.00178
	(!A2 * !B1 * !C1 * Y)	-0.00824	-0.00832	-0.00844

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)**	-0.00141	-0.00142	-0.00141
	(A2 * B1 * C1 * !Y)	0.00177	0.00177	0.00176
	(A2 * B1 * !C1 * !Y)	-0.00141	-0.00141	-0.00141
	(A2 * B1 * !C1 * !Y)	0.00177	0.00177	0.00176
	(A2 * !B1 * C1 * !Y)	-0.00141	-0.00141	-0.00141
	(A2 * !B1 * C1 * !Y)	0.00170	0.00171	0.00171
	(!A2 * B1 * C1 * !Y)	-0.00131	-0.00135	-0.00134
	(!A2 * B1 * C1 * !Y)	0.00180	0.00182	0.00181
	(!A2 * B1 * !C1 * !Y)	-0.00131	-0.00135	-0.00134
	(!A2 * B1 * !C1 * !Y)	0.00180	0.00181	0.00181
	(!A2 * !B1 * C1 * !Y)	-0.00131	-0.00135	-0.00135
	(!A2 * !B1 * C1 * !Y)	0.00179	0.00181	0.00181
	(!A2 * !B1 * !C1 * Y)	-0.00043	-0.00043	-0.00043
	(!A2 * !B1 * !C1 * Y)	0.00211	0.00215	0.00211
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00287	-0.00289	-0.00288
	(A2 * B1 * C1 * !Y)	0.00345	0.00350	0.00347
	(A2 * B1 * !C1 * !Y)	-0.00288	-0.00289	-0.00288
	(A2 * B1 * !C1 * !Y)	0.00347	0.00350	0.00347
	(A2 * !B1 * C1 * !Y)	-0.00288	-0.00290	-0.00288
	(A2 * !B1 * C1 * !Y)	0.00336	0.00340	0.00337
	(!A2 * B1 * C1 * !Y)	-0.00264	-0.00275	-0.00275
	(!A2 * B1 * C1 * !Y)	0.00353	0.00359	0.00355
	(!A2 * B1 * !C1 * !Y)	-0.00265	-0.00274	-0.00275
	(!A2 * B1 * !C1 * !Y)	0.00356	0.00359	0.00355
	(!A2 * !B1 * C1 * !Y)	-0.00265	-0.00277	-0.00275
	(!A2 * !B1 * C1 * !Y)	0.00356	0.00359	0.00355
	(!A2 * !B1 * !C1 * Y)	-0.00099	-0.00101	-0.00099
	(!A2 * !B1 * !C1 * Y)	0.00411	0.00419	0.00413

sky130_fd_sc_hs__a211oi_4	(A2 * B1 * C1 * !Y)	-0.00558	-0.00562	-0.00560
	(A2 * B1 * C1 * !Y)	0.00700	0.00711	0.00704
	(A2 * B1 * !C1 * !Y)	-0.00559	-0.00562	-0.00560
	(A2 * B1 * !C1 * !Y)	0.00702	0.00711	0.00704
	(A2 * !B1 * C1 * !Y)	-0.00559	-0.00563	-0.00560
	(A2 * !B1 * C1 * !Y)	0.00680	0.00689	0.00682
	(!A2 * B1 * C1 * !Y)	-0.00514	-0.00540	-0.00539
	(!A2 * B1 * C1 * !Y)	0.00724	0.00729	0.00723
	(!A2 * B1 * !C1 * !Y)	-0.00512	-0.00538	-0.00539
	(!A2 * B1 * !C1 * !Y)	0.00722	0.00728	0.00723
	(!A2 * !B1 * C1 * !Y)	-0.00512	-0.00537	-0.00535
	(!A2 * !B1 * C1 * !Y)	0.00721	0.00728	0.00723
	(!A2 * !B1 * !C1 * Y)	-0.00172	-0.00176	-0.00173
	(!A2 * !B1 * !C1 * Y)	0.00841	0.00859	0.00846

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)	0.00143	0.00145	0.00143
	(A1 * B1 * C1 * !Y)	-0.00171	-0.00179	-0.00178
	(A1 * B1 * !C1 * !Y)	0.00144	0.00145	0.00143
	(A1 * B1 * !C1 * !Y)	-0.00169	-0.00179	-0.00178
	(A1 * !B1 * C1 * !Y)	0.00145	0.00144	0.00143
	(A1 * !B1 * C1 * !Y)	-0.00159	-0.00173	-0.00172
	(!A1 * B1 * !Y)	0.00136	0.00137	0.00136
	(!A1 * B1 * !Y)	-0.00181	-0.00182	-0.00182
	(!A1 * !B1 * C1 * !Y)	0.00135	0.00137	0.00136
	(!A1 * !B1 * C1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * !B1 * !C1 * Y)	0.00136	0.00138	0.00136
	(!A1 * !B1 * !C1 * Y)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00296	0.00299	0.00295
	(A1 * B1 * C1 * !Y)	-0.00345	-0.00361	-0.00358
	(A1 * B1 * !C1 * !Y)	0.00298	0.00299	0.00295
	(A1 * B1 * !C1 * !Y)	-0.00341	-0.00361	-0.00358
	(A1 * !B1 * C1 * !Y)	0.00301	0.00299	0.00296
	(A1 * !B1 * C1 * !Y)	-0.00322	-0.00348	-0.00347
	(!A1 * B1 * !Y)	0.00285	0.00284	0.00284
	(!A1 * B1 * !Y)	-0.00367	-0.00367	-0.00367
	(!A1 * !B1 * C1 * !Y)	0.00282	0.00285	0.00284
	(!A1 * !B1 * C1 * !Y)	-0.00365	-0.00368	-0.00367
	(!A1 * !B1 * !C1 * Y)	0.00260	0.00263	0.00262
	(!A1 * !B1 * !C1 * Y)	-0.00387	-0.00390	-0.00389
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00577	0.00583	0.00576
	(A1 * B1 * C1 * !Y)	-0.00683	-0.00717	-0.00711
	(A1 * B1 * !C1 * !Y)	0.00580	0.00583	0.00576
	(A1 * B1 * !C1 * !Y)	-0.00675	-0.00717	-0.00711
	(A1 * !B1 * C1 * !Y)	0.00583	0.00584	0.00576
	(A1 * !B1 * C1 * !Y)	-0.00631	-0.00692	-0.00689
	(!A1 * B1 * !Y)	0.00546	0.00553	0.00547
	(!A1 * B1 * !Y)	-0.00728	-0.00730	-0.00729
	(!A1 * !B1 * C1 * !Y)	0.00549	0.00555	0.00551
	(!A1 * !B1 * C1 * !Y)	-0.00728	-0.00731	-0.00729
	(!A1 * !B1 * !C1 * Y)	0.00548	0.00552	0.00549
	(!A1 * !B1 * !C1 * Y)	-0.00728	-0.00730	-0.00728

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)**	-0.00143	-0.00143	-0.00143
	(A1 * B1 * C1 * !Y)	0.00177	0.00179	0.00178
	(A1 * B1 * !C1 * !Y)	-0.00143	-0.00143	-0.00143
	(A1 * B1 * !C1 * !Y)	0.00177	0.00179	0.00178
	(A1 * !B1 * C1 * !Y)	-0.00142	-0.00143	-0.00142
	(A1 * !B1 * C1 * !Y)	0.00171	0.00173	0.00172
	(!A1 * B1 * !Y)	-0.00133	-0.00137	-0.00136
	(!A1 * B1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * !B1 * C1 * !Y)	-0.00133	-0.00137	-0.00136
	(!A1 * !B1 * C1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * !B1 * !C1 * Y)	-0.00128	-0.00137	-0.00136
	(!A1 * !B1 * !C1 * Y)	0.00187	0.00184	0.00182
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00296	-0.00296	-0.00295
	(A1 * B1 * C1 * !Y)	0.00359	0.00361	0.00358
	(A1 * B1 * !C1 * !Y)	-0.00294	-0.00296	-0.00295
	(A1 * B1 * !C1 * !Y)	0.00357	0.00361	0.00358
	(A1 * !B1 * C1 * !Y)	-0.00295	-0.00296	-0.00295
	(A1 * !B1 * C1 * !Y)	0.00346	0.00348	0.00347
	(!A1 * B1 * !Y)	-0.00274	-0.00284	-0.00284
	(!A1 * B1 * !Y)	0.00367	0.00369	0.00368
	(!A1 * !B1 * C1 * !Y)	-0.00274	-0.00284	-0.00284
	(!A1 * !B1 * C1 * !Y)	0.00367	0.00369	0.00368
	(!A1 * !B1 * !C1 * Y)	-0.00245	-0.00263	-0.00262
	(!A1 * !B1 * !C1 * Y)	0.00397	0.00394	0.00390

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00575	-0.00577	-0.00575
	(A1 * B1 * C1 * !Y)	0.00713	0.00717	0.00711
	(A1 * B1 * !C1 * !Y)	-0.00573	-0.00577	-0.00574
	(A1 * B1 * !C1 * !Y)	0.00709	0.00717	0.00711
	(A1 * !B1 * C1 * !Y)	-0.00574	-0.00577	-0.00575
	(A1 * !B1 * C1 * !Y)	0.00687	0.00692	0.00689
	(!A1 * B1 * !Y)	-0.00529	-0.00548	-0.00547
	(!A1 * B1 * !Y)	0.00728	0.00730	0.00731
	(!A1 * !B1 * C1 * !Y)	-0.00529	-0.00548	-0.00551
	(!A1 * !B1 * C1 * !Y)	0.00728	0.00731	0.00731
	(!A1 * !B1 * !C1 * Y)	-0.00508	-0.00552	-0.00549
	(!A1 * !B1 * !C1 * Y)	0.00755	0.00739	0.00731

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)	0.00168	0.00163	0.00154
	(A1 * A2 * C1 * !Y)	-0.00123	-0.00123	-0.00122
	(A1 * A2 * !C1 * !Y)	0.00151	0.00153	0.00150
	(A1 * A2 * !C1 * !Y)	-0.00095	-0.00097	-0.00096
	(A1 * !A2 * C1 * !Y)	0.00179	0.00150	0.00149
	(A1 * !A2 * C1 * !Y)	-0.00142	-0.00173	-0.00174
	(!A1 * C1 * !Y)	0.00178	0.00150	0.00149
	(!A1 * C1 * !Y)	-0.00143	-0.00173	-0.00174
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00204	0.00201	0.00186
	(A1 * A2 * C1 * !Y)	-0.00235	-0.00236	-0.00236
	(A1 * A2 * !C1 * !Y)	0.00176	0.00179	0.00175
	(A1 * A2 * !C1 * !Y)	-0.00188	-0.00191	-0.00189
	(A1 * !A2 * C1 * !Y)	0.00236	0.00176	0.00173
	(A1 * !A2 * C1 * !Y)	-0.00280	-0.00343	-0.00344
	(!A1 * C1 * !Y)	0.00234	0.00176	0.00173
	(!A1 * C1 * !Y)	-0.00276	-0.00343	-0.00344
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00376	0.00368	0.00334
	(A1 * A2 * C1 * !Y)	-0.00489	-0.00489	-0.00487
	(A1 * A2 * !C1 * !Y)	0.00318	0.00324	0.00315
	(A1 * A2 * !C1 * !Y)	-0.00391	-0.00397	-0.00394
	(A1 * !A2 * C1 * !Y)	0.00445	0.00319	0.00313
	(A1 * !A2 * C1 * !Y)	-0.00569	-0.00709	-0.00711
	(!A1 * C1 * !Y)	0.00442	0.00318	0.00313
	(!A1 * C1 * !Y)	-0.00571	-0.00709	-0.00711

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)	-0.00150	-0.00150	-0.00149
	(A1 * A2 * C1 * !Y)	0.00123	0.00123	0.00122
	(A1 * A2 * !C1 * !Y)	-0.00145	-0.00147	-0.00147
	(A1 * A2 * !C1 * !Y)	0.00100	0.00101	0.00100
	(A1 * !A2 * C1 * !Y)	-0.00149	-0.00149	-0.00148
	(A1 * !A2 * C1 * !Y)	0.00174	0.00175	0.00174
	(!A1 * C1 * !Y)	-0.00148	-0.00149	-0.00148
	(!A1 * C1 * !Y)	0.00173	0.00174	0.00174
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00177	-0.00177	-0.00177
	(A1 * A2 * C1 * !Y)	0.00235	0.00236	0.00236
	(A1 * A2 * !C1 * !Y)	-0.00168	-0.00169	-0.00168
	(A1 * A2 * !C1 * !Y)	0.00196	0.00197	0.00197
	(A1 * !A2 * C1 * !Y)	-0.00174	-0.00174	-0.00172
	(A1 * !A2 * C1 * !Y)	0.00343	0.00345	0.00344
	(!A1 * C1 * !Y)	-0.00173	-0.00174	-0.00172
	(!A1 * C1 * !Y)	0.00342	0.00345	0.00344
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00317	-0.00317	-0.00316
	(A1 * A2 * C1 * !Y)	0.00489	0.00489	0.00487
	(A1 * A2 * !C1 * !Y)	-0.00300	-0.00303	-0.00302
	(A1 * A2 * !C1 * !Y)	0.00406	0.00410	0.00409
	(A1 * !A2 * C1 * !Y)	-0.00311	-0.00313	-0.00309
	(A1 * !A2 * C1 * !Y)	0.00706	0.00714	0.00711
	(!A1 * C1 * !Y)	-0.00311	-0.00313	-0.00310
	(!A1 * C1 * !Y)	0.00706	0.00714	0.00711

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00176	0.00179	0.00176
	(A1 * B1 * !Y)	-0.00085	-0.00086	-0.00085
	(A1 * A2 * !B1 * !Y)	0.00176	0.00179	0.00176
	(A1 * A2 * !B1 * !Y)	-0.00085	-0.00086	-0.00084
	(!A1 * B1 * !Y)	0.00176	0.00179	0.00176
	(!A1 * B1 * !Y)	-0.00085	-0.00086	-0.00085
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00186	0.00189	0.00186
	(A1 * B1 * !Y)	-0.00173	-0.00176	-0.00173
	(A1 * A2 * !B1 * !Y)	0.00186	0.00189	0.00186
	(A1 * A2 * !B1 * !Y)	-0.00173	-0.00176	-0.00173
	(!A1 * B1 * !Y)	0.00186	0.00189	0.00186
	(!A1 * B1 * !Y)	-0.00174	-0.00177	-0.00174
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00376	0.00382	0.00376
	(A1 * B1 * !Y)	-0.00349	-0.00354	-0.00348
	(A1 * A2 * !B1 * !Y)	0.00376	0.00382	0.00376
	(A1 * A2 * !B1 * !Y)	-0.00348	-0.00353	-0.00347
	(!A1 * B1 * !Y)	0.00376	0.00383	0.00376
	(!A1 * B1 * !Y)	-0.00350	-0.00355	-0.00349

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00171	-0.00172	-0.00176
	(A1 * B1 * !Y)	0.00090	0.00090	0.00086
	(A1 * A2 * !B1 * !Y)	-0.00156	-0.00158	-0.00173
	(A1 * A2 * !B1 * !Y)	0.00098	0.00099	0.00088
	(!A1 * B1 * !Y)	-0.00170	-0.00172	-0.00176
	(!A1 * B1 * !Y)	0.00090	0.00090	0.00086
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00169	-0.00171	-0.00185
	(A1 * B1 * !Y)	0.00190	0.00190	0.00177
	(A1 * A2 * !B1 * !Y)	-0.00146	-0.00148	-0.00179
	(A1 * A2 * !B1 * !Y)	0.00203	0.00203	0.00179
	(!A1 * B1 * !Y)	-0.00168	-0.00171	-0.00185
	(!A1 * B1 * !Y)	0.00189	0.00190	0.00178
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00344	-0.00349	-0.00373
	(A1 * B1 * !Y)	0.00374	0.00378	0.00356
	(A1 * A2 * !B1 * !Y)	-0.00294	-0.00299	-0.00362
	(A1 * A2 * !B1 * !Y)	0.00404	0.00406	0.00359
	(!A1 * B1 * !Y)	-0.00345	-0.00349	-0.00373
	(!A1 * B1 * !Y)	0.00377	0.00379	0.00357

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00261	0.00246	0.00265	0.00262	1.06750
sky130_fd_sc_hs__a211o_2	0.00285	0.00284	0.00281	0.00271	2.06928
sky130_fd_sc_hs__a211o_4	0.00484	0.00496	0.00525	0.00475	3.94532

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	0.06048	0.14086
sky130_fd_sc_hs__a211o_2	0.00000	0.07434	0.14705
sky130_fd_sc_hs__a211o_4	0.00000	0.15086	0.29410

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)	0.08242	0.62317	6.26267
	A2->X (RR)	0.08603	0.62231	6.27667
	B1->X (RR)	0.06761	0.58715	6.11949
	C1->X (RR)	0.06301	0.56934	6.12275
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.08268	0.54499	6.33337
	A2->X (RR)	0.08672	0.53924	6.33253
	B1->X (RR)	0.06625	0.50804	6.19144
	C1->X (RR)	0.06221	0.49322	6.18584
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.08607	0.47498	6.33416
	A2->X (RR)	0.09122	0.47351	6.34736
	B1->X (RR)	0.06422	0.42404	6.15371
	C1->X (RR)	0.06250	0.41655	6.18136

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.21083	0.67013	4.72033
	A2->X (FF)	0.24234	0.71308	4.81477
	B1->X (FF)	0.21869	0.70410	4.98698
	C1->X (FF)	0.18416	0.67646	4.90203
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.27309	0.73330	4.98662
	A2->X (FF)	0.31243	0.78384	5.09159
	B1->X (FF)	0.28900	0.78313	5.28884
	C1->X (FF)	0.25120	0.75506	5.20349
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.25399	0.66622	4.87270
	A2->X (FF)	0.27334	0.69843	4.94432
	B1->X (FF)	0.25356	0.69453	5.10313
	C1->X (FF)	0.21393	0.66536	5.01576

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01110	0.01126	0.02395
	A1	0.00532	0.00549	0.01845
	A2	0.01190	0.01186	0.02242
	A2	0.00530	0.00526	0.01609
	B1	0.00895	0.00940	0.02362
	B1	0.00397	0.00443	0.01898
	C1	0.00740	0.00804	0.02774
	C1	0.00317	0.00383	0.02384
sky130_fd_sc_hs__a211o_2	A1	0.01375	0.01403	0.02602
	A1	0.00746	0.00776	0.02016
	A2	0.01481	0.01492	0.02500
	A2	0.00745	0.00757	0.01807
	B1	0.01258	0.01323	0.02552
	B1	0.00619	0.00690	0.02089
	C1	0.01000	0.01083	0.02941
	C1	0.00535	0.00620	0.02541
sky130_fd_sc_hs__a211o_4	A1	0.02564	0.02656	0.05270
	A1	0.01423	0.01530	0.04213
	A2	0.02775	0.02856	0.05026
	A2	0.01432	0.01524	0.03763
	B1	0.02299	0.02410	0.04971
	B1	0.01151	0.01275	0.04128
	C1	0.01738	0.01913	0.05696
	C1	0.00958	0.01138	0.05048

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00362	0.00363	0.01374
	A1	0.00948	0.00949	0.01945
	A2	0.00400	0.00408	0.01467
	A2	0.01063	0.01073	0.02022
	B1	0.00325	0.00353	0.01689
	B1	0.00824	0.00851	0.02112
	C1	0.00319	0.00435	0.02333
	C1	0.00741	0.00856	0.02739
sky130_fd_sc_hs__a211o_2	A1	0.00628	0.00609	0.01679
	A1	0.01263	0.01244	0.02207
	A2	0.00678	0.00645	0.01630
	A2	0.01415	0.01388	0.02330
	B1	0.00686	0.00661	0.01751
	B1	0.01319	0.01298	0.02341
	C1	0.00595	0.00687	0.02598
	C1	0.01234	0.01276	0.02908
sky130_fd_sc_hs__a211o_4	A1	0.01205	0.01175	0.03628
	A1	0.02360	0.02336	0.04468
	A2	0.01244	0.01213	0.03475
	A2	0.02593	0.02574	0.04567
	B1	0.01136	0.01183	0.03624
	B1	0.02440	0.02411	0.04480
	C1	0.01146	0.01323	0.05252
	C1	0.01924	0.02101	0.05720

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)**	0.00126	0.00126	0.00125
	(A2 * B1 * C1 * X)	-0.00158	-0.00164	-0.00164
	(A2 * B1 * !C1 * X)	0.00129	0.00127	0.00125
	(A2 * B1 * !C1 * X)	-0.00154	-0.00164	-0.00164
	(A2 * !B1 * C1 * X)	0.00129	0.00126	0.00125
	(A2 * !B1 * C1 * X)	-0.00143	-0.00159	-0.00159
	(!A2 * B1 * C1 * X)	0.00119	0.00120	0.00119
	(!A2 * B1 * C1 * X)	-0.00167	-0.00169	-0.00168
	(!A2 * B1 * !C1 * X)	0.00119	0.00120	0.00119
	(!A2 * B1 * !C1 * X)	-0.00167	-0.00168	-0.00168
	(!A2 * !B1 * C1 * X)	0.00119	0.00120	0.00120
	(!A2 * !B1 * C1 * X)	-0.00167	-0.00168	-0.00168
	(!A2 * !B1 * !C1 * !X)	0.00038	0.00037	0.00036
	(!A2 * !B1 * !C1 * !X)	-0.00199	-0.00199	-0.00201
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00154	0.00155	0.00153
	(A2 * B1 * C1 * X)	-0.00150	-0.00157	-0.00157
	(A2 * B1 * !C1 * X)	0.00155	0.00155	0.00153
	(A2 * B1 * !C1 * X)	-0.00148	-0.00158	-0.00157
	(A2 * !B1 * C1 * X)	0.00156	0.00154	0.00153
	(A2 * !B1 * C1 * X)	-0.00138	-0.00153	-0.00153
	(!A2 * B1 * C1 * X)	0.00144	0.00146	0.00145
	(!A2 * B1 * C1 * X)	-0.00160	-0.00161	-0.00160
	(!A2 * B1 * !C1 * X)	0.00145	0.00146	0.00146
	(!A2 * B1 * !C1 * X)	-0.00159	-0.00161	-0.00160
	(!A2 * !B1 * C1 * X)	0.00145	0.00146	0.00145
	(!A2 * !B1 * C1 * X)	-0.00160	-0.00161	-0.00160
	(!A2 * !B1 * !C1 * !X)	0.00046	0.00046	0.00045
	(!A2 * !B1 * !C1 * !X)	-0.00198	-0.00198	-0.00201

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00245	0.00247	0.00244
	(A2 * B1 * C1 * X)	-0.00313	-0.00328	-0.00325
	(A2 * B1 * !C1 * X)	0.00247	0.00247	0.00244
	(A2 * B1 * !C1 * X)	-0.00308	-0.00328	-0.00326
	(A2 * !B1 * C1 * X)	0.00251	0.00247	0.00244
	(A2 * !B1 * C1 * X)	-0.00290	-0.00318	-0.00317
	(!A2 * B1 * C1 * X)	0.00233	0.00233	0.00233
	(!A2 * B1 * C1 * X)	-0.00333	-0.00334	-0.00334
	(!A2 * B1 * !C1 * X)	0.00233	0.00234	0.00234
	(!A2 * B1 * !C1 * X)	-0.00333	-0.00335	-0.00334
	(!A2 * !B1 * C1 * X)	0.00233	0.00234	0.00234
	(!A2 * !B1 * C1 * X)	-0.00333	-0.00335	-0.00334
	(!A2 * !B1 * !C1 * !X)	0.00074	0.00075	0.00072
	(!A2 * !B1 * !C1 * !X)	-0.00384	-0.00388	-0.00393

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)**	-0.00125	-0.00125	-0.00125
	(A2 * B1 * C1 * X)	0.00163	0.00164	0.00164
	(A2 * B1 * !C1 * X)	-0.00125	-0.00125	-0.00125
	(A2 * B1 * !C1 * X)	0.00163	0.00164	0.00164
	(A2 * !B1 * C1 * X)	-0.00125	-0.00125	-0.00124
	(A2 * !B1 * C1 * X)	0.00160	0.00159	0.00159
	(!A2 * B1 * C1 * X)	-0.00116	-0.00120	-0.00119
	(!A2 * B1 * C1 * X)	0.00167	0.00169	0.00168
	(!A2 * B1 * !C1 * X)	-0.00117	-0.00120	-0.00119
	(!A2 * B1 * !C1 * X)	0.00169	0.00169	0.00169
	(!A2 * !B1 * C1 * X)	-0.00116	-0.00120	-0.00120
	(!A2 * !B1 * C1 * X)	0.00169	0.00171	0.00169
	(!A2 * !B1 * !C1 * !X)	-0.00035	-0.00036	-0.00035
	(!A2 * !B1 * !C1 * !X)	0.00201	0.00205	0.00201
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00152	-0.00153	-0.00153
	(A2 * B1 * C1 * X)	0.00156	0.00157	0.00157
	(A2 * B1 * !C1 * X)	-0.00152	-0.00153	-0.00153
	(A2 * B1 * !C1 * X)	0.00156	0.00158	0.00157
	(A2 * !B1 * C1 * X)	-0.00151	-0.00152	-0.00152
	(A2 * !B1 * C1 * X)	0.00151	0.00153	0.00153
	(!A2 * B1 * C1 * X)	-0.00142	-0.00146	-0.00145
	(!A2 * B1 * C1 * X)	0.00160	0.00162	0.00161
	(!A2 * B1 * !C1 * X)	-0.00141	-0.00146	-0.00146
	(!A2 * B1 * !C1 * X)	0.00159	0.00161	0.00161
	(!A2 * !B1 * C1 * X)	-0.00142	-0.00146	-0.00145
	(!A2 * !B1 * C1 * X)	0.00161	0.00162	0.00161
	(!A2 * !B1 * !C1 * !X)	-0.00044	-0.00044	-0.00043
	(!A2 * !B1 * !C1 * !X)	0.00202	0.00204	0.00201

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00244	-0.00245	-0.00244
	(A2 * B1 * C1 * X)	0.00326	0.00328	0.00325
	(A2 * B1 * !C1 * X)	-0.00244	-0.00245	-0.00244
	(A2 * B1 * !C1 * X)	0.00326	0.00328	0.00326
	(A2 * !B1 * C1 * X)	-0.00243	-0.00244	-0.00243
	(A2 * !B1 * C1 * X)	0.00315	0.00318	0.00317
	(!A2 * B1 * C1 * X)	-0.00225	-0.00233	-0.00233
	(!A2 * B1 * C1 * X)	0.00334	0.00337	0.00335
	(!A2 * B1 * !C1 * X)	-0.00225	-0.00234	-0.00234
	(!A2 * B1 * !C1 * X)	0.00333	0.00336	0.00335
	(!A2 * !B1 * C1 * X)	-0.00225	-0.00233	-0.00234
	(!A2 * !B1 * C1 * X)	0.00334	0.00336	0.00335
	(!A2 * !B1 * !C1 * !X)	-0.00069	-0.00071	-0.00070
	(!A2 * !B1 * !C1 * !X)	0.00392	0.00400	0.00394

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)**	0.00129	0.00129	0.00128
	(A1 * B1 * C1 * X)	-0.00156	-0.00162	-0.00162
	(A1 * B1 * !C1 * X)	0.00129	0.00129	0.00128
	(A1 * B1 * !C1 * X)	-0.00152	-0.00163	-0.00162
	(A1 * !B1 * C1 * X)	0.00132	0.00129	0.00128
	(A1 * !B1 * C1 * X)	-0.00144	-0.00158	-0.00157
	(!A1 * B1 * X)	0.00121	0.00123	0.00122
	(!A1 * B1 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * !B1 * C1 * X)	0.00122	0.00123	0.00122
	(!A1 * !B1 * C1 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * !B1 * !C1 * !X)	0.00110	0.00111	0.00111
	(!A1 * !B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00165	0.00166	0.00163
	(A1 * B1 * C1 * X)	-0.00152	-0.00159	-0.00158
	(A1 * B1 * !C1 * X)	0.00166	0.00166	0.00164
	(A1 * B1 * !C1 * X)	-0.00149	-0.00159	-0.00158
	(A1 * !B1 * C1 * X)	0.00168	0.00165	0.00163
	(A1 * !B1 * C1 * X)	-0.00140	-0.00154	-0.00154
	(!A1 * B1 * X)	0.00156	0.00158	0.00157
	(!A1 * B1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * C1 * X)	0.00156	0.00157	0.00156
	(!A1 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * !C1 * !X)	0.00134	0.00135	0.00134
	(!A1 * !B1 * !C1 * !X)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00293	0.00296	0.00293
	(A1 * B1 * C1 * X)	-0.00302	-0.00318	-0.00315
	(A1 * B1 * !C1 * X)	0.00294	0.00296	0.00293
	(A1 * B1 * !C1 * X)	-0.00299	-0.00318	-0.00315
	(A1 * !B1 * C1 * X)	0.00298	0.00297	0.00293
	(A1 * !B1 * C1 * X)	-0.00282	-0.00308	-0.00307
	(!A1 * B1 * X)	0.00280	0.00284	0.00281
	(!A1 * B1 * X)	-0.00322	-0.00324	-0.00323
	(!A1 * !B1 * C1 * X)	0.00280	0.00283	0.00281
	(!A1 * !B1 * C1 * X)	-0.00322	-0.00324	-0.00322
	(!A1 * !B1 * !C1 * !X)	0.00275	0.00278	0.00276
	(!A1 * !B1 * !C1 * !X)	-0.00328	-0.00330	-0.00328

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)**	-0.00127	-0.00128	-0.00128
	(A1 * B1 * C1 * X)	0.00161	0.00162	0.00162
	(A1 * B1 * !C1 * X)	-0.00127	-0.00128	-0.00128
	(A1 * B1 * !C1 * X)	0.00161	0.00163	0.00162
	(A1 * !B1 * C1 * X)	-0.00127	-0.00127	-0.00127
	(A1 * !B1 * C1 * X)	0.00156	0.00158	0.00157
	(!A1 * B1 * X)	-0.00119	-0.00123	-0.00122
	(!A1 * B1 * X)	0.00165	0.00168	0.00166
	(!A1 * !B1 * C1 * X)	-0.00119	-0.00122	-0.00122
	(!A1 * !B1 * C1 * X)	0.00165	0.00167	0.00166
	(!A1 * !B1 * !C1 * !X)	-0.00103	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * !X)	0.00182	0.00181	0.00178
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00163	-0.00164	-0.00163
	(A1 * B1 * C1 * X)	0.00157	0.00159	0.00158
	(A1 * B1 * !C1 * X)	-0.00163	-0.00164	-0.00164
	(A1 * B1 * !C1 * X)	0.00157	0.00159	0.00158
	(A1 * !B1 * C1 * X)	-0.00162	-0.00163	-0.00163
	(A1 * !B1 * C1 * X)	0.00152	0.00154	0.00154
	(!A1 * B1 * X)	-0.00153	-0.00157	-0.00157
	(!A1 * B1 * X)	0.00161	0.00163	0.00162
	(!A1 * !B1 * C1 * X)	-0.00153	-0.00157	-0.00156
	(!A1 * !B1 * C1 * X)	0.00161	0.00163	0.00162
	(!A1 * !B1 * !C1 * !X)	-0.00125	-0.00134	-0.00134
	(!A1 * !B1 * !C1 * !X)	0.00190	0.00188	0.00185

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00293	-0.00294	-0.00293
	(A1 * B1 * C1 * X)	0.00315	0.00318	0.00315
	(A1 * B1 * !C1 * X)	-0.00293	-0.00294	-0.00292
	(A1 * B1 * !C1 * X)	0.00315	0.00318	0.00315
	(A1 * !B1 * C1 * X)	-0.00291	-0.00292	-0.00291
	(A1 * !B1 * C1 * X)	0.00306	0.00308	0.00307
	(!A1 * B1 * X)	-0.00274	-0.00284	-0.00281
	(!A1 * B1 * X)	0.00322	0.00326	0.00324
	(!A1 * !B1 * C1 * X)	-0.00274	-0.00283	-0.00281
	(!A1 * !B1 * C1 * X)	0.00322	0.00326	0.00324
	(!A1 * !B1 * !C1 * !X)	-0.00260	-0.00278	-0.00276
	(!A1 * !B1 * !C1 * !X)	0.00338	0.00332	0.00330

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)	0.00168	0.00161	0.00155
	(A1 * A2 * C1 * X)	-0.00110	-0.00111	-0.00111
	(A1 * A2 * !C1 * X)	0.00151	0.00153	0.00149
	(A1 * A2 * !C1 * X)	-0.00086	-0.00088	-0.00087
	(A1 * !A2 * C1 * X)	0.00180	0.00152	0.00148
	(A1 * !A2 * C1 * X)	-0.00126	-0.00155	-0.00157
	(!A1 * C1 * X)	0.00179	0.00152	0.00148
	(!A1 * C1 * X)	-0.00127	-0.00155	-0.00157
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00174	0.00171	0.00162
	(A1 * A2 * C1 * X)	-0.00110	-0.00111	-0.00111
	(A1 * A2 * !C1 * X)	0.00156	0.00159	0.00155
	(A1 * A2 * !C1 * X)	-0.00086	-0.00088	-0.00087
	(A1 * !A2 * C1 * X)	0.00184	0.00156	0.00154
	(A1 * !A2 * C1 * X)	-0.00124	-0.00155	-0.00157
	(!A1 * C1 * X)	0.00183	0.00155	0.00154
	(!A1 * C1 * X)	-0.00126	-0.00154	-0.00157
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00311	0.00303	0.00285
	(A1 * A2 * C1 * X)	-0.00232	-0.00233	-0.00231
	(A1 * A2 * !C1 * X)	0.00276	0.00281	0.00274
	(A1 * A2 * !C1 * X)	-0.00184	-0.00187	-0.00185
	(A1 * !A2 * C1 * X)	0.00332	0.00274	0.00272
	(A1 * !A2 * C1 * X)	-0.00261	-0.00322	-0.00326
	(!A1 * C1 * X)	0.00334	0.00275	0.00272
	(!A1 * C1 * X)	-0.00259	-0.00322	-0.00326

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)	-0.00149	-0.00150	-0.00149
	(A1 * A2 * C1 * X)	0.00110	0.00111	0.00111
	(A1 * A2 * !C1 * X)	-0.00145	-0.00146	-0.00147
	(A1 * A2 * !C1 * X)	0.00092	0.00092	0.00090
	(A1 * !A2 * C1 * X)	-0.00148	-0.00148	-0.00147
	(A1 * !A2 * C1 * X)	0.00156	0.00157	0.00157
	(!A1 * C1 * X)	-0.00148	-0.00148	-0.00147
	(!A1 * C1 * X)	0.00156	0.00157	0.00157
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * A2 * C1 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * !C1 * X)	-0.00152	-0.00153	-0.00153
	(A1 * A2 * !C1 * X)	0.00092	0.00092	0.00091
	(A1 * !A2 * C1 * X)	-0.00152	-0.00153	-0.00152
	(A1 * !A2 * C1 * X)	0.00156	0.00158	0.00157
	(!A1 * C1 * X)	-0.00152	-0.00153	-0.00152
	(!A1 * C1 * X)	0.00156	0.00158	0.00157
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00274	-0.00275	-0.00274
	(A1 * A2 * C1 * X)	0.00232	0.00233	0.00231
	(A1 * A2 * !C1 * X)	-0.00267	-0.00269	-0.00269
	(A1 * A2 * !C1 * X)	0.00193	0.00194	0.00192
	(A1 * !A2 * C1 * X)	-0.00271	-0.00271	-0.00269
	(A1 * !A2 * C1 * X)	0.00326	0.00328	0.00326
	(!A1 * C1 * X)	-0.00271	-0.00271	-0.00269
	(!A1 * C1 * X)	0.00325	0.00328	0.00326

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00163	0.00165	0.00162
	(A1 * B1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * !B1 * X)	0.00162	0.00165	0.00162
	(A1 * A2 * !B1 * X)	-0.00079	-0.00081	-0.00080
	(!A1 * B1 * X)	0.00163	0.00165	0.00162
	(!A1 * B1 * X)	-0.00080	-0.00082	-0.00080
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00164	0.00167	0.00164
	(A1 * B1 * X)	-0.00083	-0.00085	-0.00083
	(A1 * A2 * !B1 * X)	0.00164	0.00167	0.00164
	(A1 * A2 * !B1 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * B1 * X)	0.00164	0.00167	0.00164
	(!A1 * B1 * X)	-0.00083	-0.00085	-0.00083
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00265	0.00270	0.00266
	(A1 * B1 * X)	-0.00161	-0.00163	-0.00161
	(A1 * A2 * !B1 * X)	0.00265	0.00270	0.00266
	(A1 * A2 * !B1 * X)	-0.00160	-0.00163	-0.00160
	(!A1 * B1 * X)	0.00265	0.00270	0.00265
	(!A1 * B1 * X)	-0.00162	-0.00165	-0.00162

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00157	-0.00158	-0.00162
	(A1 * B1 * X)	0.00084	0.00084	0.00081
	(A1 * A2 * !B1 * X)	-0.00145	-0.00146	-0.00159
	(A1 * A2 * !B1 * X)	0.00093	0.00093	0.00083
	(!A1 * B1 * X)	-0.00157	-0.00158	-0.00162
	(!A1 * B1 * X)	0.00084	0.00085	0.00081
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00159	-0.00160	-0.00163
	(A1 * B1 * X)	0.00088	0.00088	0.00084
	(A1 * A2 * !B1 * X)	-0.00147	-0.00149	-0.00161
	(A1 * A2 * !B1 * X)	0.00096	0.00096	0.00086
	(!A1 * B1 * X)	-0.00159	-0.00160	-0.00163
	(!A1 * B1 * X)	0.00088	0.00088	0.00084
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00253	-0.00255	-0.00264
	(A1 * B1 * X)	0.00172	0.00173	0.00164
	(A1 * A2 * !B1 * X)	-0.00229	-0.00232	-0.00259
	(A1 * A2 * !B1 * X)	0.00187	0.00187	0.00166
	(!A1 * B1 * X)	-0.00253	-0.00255	-0.00264
	(!A1 * B1 * X)	0.00173	0.00174	0.00165

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00277	0.00268	0.00255	0.50441
sky130_fd_sc_hs__a21boi_2	0.00525	0.00508	0.00251	0.97472
sky130_fd_sc_hs__a21boi_4	0.01042	0.01035	0.00369	1.76283

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	0.17760	0.33611
sky130_fd_sc_hs__a21boi_2	0.00000	0.13020	0.22088
sky130_fd_sc_hs__a21boi_4	0.00000	0.41340	0.75842

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)	0.08237	0.96005	10.49150
	A2->Y (FR)	0.10366	1.00775	10.77220
	B1_N->Y (RR)	0.10359	0.76782	6.60259
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.07528	0.83753	10.70790
	A2->Y (FR)	0.09731	0.85690	10.68640
	B1_N->Y (RR)	0.09721	0.62945	6.46742
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.07577	0.72566	10.54520
	A2->Y (FR)	0.09678	0.73664	10.36270
	B1_N->Y (RR)	0.08789	0.56422	6.85958

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.02822	0.41477	4.50251
	A2->Y (RF)	0.03168	0.38272	4.08053
	B1_N->Y (FF)	0.07193	0.40743	2.79704
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.02634	0.37439	4.77940
	A2->Y (RF)	0.03151	0.34592	4.28460
	B1_N->Y (FF)	0.07955	0.42777	2.99631
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.02740	0.33412	4.82436
	A2->Y (RF)	0.03240	0.28948	4.07886
	B1_N->Y (FF)	0.08286	0.40041	2.70925

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00092	0.00081	0.00306
	A1	0.00483	0.00473	0.00703
	A2	0.00144	0.00135	0.00361
	A2	0.00625	0.00618	0.00848
	B1_N	0.00736	0.00798	0.03206
	B1_N	0.00491	0.00553	0.02964
sky130_fd_sc_hs__a21boi_2	A1	0.00193	0.00178	0.00610
	A1	0.00952	0.00938	0.01379
	A2	0.00353	0.00330	0.00768
	A2	0.01295	0.01272	0.01719
	B1_N	0.01107	0.01176	0.03644
	B1_N	0.01000	0.01070	0.03551
sky130_fd_sc_hs__a21boi_4	A1	0.00397	0.00362	0.01245
	A1	0.01940	0.01903	0.02806
	A2	0.00652	0.00602	0.01465
	A2	0.02568	0.02487	0.03382
	B1_N	0.01925	0.02032	0.06162
	B1_N	0.01915	0.02023	0.06174

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00526	0.00524	0.00773
	A1	0.00139	0.00134	0.00369
	A2	0.00620	0.00612	0.00809
	A2	0.00138	0.00127	0.00316
	B1_N	0.00418	0.00565	0.02799
	B1_N	0.00652	0.00795	0.03033
sky130_fd_sc_hs__a21boi_2	A1	0.00953	0.00970	0.01468
	A1	0.00203	0.00214	0.00636
	A2	0.01145	0.01119	0.01493
	A2	0.00199	0.00174	0.00538
	B1_N	0.00792	0.00949	0.03188
	B1_N	0.00871	0.01024	0.03264
sky130_fd_sc_hs__a21boi_4	A1	0.01863	0.01845	0.02760
	A1	0.00339	0.00315	0.01214
	A2	0.02276	0.02217	0.03179
	A2	0.00354	0.00296	0.01069
	B1_N	0.01618	0.01906	0.05846
	B1_N	0.01577	0.01864	0.05807

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)	0.00161	0.00147	0.00145
	(A2 * !B1_N * !Y)	-0.00166	-0.00185	-0.00184
	(!A2 * B1_N * Y)	0.00057	0.00057	0.00055
	(!A2 * B1_N * Y)	-0.00207	-0.00208	-0.00210
	(!A2 * !B1_N * !Y)	0.00138	0.00139	0.00139
	(!A2 * !B1_N * !Y)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00319	0.00291	0.00286
	(A2 * !B1_N * !Y)	-0.00316	-0.00357	-0.00356
	(!A2 * B1_N * Y)	0.00102	0.00103	0.00098
	(!A2 * B1_N * Y)	-0.00410	-0.00415	-0.00421
	(!A2 * !B1_N * !Y)	0.00272	0.00275	0.00273
	(!A2 * !B1_N * !Y)	-0.00359	-0.00362	-0.00360
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00637	0.00573	0.00563
	(A2 * !B1_N * !Y)	-0.00630	-0.00719	-0.00718
	(!A2 * B1_N * Y)	0.00190	0.00192	0.00183
	(!A2 * B1_N * Y)	-0.00829	-0.00837	-0.00847
	(!A2 * !B1_N * !Y)	0.00538	0.00540	0.00538
	(!A2 * !B1_N * !Y)	-0.00722	-0.00727	-0.00726

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)	-0.00144	-0.00145	-0.00145
	(A2 * !B1_N * !Y)	0.00183	0.00185	0.00184
	(!A2 * B1_N * Y)	-0.00054	-0.00054	-0.00054
	(!A2 * B1_N * Y)	0.00211	0.00211	0.00211
	(!A2 * !B1_N * !Y)	-0.00134	-0.00139	-0.00139
	(!A2 * !B1_N * !Y)	0.00186	0.00188	0.00187
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00285	-0.00287	-0.00285
	(A2 * !B1_N * !Y)	0.00354	0.00358	0.00356
	(!A2 * B1_N * Y)	-0.00096	-0.00095	-0.00095
	(!A2 * B1_N * Y)	0.00423	0.00421	0.00422
	(!A2 * !B1_N * !Y)	-0.00262	-0.00275	-0.00273
	(!A2 * !B1_N * !Y)	0.00360	0.00365	0.00361
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00560	-0.00564	-0.00560
	(A2 * !B1_N * !Y)	0.00714	0.00725	0.00718
	(!A2 * B1_N * Y)	-0.00178	-0.00178	-0.00177
	(!A2 * B1_N * Y)	0.00852	0.00852	0.00850
	(!A2 * !B1_N * !Y)	-0.00515	-0.00540	-0.00538
	(!A2 * !B1_N * !Y)	0.00722	0.00734	0.00728

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)	0.00168	0.00154	0.00151
	(A1 * !B1_N * !Y)	-0.00157	-0.00178	-0.00178
	(!A1 * B1_N * Y)	0.00144	0.00145	0.00144
	(!A1 * B1_N * Y)	-0.00180	-0.00181	-0.00181
	(!A1 * !B1_N * !Y)	0.00144	0.00145	0.00144
	(!A1 * !B1_N * !Y)	-0.00179	-0.00181	-0.00180
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00314	0.00286	0.00281
	(A1 * !B1_N * !Y)	-0.00317	-0.00356	-0.00355
	(!A1 * B1_N * Y)	0.00269	0.00271	0.00270
	(!A1 * B1_N * Y)	-0.00358	-0.00360	-0.00359
	(!A1 * !B1_N * !Y)	0.00269	0.00273	0.00270
	(!A1 * !B1_N * !Y)	-0.00359	-0.00362	-0.00359
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00647	0.00580	0.00570
	(A1 * !B1_N * !Y)	-0.00625	-0.00715	-0.00714
	(!A1 * B1_N * Y)	0.00520	0.00522	0.00522
	(!A1 * B1_N * Y)	-0.00746	-0.00747	-0.00747
	(!A1 * !B1_N * !Y)	0.00544	0.00548	0.00546
	(!A1 * !B1_N * !Y)	-0.00721	-0.00724	-0.00722

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)	-0.00151	-0.00151	-0.00150
	(A1 * !B1_N * !Y)	0.00177	0.00178	0.00178
	(!A1 * B1_N * Y)	-0.00136	-0.00144	-0.00144
	(!A1 * B1_N * Y)	0.00186	0.00184	0.00182
	(!A1 * !B1_N * !Y)	-0.00141	-0.00145	-0.00144
	(!A1 * !B1_N * !Y)	0.00180	0.00182	0.00181
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00281	-0.00282	-0.00280
	(A1 * !B1_N * !Y)	0.00355	0.00357	0.00355
	(!A1 * B1_N * Y)	-0.00251	-0.00270	-0.00270
	(!A1 * B1_N * Y)	0.00369	0.00364	0.00360
	(!A1 * !B1_N * !Y)	-0.00259	-0.00269	-0.00270
	(!A1 * !B1_N * !Y)	0.00359	0.00362	0.00360
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00568	-0.00570	-0.00566
	(A1 * !B1_N * !Y)	0.00715	0.00718	0.00714
	(!A1 * B1_N * Y)	-0.00486	-0.00522	-0.00522
	(!A1 * B1_N * Y)	0.00768	0.00758	0.00750
	(!A1 * !B1_N * !Y)	-0.00527	-0.00546	-0.00546
	(!A1 * !B1_N * !Y)	0.00722	0.00726	0.00724

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)	0.00450	0.00512	0.02917
	(A1 * A2 * !Y)	0.00076	0.00138	0.02544
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00530	0.00591	0.03050
	(A1 * A2 * !Y)	0.00164	0.00225	0.02686
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00816	0.00884	0.04981
	(A1 * A2 * !Y)	0.00275	0.00341	0.04443

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)	0.00090	0.00223	0.02667
	(A1 * A2 * !Y)	0.00460	0.00596	0.03038
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00267	0.00385	0.02882
	(A1 * A2 * !Y)	0.00629	0.00749	0.03244
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00573	0.00787	0.05055
	(A1 * A2 * !Y)	0.01108	0.01318	0.05589

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00257	0.00247	0.00216	0.98280
sky130_fd_sc_hs__a21bo_2	0.00274	0.00259	0.00226	1.81637
sky130_fd_sc_hs__a21bo_4	0.00474	0.00503	0.00262	3.43092

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	0.24029	0.39711
sky130_fd_sc_hs__a21bo_2	0.00000	0.26266	0.41115
sky130_fd_sc_hs__a21bo_4	0.00000	0.30298	0.37995

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)	0.08171	0.63057	6.37422
	A2->X (RR)	0.08504	0.63307	6.39001
	B1_N->X (FR)	0.12133	0.79323	8.23959
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.07783	0.52964	6.11128
	A2->X (RR)	0.08146	0.52651	6.10897
	B1_N->X (FR)	0.12559	0.69348	7.99064
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.08029	0.45994	6.19305
	A2->X (RR)	0.08630	0.46260	6.20722
	B1_N->X (FR)	0.14246	0.66512	8.22813

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.13586	0.57464	4.51285
	A2->X (FF)	0.15594	0.60796	4.58654
	B1_N->X (RF)	0.15555	0.40183	2.19169
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.17097	0.60195	4.50047
	A2->X (FF)	0.19561	0.64045	4.59086
	B1_N->X (RF)	0.20200	0.43246	2.07783
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.16301	0.55339	4.43434
	A2->X (FF)	0.17903	0.58370	4.50175
	B1_N->X (RF)	0.18274	0.38526	1.99197

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00817	0.00867	0.02326
	A1	0.00447	0.00496	0.01971
	A2	0.00906	0.00939	0.02173
	A2	0.00447	0.00480	0.01730
	B1_N	0.00746	0.00903	0.03323
	B1_N	0.00929	0.01085	0.03556
sky130_fd_sc_hs__a21bo_2	A1	0.01064	0.01131	0.02527
	A1	0.00677	0.00746	0.02206
	A2	0.01149	0.01203	0.02401
	A2	0.00674	0.00730	0.01992
	B1_N	0.01033	0.01184	0.03581
	B1_N	0.01217	0.01371	0.03836
sky130_fd_sc_hs__a21bo_4	A1	0.01959	0.02100	0.04985
	A1	0.01285	0.01437	0.04431
	A2	0.02191	0.02295	0.04717
	A2	0.01289	0.01402	0.03931
	B1_N	0.01842	0.02031	0.04672
	B1_N	0.01964	0.02157	0.04895

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00437	0.00450	0.01797
	A1	0.00811	0.00824	0.02147
	A2	0.00451	0.00474	0.01695
	A2	0.00908	0.00930	0.02139
	B1_N	0.00979	0.01055	0.03218
	B1_N	0.00789	0.00861	0.03015
sky130_fd_sc_hs__a21bo_2	A1	0.00652	0.00680	0.02003
	A1	0.01041	0.01067	0.02313
	A2	0.00710	0.00739	0.01969
	A2	0.01182	0.01210	0.02389
	B1_N	0.01307	0.01359	0.03557
	B1_N	0.01112	0.01165	0.03343
sky130_fd_sc_hs__a21bo_4	A1	0.01297	0.01371	0.03957
	A1	0.01976	0.02023	0.04558
	A2	0.01338	0.01396	0.03758
	A2	0.02233	0.02281	0.04638
	B1_N	0.02192	0.02292	0.04741
	B1_N	0.02046	0.02141	0.04550

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)	0.00148	0.00128	0.00125
	(A2 * !B1_N * X)	-0.00151	-0.00174	-0.00175
	(!A2 * B1_N * !X)	0.00047	0.00047	0.00046
	(!A2 * B1_N * !X)	-0.00197	-0.00197	-0.00199
	(!A2 * !B1_N * X)	0.00119	0.00120	0.00119
	(!A2 * !B1_N * X)	-0.00176	-0.00177	-0.00177
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00168	0.00151	0.00148
	(A2 * !B1_N * X)	-0.00148	-0.00171	-0.00171
	(!A2 * B1_N * !X)	0.00059	0.00059	0.00057
	(!A2 * B1_N * !X)	-0.00195	-0.00196	-0.00198
	(!A2 * !B1_N * X)	0.00141	0.00143	0.00142
	(!A2 * !B1_N * X)	-0.00173	-0.00174	-0.00173
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00276	0.00244	0.00239
	(A2 * !B1_N * X)	-0.00284	-0.00326	-0.00327
	(!A2 * B1_N * !X)	0.00076	0.00076	0.00072
	(!A2 * B1_N * !X)	-0.00379	-0.00379	-0.00385
	(!A2 * !B1_N * X)	0.00228	0.00230	0.00228
	(!A2 * !B1_N * X)	-0.00330	-0.00333	-0.00330

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)	-0.00124	-0.00125	-0.00124
	(A2 * !B1_N * X)	0.00174	0.00176	0.00175
	(!A2 * B1_N * !X)	-0.00045	-0.00045	-0.00044
	(!A2 * B1_N * !X)	0.00200	0.00203	0.00200
	(!A2 * !B1_N * X)	-0.00116	-0.00119	-0.00119
	(!A2 * !B1_N * X)	0.00176	0.00178	0.00177
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00147	-0.00148	-0.00147
	(A2 * !B1_N * X)	0.00170	0.00171	0.00171
	(!A2 * B1_N * !X)	-0.00056	-0.00057	-0.00056
	(!A2 * B1_N * !X)	0.00199	0.00202	0.00199
	(!A2 * !B1_N * X)	-0.00138	-0.00142	-0.00142
	(!A2 * !B1_N * X)	0.00174	0.00174	0.00173
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00238	-0.00238	-0.00237
	(A2 * !B1_N * X)	0.00327	0.00328	0.00327
	(!A2 * B1_N * !X)	-0.00069	-0.00071	-0.00070
	(!A2 * B1_N * !X)	0.00384	0.00392	0.00386
	(!A2 * !B1_N * X)	-0.00217	-0.00229	-0.00228
	(!A2 * !B1_N * X)	0.00330	0.00337	0.00332

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)	0.00164	0.00148	0.00146
	(A1 * !B1_N * X)	-0.00141	-0.00160	-0.00161
	(!A1 * B1_N * !X)	0.00140	0.00142	0.00141
	(!A1 * B1_N * !X)	-0.00161	-0.00163	-0.00162
	(!A1 * !B1_N * X)	0.00139	0.00141	0.00139
	(!A1 * !B1_N * X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00166	0.00148	0.00145
	(A1 * !B1_N * X)	-0.00142	-0.00166	-0.00167
	(!A1 * B1_N * !X)	0.00139	0.00139	0.00139
	(!A1 * B1_N * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !B1_N * X)	0.00138	0.00139	0.00138
	(!A1 * !B1_N * X)	-0.00169	-0.00169	-0.00169
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00326	0.00299	0.00294
	(A1 * !B1_N * X)	-0.00287	-0.00325	-0.00325
	(!A1 * B1_N * !X)	0.00283	0.00284	0.00284
	(!A1 * B1_N * !X)	-0.00327	-0.00328	-0.00327
	(!A1 * !B1_N * X)	0.00282	0.00285	0.00282
	(!A1 * !B1_N * X)	-0.00327	-0.00330	-0.00328

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)	-0.00145	-0.00145	-0.00145
	(A1 * !B1_N * X)	0.00160	0.00161	0.00161
	(!A1 * B1_N * !X)	-0.00132	-0.00140	-0.00141
	(!A1 * B1_N * !X)	0.00169	0.00165	0.00163
	(!A1 * !B1_N * X)	-0.00137	-0.00140	-0.00139
	(!A1 * !B1_N * X)	0.00162	0.00163	0.00163
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00144	-0.00144	-0.00144
	(A1 * !B1_N * X)	0.00167	0.00167	0.00167
	(!A1 * B1_N * !X)	-0.00130	-0.00138	-0.00139
	(!A1 * B1_N * !X)	0.00174	0.00171	0.00170
	(!A1 * !B1_N * X)	-0.00134	-0.00139	-0.00138
	(!A1 * !B1_N * X)	0.00169	0.00171	0.00169
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00293	-0.00294	-0.00292
	(A1 * !B1_N * X)	0.00323	0.00327	0.00325
	(!A1 * B1_N * !X)	-0.00264	-0.00284	-0.00284
	(!A1 * B1_N * !X)	0.00339	0.00332	0.00329
	(!A1 * !B1_N * X)	-0.00273	-0.00285	-0.00282
	(!A1 * !B1_N * X)	0.00327	0.00332	0.00329

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)	0.00375	0.00445	0.02820
	(A1 * A2 * X)	0.00058	0.00128	0.02505
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00423	0.00483	0.02840
	(A1 * A2 * X)	0.00093	0.00151	0.02509
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00569	0.00622	0.03048
	(A1 * A2 * X)	0.00187	0.00239	0.02667

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)	0.00110	0.00248	0.02656
	(A1 * A2 * X)	0.00425	0.00563	0.02970
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00134	0.00264	0.02665
	(A1 * A2 * X)	0.00463	0.00595	0.02994
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00215	0.00342	0.02779
	(A1 * A2 * X)	0.00593	0.00723	0.03158

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00286	0.00268	0.00280	0.49770
sky130_fd_sc_hs__a21oi_2	0.00521	0.00541	0.00418	0.87340
sky130_fd_sc_hs__a21oi_4	0.01060	0.01032	0.00824	1.68614

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.02933	0.05288
sky130_fd_sc_hs__a21oi_2	0.00000	0.05633	0.10576
sky130_fd_sc_hs__a21oi_4	0.00000	0.11266	0.21153

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)	0.08230	0.95661	10.41110
	A2->Y (FR)	0.10185	1.00170	10.68320
	B1->Y (FR)	0.07908	0.98808	10.91480
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.07881	0.85464	10.64800
	A2->Y (FR)	0.10394	0.86906	10.48810
	B1->Y (FR)	0.04363	0.83111	10.79670
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.07319	0.73104	10.52900
	A2->Y (FR)	0.09509	0.74003	10.32940
	B1->Y (FR)	0.03971	0.71404	10.72970

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.02840	0.41210	4.45294
	A2->Y (RF)	0.03126	0.38085	4.04684
	B1->Y (RF)	0.01813	0.32526	3.57620
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.02678	0.36626	4.49640
	A2->Y (RF)	0.03329	0.33629	4.00705
	B1->Y (RF)	0.02233	0.40546	5.16578
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.02630	0.32778	4.68475
	A2->Y (RF)	0.03082	0.28291	3.94369
	B1->Y (RF)	0.02256	0.36707	5.44516

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00022	-0.00033	0.00192
	A1	0.00501	0.00491	0.00721
	A2	0.00015	0.00006	0.00234
	A2	0.00629	0.00622	0.00853
	B1	-0.00049	-0.00017	0.00577
	B1	0.00370	0.00404	0.01003
sky130_fd_sc_hs__a21oi_2	A1	-0.00053	-0.00072	0.00372
	A1	0.00925	0.00894	0.01361
	A2	0.00085	0.00057	0.00507
	A2	0.01285	0.01262	0.01717
	B1	0.00001	0.00068	0.00778
	B1	0.00653	0.00722	0.01429
sky130_fd_sc_hs__a21oi_4	A1	-0.00178	-0.00207	0.00719
	A1	0.01827	0.01787	0.02744
	A2	0.00103	0.00059	0.01001
	A2	0.02501	0.02432	0.03402
	B1	-0.00028	0.00085	0.01455
	B1	0.01277	0.01393	0.02791

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00647	0.00641	0.00888
	A1	0.00131	0.00124	0.00359
	A2	0.00741	0.00735	0.00927
	A2	0.00130	0.00118	0.00309
	B1	0.00393	0.00409	0.00687
	B1	-0.00026	-0.00015	0.00259
sky130_fd_sc_hs__a21oi_2	A1	0.01167	0.01160	0.01667
	A1	0.00200	0.00188	0.00654
	A2	0.01411	0.01381	0.01787
	A2	0.00205	0.00175	0.00559
	B1	0.00498	0.00524	0.00962
	B1	-0.00153	-0.00134	0.00229
sky130_fd_sc_hs__a21oi_4	A1	0.02339	0.02309	0.03305
	A1	0.00358	0.00324	0.01222
	A2	0.02737	0.02680	0.03511
	A2	0.00341	0.00283	0.01059
	B1	0.01030	0.01063	0.01852
	B1	-0.00270	-0.00239	0.00460

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00165	0.00150	0.00147
	(A2 * B1 * !Y)	-0.00155	-0.00176	-0.00176
	(!A2 * B1 * !Y)	0.00140	0.00141	0.00140
	(!A2 * B1 * !Y)	-0.00179	-0.00180	-0.00180
	(!A2 * !B1 * Y)	0.00046	0.00046	0.00045
	(!A2 * !B1 * Y)	-0.00213	-0.00213	-0.00215
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00330	0.00298	0.00293
	(A2 * B1 * !Y)	-0.00300	-0.00347	-0.00345
	(!A2 * B1 * !Y)	0.00273	0.00276	0.00274
	(!A2 * B1 * !Y)	-0.00353	-0.00355	-0.00353
	(!A2 * !B1 * Y)	0.00098	0.00099	0.00094
	(!A2 * !B1 * Y)	-0.00403	-0.00407	-0.00414
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00667	0.00600	0.00590
	(A2 * B1 * !Y)	-0.00598	-0.00693	-0.00689
	(!A2 * B1 * !Y)	0.00558	0.00566	0.00560
	(!A2 * B1 * !Y)	-0.00701	-0.00706	-0.00702
	(!A2 * !B1 * Y)	0.00187	0.00187	0.00178
	(!A2 * !B1 * Y)	-0.00836	-0.00842	-0.00853

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00147	-0.00147	-0.00147
	(A2 * B1 * !Y)	0.00174	0.00176	0.00176
	(!A2 * B1 * !Y)	-0.00136	-0.00141	-0.00140
	(!A2 * B1 * !Y)	0.00179	0.00181	0.00180
	(!A2 * !B1 * Y)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * Y)	0.00215	0.00216	0.00216
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00293	-0.00294	-0.00292
	(A2 * B1 * !Y)	0.00345	0.00347	0.00345
	(!A2 * B1 * !Y)	-0.00260	-0.00276	-0.00274
	(!A2 * B1 * !Y)	0.00356	0.00357	0.00354
	(!A2 * !B1 * Y)	-0.00092	-0.00091	-0.00091
	(!A2 * !B1 * Y)	0.00416	0.00415	0.00415
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00587	-0.00591	-0.00588
	(A2 * B1 * !Y)	0.00683	0.00693	0.00689
	(!A2 * B1 * !Y)	-0.00541	-0.00565	-0.00560
	(!A2 * B1 * !Y)	0.00705	0.00709	0.00704
	(!A2 * !B1 * Y)	-0.00172	-0.00173	-0.00173
	(!A2 * !B1 * Y)	0.00850	0.00856	0.00855

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00165	0.00151	0.00148
	(A1 * B1 * !Y)	-0.00154	-0.00176	-0.00176
	(!A1 * B1 * !Y)	0.00141	0.00142	0.00141
	(!A1 * B1 * !Y)	-0.00179	-0.00180	-0.00180
	(!A1 * !B1 * Y)	0.00141	0.00142	0.00141
	(!A1 * !B1 * Y)	-0.00179	-0.00180	-0.00180
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00342	0.00308	0.00303
	(A1 * B1 * !Y)	-0.00301	-0.00348	-0.00346
	(!A1 * B1 * !Y)	0.00288	0.00287	0.00288
	(!A1 * B1 * !Y)	-0.00354	-0.00354	-0.00354
	(!A1 * !B1 * Y)	0.00274	0.00279	0.00276
	(!A1 * !B1 * Y)	-0.00364	-0.00367	-0.00365
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00654	0.00586	0.00575
	(A1 * B1 * !Y)	-0.00615	-0.00710	-0.00708
	(!A1 * B1 * !Y)	0.00542	0.00549	0.00544
	(!A1 * B1 * !Y)	-0.00722	-0.00725	-0.00723
	(!A1 * !B1 * Y)	0.00539	0.00546	0.00541
	(!A1 * !B1 * Y)	-0.00726	-0.00731	-0.00727

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00148	-0.00148	-0.00148
	(A1 * B1 * !Y)	0.00175	0.00176	0.00176
	(!A1 * B1 * !Y)	-0.00137	-0.00142	-0.00141
	(!A1 * B1 * !Y)	0.00179	0.00181	0.00180
	(!A1 * !B1 * Y)	-0.00133	-0.00142	-0.00141
	(!A1 * !B1 * Y)	0.00185	0.00182	0.00180
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00303	-0.00304	-0.00302
	(A1 * B1 * !Y)	0.00346	0.00349	0.00346
	(!A1 * B1 * !Y)	-0.00273	-0.00287	-0.00288
	(!A1 * B1 * !Y)	0.00355	0.00361	0.00355
	(!A1 * !B1 * Y)	-0.00254	-0.00277	-0.00276
	(!A1 * !B1 * Y)	0.00376	0.00370	0.00366
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00573	-0.00576	-0.00573
	(A1 * B1 * !Y)	0.00704	0.00712	0.00708
	(!A1 * B1 * !Y)	-0.00527	-0.00546	-0.00544
	(!A1 * B1 * !Y)	0.00723	0.00725	0.00725
	(!A1 * !B1 * Y)	-0.00503	-0.00546	-0.00541
	(!A1 * !B1 * Y)	0.00752	0.00737	0.00729

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00173	0.00175	0.00173
	(A1 * A2 * !Y)	-0.00087	-0.00088	-0.00086
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00191	0.00195	0.00191
	(A1 * A2 * !Y)	-0.00177	-0.00181	-0.00178
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00370	0.00376	0.00370
	(A1 * A2 * !Y)	-0.00343	-0.00348	-0.00342

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00160	-0.00163	-0.00171
	(A1 * A2 * !Y)	0.00095	0.00096	0.00088
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00169	-0.00171	-0.00189
	(A1 * A2 * !Y)	0.00197	0.00197	0.00182
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00327	-0.00332	-0.00366
	(A1 * A2 * !Y)	0.00378	0.00380	0.00351

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00240	0.00246	0.00246	1.06843
sky130_fd_sc_hs__a21o_2	0.00268	0.00258	0.00272	2.09043
sky130_fd_sc_hs__a21o_4	0.00486	0.00463	0.00495	3.94646

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	0.09202	0.14086
sky130_fd_sc_hs__a21o_2	0.00000	0.11439	0.14705
sky130_fd_sc_hs__a21o_4	0.00000	0.23143	0.29410

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)	0.07691	0.60037	6.24092
	A2->X (RR)	0.08121	0.60452	6.25965
	B1->X (RR)	0.05775	0.55611	6.16520
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.07528	0.51587	6.26364
	A2->X (RR)	0.07897	0.51303	6.26087
	B1->X (RR)	0.05596	0.47209	6.16733
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.08600	0.46482	6.36427
	A2->X (RR)	0.09127	0.46445	6.36431
	B1->X (RR)	0.05829	0.40661	6.22781

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.12919	0.57508	4.71996
	A2->X (FF)	0.15186	0.61177	4.78967
	B1->X (FF)	0.12779	0.59110	4.69974
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.15948	0.59542	4.74714
	A2->X (FF)	0.18356	0.63249	4.83599
	B1->X (FF)	0.16154	0.62337	4.79599
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.16384	0.57008	4.82118
	A2->X (FF)	0.18801	0.60756	4.90930
	B1->X (FF)	0.16190	0.59345	4.87620

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00892	0.00942	0.02394
	A1	0.00447	0.00497	0.01978
	A2	0.01000	0.01027	0.02259
	A2	0.00446	0.00473	0.01733
	B1	0.00654	0.00715	0.02954
	B1	0.00294	0.00357	0.02626
sky130_fd_sc_hs__a21o_2	A1	0.01168	0.01235	0.02655
	A1	0.00680	0.00750	0.02224
	A2	0.01269	0.01321	0.02537
	A2	0.00679	0.00733	0.02004
	B1	0.00932	0.01007	0.03233
	B1	0.00532	0.00611	0.02902
sky130_fd_sc_hs__a21o_4	A1	0.02230	0.02356	0.05164
	A1	0.01298	0.01434	0.04311
	A2	0.02397	0.02488	0.04845
	A2	0.01298	0.01389	0.03822
	B1	0.01731	0.01896	0.06293
	B1	0.00976	0.01146	0.05661

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00321	0.00342	0.01734
	A1	0.00769	0.00785	0.02113
	A2	0.00331	0.00355	0.01617
	A2	0.00884	0.00907	0.02116
	B1	0.00304	0.00432	0.02397
	B1	0.00663	0.00788	0.02709
sky130_fd_sc_hs__a21o_2	A1	0.00542	0.00576	0.01932
	A1	0.01033	0.01063	0.02334
	A2	0.00586	0.00618	0.01889
	A2	0.01174	0.01206	0.02406
	B1	0.00513	0.00666	0.02807
	B1	0.00911	0.01056	0.03136
sky130_fd_sc_hs__a21o_4	A1	0.01094	0.01198	0.03759
	A1	0.02032	0.02088	0.04562
	A2	0.01230	0.01300	0.03699
	A2	0.02329	0.02390	0.04677
	B1	0.01040	0.01319	0.05544
	B1	0.01791	0.02071	0.06160

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00138	0.00121	0.00118
	(A2 * B1 * X)	-0.00139	-0.00161	-0.00162
	(!A2 * B1 * X)	0.00112	0.00113	0.00113
	(!A2 * B1 * X)	-0.00164	-0.00165	-0.00165
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00039
	(!A2 * !B1 * !X)	-0.00185	-0.00186	-0.00188
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00161	0.00144	0.00141
	(A2 * B1 * X)	-0.00140	-0.00163	-0.00163
	(!A2 * B1 * X)	0.00134	0.00135	0.00134
	(!A2 * B1 * X)	-0.00166	-0.00167	-0.00167
	(!A2 * !B1 * !X)	0.00050	0.00049	0.00048
	(!A2 * !B1 * !X)	-0.00192	-0.00192	-0.00195
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00294	0.00260	0.00254
	(A2 * B1 * X)	-0.00275	-0.00323	-0.00323
	(!A2 * B1 * X)	0.00245	0.00247	0.00245
	(!A2 * B1 * X)	-0.00329	-0.00332	-0.00329
	(!A2 * !B1 * !X)	0.00089	0.00089	0.00085
	(!A2 * !B1 * !X)	-0.00382	-0.00383	-0.00390

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00118	-0.00118	-0.00118
	(A2 * B1 * X)	0.00161	0.00162	0.00162
	(!A2 * B1 * X)	-0.00110	-0.00113	-0.00113
	(!A2 * B1 * X)	0.00166	0.00166	0.00165
	(!A2 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * !X)	0.00188	0.00191	0.00188
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00140	-0.00141	-0.00140
	(A2 * B1 * X)	0.00163	0.00164	0.00163
	(!A2 * B1 * X)	-0.00130	-0.00135	-0.00134
	(!A2 * B1 * X)	0.00166	0.00168	0.00168
	(!A2 * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !X)	0.00195	0.00198	0.00195
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00254	-0.00254	-0.00253
	(A2 * B1 * X)	0.00323	0.00325	0.00323
	(!A2 * B1 * X)	-0.00233	-0.00245	-0.00245
	(!A2 * B1 * X)	0.00329	0.00332	0.00331
	(!A2 * !B1 * !X)	-0.00082	-0.00084	-0.00082
	(!A2 * !B1 * !X)	0.00392	0.00397	0.00391

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00166	0.00151	0.00148
	(A1 * B1 * X)	-0.00138	-0.00159	-0.00159
	(!A1 * B1 * X)	0.00143	0.00144	0.00142
	(!A1 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * !B1 * !X)	0.00143	0.00144	0.00143
	(!A1 * !B1 * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00168	0.00152	0.00149
	(A1 * B1 * X)	-0.00141	-0.00163	-0.00163
	(!A1 * B1 * X)	0.00142	0.00143	0.00142
	(!A1 * B1 * X)	-0.00166	-0.00167	-0.00167
	(!A1 * !B1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !B1 * !X)	-0.00166	-0.00167	-0.00167
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00289	0.00255	0.00250
	(A1 * B1 * X)	-0.00276	-0.00323	-0.00323
	(!A1 * B1 * X)	0.00239	0.00240	0.00240
	(!A1 * B1 * X)	-0.00328	-0.00328	-0.00328
	(!A1 * !B1 * !X)	0.00238	0.00240	0.00239
	(!A1 * !B1 * !X)	-0.00328	-0.00329	-0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00148	-0.00148	-0.00147
	(A1 * B1 * X)	0.00158	0.00160	0.00159
	(!A1 * B1 * X)	-0.00139	-0.00143	-0.00142
	(!A1 * B1 * X)	0.00162	0.00163	0.00163
	(!A1 * !B1 * !X)	-0.00135	-0.00142	-0.00143
	(!A1 * !B1 * !X)	0.00168	0.00163	0.00163
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00148	-0.00148	-0.00148
	(A1 * B1 * X)	0.00162	0.00163	0.00163
	(!A1 * B1 * X)	-0.00138	-0.00143	-0.00142
	(!A1 * B1 * X)	0.00167	0.00169	0.00167
	(!A1 * !B1 * !X)	-0.00134	-0.00142	-0.00142
	(!A1 * !B1 * !X)	0.00171	0.00169	0.00167
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00249	-0.00250	-0.00248
	(A1 * B1 * X)	0.00322	0.00324	0.00323
	(!A1 * B1 * X)	-0.00230	-0.00239	-0.00240
	(!A1 * B1 * X)	0.00328	0.00331	0.00330
	(!A1 * !B1 * !X)	-0.00221	-0.00239	-0.00239
	(!A1 * !B1 * !X)	0.00340	0.00334	0.00330

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00141	0.00144	0.00142
	(A1 * A2 * X)	-0.00082	-0.00083	-0.00082
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00168	0.00171	0.00168
	(A1 * A2 * X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00293	0.00298	0.00294
	(A1 * A2 * X)	-0.00169	-0.00171	-0.00168

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00131	-0.00132	-0.00141
	(A1 * A2 * X)	0.00092	0.00092	0.00084
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00157	-0.00158	-0.00167
	(A1 * A2 * X)	0.00091	0.00091	0.00083
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00270	-0.00274	-0.00291
	(A1 * A2 * X)	0.00186	0.00188	0.00173

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00276	0.00271	0.00281	0.00289	0.00290	0.32602
sky130_fd_sc_hs__a221oi_2	0.00585	0.00525	0.00574	0.00521	0.00533	0.55428
sky130_fd_sc_hs__a221oi_4	0.01075	0.01066	0.01066	0.01033	0.01056	0.96422

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.02714	0.05288
sky130_fd_sc_hs__a221oi_2	0.00000	0.05429	0.10576
sky130_fd_sc_hs__a221oi_4	0.00000	0.10857	0.21153

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)	0.22065	1.20858	10.26240
	A2->Y (FR)	0.24770	1.24189	10.31750
	B1->Y (FR)	0.19033	1.19021	10.76940
	B2->Y (FR)	0.22098	1.23168	10.88400
	C1->Y (FR)	0.16594	1.16628	10.89200
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.20281	1.00601	9.65352
	A2->Y (FR)	0.25735	1.09996	10.16620
	B1->Y (FR)	0.18422	1.02543	10.48660
	B2->Y (FR)	0.22491	1.08748	10.74300
	C1->Y (FR)	0.16097	1.03087	10.82890
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.22494	0.92158	9.66457
	A2->Y (FR)	0.27000	0.97871	9.83457
	B1->Y (FR)	0.18741	0.89754	10.18340
	B2->Y (FR)	0.23561	0.96584	10.48770
	C1->Y (FR)	0.17122	0.92112	10.72140

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.03309	0.38074	3.36932
	A2->Y (RF)	0.03645	0.35148	3.05928
	B1->Y (RF)	0.03488	0.37311	3.40818
	B2->Y (RF)	0.03916	0.34698	3.10791
	C1->Y (RF)	0.02199	0.29147	2.71793
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.02926	0.32666	3.18133
	A2->Y (RF)	0.03494	0.30764	2.92729
	B1->Y (RF)	0.03054	0.30995	3.14533
	B2->Y (RF)	0.03522	0.29216	2.89681
	C1->Y (RF)	0.01954	0.24058	2.53522
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.03121	0.30114	3.21304
	A2->Y (RF)	0.03615	0.26056	2.67879
	B1->Y (RF)	0.03531	0.28820	3.20747
	B2->Y (RF)	0.04009	0.25060	2.66793
	C1->Y (RF)	0.01764	0.18855	2.27433

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00113	0.00092	0.00298
	A1	0.00934	0.00909	0.01110
	A2	0.00193	0.00178	0.00378
	A2	0.01063	0.01049	0.01249
	B1	0.00113	0.00093	0.00370
	B1	0.00812	0.00787	0.01039
	B2	0.00153	0.00137	0.00407
	B2	0.00949	0.00932	0.01182
	C1	0.00088	0.00112	0.00792
	C1	0.00552	0.00576	0.01259
sky130_fd_sc_hs__a221oi_2	A1	0.00064	0.00026	0.00490
	A1	0.01765	0.01717	0.02164
	A2	0.00334	0.00290	0.00721
	A2	0.02044	0.02003	0.02433
	B1	0.00072	0.00036	0.00617
	B1	0.01536	0.01484	0.02009
	B2	0.00183	0.00150	0.00731
	B2	0.01789	0.01752	0.02273
	C1	0.00029	0.00133	0.01463
	C1	0.00932	0.01024	0.02369

sky130_fd_sc_hs__a221oi_4	**A1**	0.00370	0.00255	0.01135
	A1	0.03483	0.03375	0.04251
	A2	0.00573	0.00492	0.01381
	A2	0.04077	0.03998	0.04874
	B1	0.00050	-0.00023	0.01097
	B1	0.02324	0.02249	0.03378
	B2	0.00298	0.00233	0.01335
	B2	0.03589	0.03523	0.04513
	C1	-0.00034	0.00123	0.02815
	C1	0.01746	0.01905	0.04611

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01103	0.01090	0.01368
	A1	0.00376	0.00360	0.00641
	A2	0.01208	0.01191	0.01413
	A2	0.00373	0.00354	0.00579
	B1	0.00788	0.00791	0.01058
	B1	0.00145	0.00152	0.00425
	B2	0.00891	0.00886	0.01102
	B2	0.00143	0.00130	0.00361
	C1	0.00433	0.00451	0.00772
	C1	-0.00030	-0.00015	0.00309

sky130_fd_sc_hs__a221oi_2	**A1**	0.02074	0.02045	0.02632
	A1	0.00579	0.00546	0.01139
	A2	0.02249	0.02210	0.02664
	A2	0.00601	0.00558	0.01019
	B1	0.01314	0.01307	0.01903
	B1	0.00202	0.00191	0.00788
	B2	0.01684	0.01673	0.02124
	B2	0.00213	0.00189	0.00671
	C1	0.00775	0.00817	0.01498
	C1	-0.00127	-0.00091	0.00593
sky130_fd_sc_hs__a221oi_4	**A1**	0.04163	0.04096	0.05223
	A1	0.01221	0.01149	0.02291
	A2	0.04557	0.04464	0.05413
	A2	0.01213	0.01116	0.02087
	B1	0.02626	0.02610	0.03803
	B1	0.00388	0.00368	0.01548
	B2	0.03434	0.03402	0.04344
	B2	0.00391	0.00337	0.01348
	C1	0.01610	0.01686	0.03094
	C1	-0.00170	-0.00097	0.01308

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)**	0.00140	0.00141	0.00140
	(A2 * B1 * B2 * C1 * !Y)	-0.00167	-0.00174	-0.00174
	(A2 * B1 * B2 * !C1 * !Y)	0.00140	0.00141	0.00140
	(A2 * B1 * B2 * !C1 * !Y)	-0.00166	-0.00175	-0.00174
	(A2 * B1 * !B2 * C1 * !Y)	0.00141	0.00141	0.00140
	(A2 * B1 * !B2 * C1 * !Y)	-0.00159	-0.00170	-0.00169
	(A2 * !B1 * C1 * !Y)	0.00141	0.00141	0.00140
	(A2 * !B1 * C1 * !Y)	-0.00159	-0.00170	-0.00169
	(!A2 * B1 * B2 * C1 * !Y)	0.00132	0.00133	0.00133
	(!A2 * B1 * B2 * C1 * !Y)	-0.00178	-0.00179	-0.00178
	(!A2 * B1 * B2 * !C1 * !Y)	0.00133	0.00134	0.00133
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00178	-0.00179	-0.00178
	(!A2 * B1 * !B2 * C1 * !Y)	0.00133	0.00134	0.00133
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00178	-0.00179	-0.00178
	(!A2 * B1 * !B2 * !C1 * Y)	0.00046	0.00046	0.00045
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00204	-0.00204	-0.00206
	(!A2 * !B1 * C1 * !Y)	0.00132	0.00134	0.00133
	(!A2 * !B1 * C1 * !Y)	-0.00178	-0.00179	-0.00178
	(!A2 * !B1 * !C1 * Y)	0.00046	0.00046	0.00045
	(!A2 * !B1 * !C1 * Y)	-0.00204	-0.00204	-0.00206

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00296	0.00300	0.00297
	(A2 * B1 * B2 * C1 * !Y)	-0.00351	-0.00371	-0.00368
	(A2 * B1 * B2 * !C1 * !Y)	0.00298	0.00300	0.00297
	(A2 * B1 * B2 * !C1 * !Y)	-0.00348	-0.00370	-0.00368
	(A2 * B1 * !B2 * C1 * !Y)	0.00300	0.00301	0.00297
	(A2 * B1 * !B2 * C1 * !Y)	-0.00334	-0.00360	-0.00358
	(A2 * !B1 * C1 * !Y)	0.00300	0.00301	0.00297
	(A2 * !B1 * C1 * !Y)	-0.00334	-0.00360	-0.00358
	(!A2 * B1 * B2 * C1 * !Y)	0.00286	0.00291	0.00288
	(!A2 * B1 * B2 * C1 * !Y)	-0.00377	-0.00381	-0.00378
	(!A2 * B1 * B2 * !C1 * !Y)	0.00288	0.00290	0.00288
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00379	-0.00381	-0.00378
	(!A2 * B1 * !B2 * C1 * !Y)	0.00288	0.00288	0.00288
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00379	-0.00379	-0.00378
	(!A2 * B1 * !B2 * !C1 * Y)	0.00104	0.00105	0.00100
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00441	-0.00443	-0.00450
	(!A2 * !B1 * C1 * !Y)	0.00287	0.00289	0.00288
	(!A2 * !B1 * C1 * !Y)	-0.00377	-0.00379	-0.00378
	(!A2 * !B1 * !C1 * Y)	0.00104	0.00105	0.00100
	(!A2 * !B1 * !C1 * Y)	-0.00440	-0.00443	-0.00450

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00574	0.00580	0.00573
	(A2 * B1 * B2 * C1 * !Y)	-0.00679	-0.00709	-0.00708
	(A2 * B1 * B2 * !C1 * !Y)	0.00578	0.00580	0.00573
	(A2 * B1 * B2 * !C1 * !Y)	-0.00663	-0.00709	-0.00707
	(A2 * B1 * !B2 * C1 * !Y)	0.00580	0.00580	0.00573
	(A2 * B1 * !B2 * C1 * !Y)	-0.00633	-0.00691	-0.00686
	(A2 * !B1 * C1 * !Y)	0.00581	0.00580	0.00573
	(A2 * !B1 * C1 * !Y)	-0.00632	-0.00691	-0.00686
	(!A2 * B1 * B2 * C1 * !Y)	0.00550	0.00553	0.00551
	(!A2 * B1 * B2 * C1 * !Y)	-0.00722	-0.00726	-0.00723
	(!A2 * B1 * B2 * !C1 * !Y)	0.00546	0.00552	0.00546
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00722	-0.00725	-0.00721
	(!A2 * B1 * !B2 * C1 * !Y)	0.00550	0.00555	0.00551
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00731	-0.00734	-0.00730
	(!A2 * B1 * !B2 * !C1 * Y)	0.00188	0.00188	0.00179
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00850	-0.00855	-0.00866
	(!A2 * !B1 * C1 * !Y)	0.00549	0.00553	0.00551
	(!A2 * !B1 * C1 * !Y)	-0.00729	-0.00732	-0.00730
	(!A2 * !B1 * !C1 * Y)	0.00188	0.00189	0.00180
	(!A2 * !B1 * !C1 * Y)	-0.00849	-0.00855	-0.00866

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)**	-0.00140	-0.00139	-0.00139
	(A2 * B1 * B2 * C1 * !Y)	0.00175	0.00174	0.00174
	(A2 * B1 * B2 * !C1 * !Y)	-0.00140	-0.00140	-0.00139
	(A2 * B1 * B2 * !C1 * !Y)	0.00175	0.00175	0.00174
	(A2 * B1 * !B2 * C1 * !Y)	-0.00139	-0.00140	-0.00140
	(A2 * B1 * !B2 * C1 * !Y)	0.00168	0.00170	0.00169
	(A2 * !B1 * C1 * !Y)	-0.00139	-0.00140	-0.00140
	(A2 * !B1 * C1 * !Y)	0.00168	0.00170	0.00169
	(!A2 * B1 * B2 * C1 * !Y)	-0.00129	-0.00133	-0.00133
	(!A2 * B1 * B2 * C1 * !Y)	0.00178	0.00179	0.00179
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00130	-0.00134	-0.00133
	(!A2 * B1 * B2 * !C1 * !Y)	0.00179	0.00180	0.00179
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00130	-0.00134	-0.00133
	(!A2 * B1 * !B2 * C1 * !Y)	0.00179	0.00180	0.00179
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00044	-0.00045	-0.00044
	(!A2 * B1 * !B2 * !C1 * Y)	0.00206	0.00210	0.00207
	(!A2 * !B1 * C1 * !Y)	-0.00130	-0.00134	-0.00133
	(!A2 * !B1 * C1 * !Y)	0.00179	0.00180	0.00179
	(!A2 * !B1 * !C1 * Y)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * !C1 * Y)	0.00206	0.00210	0.00207

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00295	-0.00297	-0.00296
	(A2 * B1 * B2 * C1 * !Y)	0.00365	0.00371	0.00368
	(A2 * B1 * B2 * !C1 * !Y)	-0.00297	-0.00297	-0.00296
	(A2 * B1 * B2 * !C1 * !Y)	0.00369	0.00370	0.00368
	(A2 * B1 * !B2 * C1 * !Y)	-0.00296	-0.00298	-0.00296
	(A2 * B1 * !B2 * C1 * !Y)	0.00356	0.00360	0.00358
	(A2 * !B1 * C1 * !Y)	-0.00296	-0.00298	-0.00296
	(A2 * !B1 * C1 * !Y)	0.00357	0.00360	0.00358
	(!A2 * B1 * B2 * C1 * !Y)	-0.00276	-0.00290	-0.00288
	(!A2 * B1 * B2 * C1 * !Y)	0.00378	0.00386	0.00379
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00276	-0.00290	-0.00288
	(!A2 * B1 * B2 * !C1 * !Y)	0.00380	0.00382	0.00379
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00276	-0.00288	-0.00288
	(!A2 * B1 * !B2 * C1 * !Y)	0.00380	0.00381	0.00379
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00098	-0.00099	-0.00097
	(!A2 * B1 * !B2 * !C1 * Y)	0.00452	0.00457	0.00450
	(!A2 * !B1 * C1 * !Y)	-0.00276	-0.00289	-0.00288
	(!A2 * !B1 * C1 * !Y)	0.00380	0.00383	0.00379
	(!A2 * !B1 * !C1 * Y)	-0.00098	-0.00099	-0.00097
	(!A2 * !B1 * !C1 * Y)	0.00452	0.00457	0.00450

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00570	-0.00572	-0.00572
	(A2 * B1 * B2 * C1 * !Y)	0.00704	0.00709	0.00708
	(A2 * B1 * B2 * !C1 * !Y)	-0.00570	-0.00573	-0.00572
	(A2 * B1 * B2 * !C1 * !Y)	0.00703	0.00709	0.00707
	(A2 * B1 * !B2 * C1 * !Y)	-0.00570	-0.00574	-0.00571
	(A2 * B1 * !B2 * C1 * !Y)	0.00683	0.00691	0.00686
	(A2 * !B1 * C1 * !Y)	-0.00571	-0.00574	-0.00571
	(A2 * !B1 * C1 * !Y)	0.00684	0.00691	0.00686
	(!A2 * B1 * B2 * C1 * !Y)	-0.00527	-0.00553	-0.00551
	(!A2 * B1 * B2 * C1 * !Y)	0.00722	0.00730	0.00725
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00529	-0.00552	-0.00546
	(!A2 * B1 * B2 * !C1 * !Y)	0.00725	0.00730	0.00723
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00529	-0.00555	-0.00551
	(!A2 * B1 * !B2 * C1 * !Y)	0.00734	0.00739	0.00732
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00174	-0.00178	-0.00174
	(!A2 * B1 * !B2 * !C1 * Y)	0.00863	0.00880	0.00867
	(!A2 * !B1 * C1 * !Y)	-0.00528	-0.00553	-0.00551
	(!A2 * !B1 * C1 * !Y)	0.00733	0.00738	0.00732
	(!A2 * !B1 * !C1 * Y)	-0.00174	-0.00178	-0.00175
	(!A2 * !B1 * !C1 * Y)	0.00863	0.00880	0.00867

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)**	0.00148	0.00150	0.00149
	(A1 * B1 * B2 * C1 * !Y)	-0.00170	-0.00177	-0.00177
	(A1 * B1 * B2 * !C1 * !Y)	0.00149	0.00150	0.00149
	(A1 * B1 * B2 * !C1 * !Y)	-0.00168	-0.00176	-0.00177
	(A1 * B1 * !B2 * C1 * !Y)	0.00150	0.00150	0.00149
	(A1 * B1 * !B2 * C1 * !Y)	-0.00161	-0.00173	-0.00172
	(A1 * !B1 * C1 * !Y)	0.00150	0.00150	0.00149
	(A1 * !B1 * C1 * !Y)	-0.00161	-0.00173	-0.00172
	(!A1 * B1 * B2 * !Y)	0.00142	0.00143	0.00142
	(!A1 * B1 * B2 * !Y)	-0.00181	-0.00182	-0.00182
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00142	0.00143	0.00142
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00181	-0.00183	-0.00182
	(!A1 * B1 * !B2 * !C1 * Y)	0.00142	0.00143	0.00143
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00181	-0.00182	-0.00181
	(!A1 * !B1 * !C1 * Y)	0.00142	0.00143	0.00143
	(!A1 * !B1 * !C1 * Y)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00283	0.00286	0.00283
	(A1 * B1 * B2 * C1 * !Y)	-0.00326	-0.00344	-0.00342
	(A1 * B1 * B2 * !C1 * !Y)	0.00285	0.00286	0.00283
	(A1 * B1 * B2 * !C1 * !Y)	-0.00323	-0.00344	-0.00342
	(A1 * B1 * !B2 * C1 * !Y)	0.00287	0.00287	0.00283
	(A1 * B1 * !B2 * C1 * !Y)	-0.00309	-0.00335	-0.00332
	(A1 * !B1 * C1 * !Y)	0.00287	0.00287	0.00283
	(A1 * !B1 * C1 * !Y)	-0.00309	-0.00335	-0.00332
	(!A1 * B1 * B2 * !Y)	0.00272	0.00272	0.00274
	(!A1 * B1 * B2 * !Y)	-0.00350	-0.00350	-0.00351
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00273	0.00274	0.00274
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00351	-0.00352	-0.00351
	(!A1 * B1 * !B2 * !C1 * Y)	0.00260	0.00262	0.00261
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00363	-0.00364	-0.00364
	(!A1 * !B1 * !C1 * Y)	0.00260	0.00262	0.00261
	(!A1 * !B1 * !C1 * Y)	-0.00363	-0.00364	-0.00364

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00582	0.00586	0.00579
	(A1 * B1 * B2 * C1 * !Y)	-0.00683	-0.00715	-0.00711
	(A1 * B1 * B2 * !C1 * !Y)	0.00587	0.00587	0.00579
	(A1 * B1 * B2 * !C1 * !Y)	-0.00667	-0.00712	-0.00709
	(A1 * B1 * !B2 * C1 * !Y)	0.00583	0.00587	0.00579
	(A1 * B1 * !B2 * C1 * !Y)	-0.00632	-0.00692	-0.00689
	(A1 * !B1 * C1 * !Y)	0.00584	0.00587	0.00579
	(A1 * !B1 * C1 * !Y)	-0.00633	-0.00692	-0.00689
	(!A1 * B1 * B2 * !Y)	0.00556	0.00560	0.00558
	(!A1 * B1 * B2 * !Y)	-0.00725	-0.00728	-0.00726
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00554	0.00561	0.00556
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00733	-0.00739	-0.00735
	(!A1 * B1 * !B2 * !C1 * Y)	0.00520	0.00524	0.00522
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00768	-0.00771	-0.00769
	(!A1 * !B1 * !C1 * Y)	0.00518	0.00524	0.00520
	(!A1 * !B1 * !C1 * Y)	-0.00768	-0.00773	-0.00769

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)**	-0.00148	-0.00148	-0.00149
	(A1 * B1 * B2 * C1 * !Y)	0.00178	0.00177	0.00177
	(A1 * B1 * B2 * !C1 * !Y)	-0.00149	-0.00148	-0.00148
	(A1 * B1 * B2 * !C1 * !Y)	0.00177	0.00176	0.00177
	(A1 * B1 * !B2 * C1 * !Y)	-0.00149	-0.00149	-0.00149
	(A1 * B1 * !B2 * C1 * !Y)	0.00172	0.00173	0.00172
	(A1 * !B1 * C1 * !Y)	-0.00149	-0.00149	-0.00149
	(A1 * !B1 * C1 * !Y)	0.00172	0.00173	0.00172
	(!A1 * B1 * B2 * !Y)	-0.00138	-0.00142	-0.00142
	(!A1 * B1 * B2 * !Y)	0.00181	0.00183	0.00182
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00138	-0.00142	-0.00142
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00134	-0.00143	-0.00143
	(!A1 * B1 * !B2 * !C1 * Y)	0.00187	0.00184	0.00182
	(!A1 * !B1 * !C1 * Y)	-0.00134	-0.00143	-0.00143
	(!A1 * !B1 * !C1 * Y)	0.00187	0.00184	0.00182

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00281	-0.00283	-0.00282
	(A1 * B1 * B2 * C1 * !Y)	0.00341	0.00344	0.00342
	(A1 * B1 * B2 * !C1 * !Y)	-0.00281	-0.00283	-0.00282
	(A1 * B1 * B2 * !C1 * !Y)	0.00341	0.00344	0.00342
	(A1 * B1 * !B2 * C1 * !Y)	-0.00282	-0.00284	-0.00282
	(A1 * B1 * !B2 * C1 * !Y)	0.00331	0.00335	0.00332
	(A1 * !B1 * C1 * !Y)	-0.00282	-0.00284	-0.00282
	(A1 * !B1 * C1 * !Y)	0.00331	0.00335	0.00332
	(!A1 * B1 * B2 * !Y)	-0.00263	-0.00272	-0.00274
	(!A1 * B1 * B2 * !Y)	0.00351	0.00352	0.00352
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00263	-0.00272	-0.00274
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00351	0.00352	0.00352
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00243	-0.00261	-0.00261
	(!A1 * B1 * !B2 * !C1 * Y)	0.00372	0.00368	0.00365
	(!A1 * !B1 * !C1 * Y)	-0.00243	-0.00261	-0.00261
	(!A1 * !B1 * !C1 * Y)	0.00372	0.00368	0.00365

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00575	-0.00579	-0.00578
	(A1 * B1 * B2 * C1 * !Y)	0.00706	0.00715	0.00711
	(A1 * B1 * B2 * !C1 * !Y)	-0.00577	-0.00579	-0.00578
	(A1 * B1 * B2 * !C1 * !Y)	0.00706	0.00712	0.00709
	(A1 * B1 * !B2 * C1 * !Y)	-0.00576	-0.00579	-0.00577
	(A1 * B1 * !B2 * C1 * !Y)	0.00687	0.00692	0.00689
	(A1 * !B1 * C1 * !Y)	-0.00576	-0.00579	-0.00577
	(A1 * !B1 * C1 * !Y)	0.00687	0.00692	0.00689
	(!A1 * B1 * B2 * !Y)	-0.00537	-0.00556	-0.00558
	(!A1 * B1 * B2 * !Y)	0.00725	0.00730	0.00728
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00537	-0.00560	-0.00556
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00734	0.00747	0.00737
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00486	-0.00523	-0.00522
	(!A1 * B1 * !B2 * !C1 * Y)	0.00789	0.00779	0.00772
	(!A1 * !B1 * !C1 * Y)	-0.00486	-0.00523	-0.00520
	(!A1 * !B1 * !C1 * Y)	0.00789	0.00779	0.00772

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)**	0.00149	0.00150	0.00145
	(A1 * A2 * B2 * C1 * !Y)	-0.00130	-0.00131	-0.00130
	(A1 * A2 * B2 * !C1 * !Y)	0.00143	0.00146	0.00143
	(A1 * A2 * B2 * !C1 * !Y)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * !B2 * C1 * !Y)	0.00138	0.00140	0.00138
	(A1 * A2 * !B2 * C1 * !Y)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * !B2 * !C1 * !Y)	0.00137	0.00140	0.00137
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00098	-0.00099	-0.00099
	(A1 * !A2 * B2 * C1 * !Y)	0.00161	0.00145	0.00143
	(A1 * !A2 * B2 * C1 * !Y)	-0.00154	-0.00177	-0.00176
	(A1 * !A2 * !B2 * C1 * !Y)	0.00136	0.00138	0.00136
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00179	-0.00180	-0.00180
	(A1 * !A2 * !B2 * !C1 * Y)	0.00045	0.00046	0.00044
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00208	-0.00210	-0.00211
	(!A1 * B2 * C1 * !Y)	0.00161	0.00145	0.00143
	(!A1 * B2 * C1 * !Y)	-0.00155	-0.00177	-0.00176
	(!A1 * !B2 * C1 * !Y)	0.00135	0.00137	0.00136
	(!A1 * !B2 * C1 * !Y)	-0.00179	-0.00180	-0.00180
	(!A1 * !B2 * !C1 * Y)	0.00045	0.00046	0.00044
	(!A1 * !B2 * !C1 * Y)	-0.00208	-0.00210	-0.00211

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00307	0.00309	0.00295
	(A1 * A2 * B2 * C1 * !Y)	-0.00262	-0.00262	-0.00261
	(A1 * A2 * B2 * !C1 * !Y)	0.00291	0.00295	0.00290
	(A1 * A2 * B2 * !C1 * !Y)	-0.00206	-0.00208	-0.00206
	(A1 * A2 * !B2 * C1 * !Y)	0.00282	0.00287	0.00280
	(A1 * A2 * !B2 * C1 * !Y)	-0.00243	-0.00248	-0.00244
	(A1 * A2 * !B2 * !C1 * !Y)	0.00279	0.00281	0.00279
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00204	-0.00205	-0.00205
	(A1 * !A2 * B2 * C1 * !Y)	0.00334	0.00292	0.00289
	(A1 * !A2 * B2 * C1 * !Y)	-0.00309	-0.00366	-0.00365
	(A1 * !A2 * !B2 * C1 * !Y)	0.00276	0.00279	0.00278
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00371	-0.00374	-0.00372
	(A1 * !A2 * !B2 * !C1 * Y)	0.00094	0.00094	0.00090
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00435	-0.00437	-0.00442
	(!A1 * B2 * C1 * !Y)	0.00334	0.00291	0.00289
	(!A1 * B2 * C1 * !Y)	-0.00310	-0.00366	-0.00365
	(!A1 * !B2 * C1 * !Y)	0.00276	0.00279	0.00278
	(!A1 * !B2 * C1 * !Y)	-0.00371	-0.00374	-0.00372
	(!A1 * !B2 * !C1 * Y)	0.00094	0.00094	0.00090
	(!A1 * !B2 * !C1 * Y)	-0.00435	-0.00437	-0.00442

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00613	0.00607	0.00581
	(A1 * A2 * B2 * C1 * !Y)	-0.00500	-0.00501	-0.00497
	(A1 * A2 * B2 * !C1 * !Y)	0.00578	0.00585	0.00572
	(A1 * A2 * B2 * !C1 * !Y)	-0.00390	-0.00393	-0.00389
	(A1 * A2 * !B2 * C1 * !Y)	0.00552	0.00558	0.00550
	(A1 * A2 * !B2 * C1 * !Y)	-0.00465	-0.00471	-0.00467
	(A1 * A2 * !B2 * !C1 * !Y)	0.00546	0.00556	0.00544
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00385	-0.00391	-0.00388
	(A1 * !A2 * B2 * C1 * !Y)	0.00673	0.00576	0.00569
	(A1 * !A2 * B2 * C1 * !Y)	-0.00575	-0.00695	-0.00700
	(A1 * !A2 * !B2 * C1 * !Y)	0.00546	0.00548	0.00546
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00725	-0.00726	-0.00724
	(A1 * !A2 * !B2 * !C1 * Y)	0.00187	0.00187	0.00177
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00838	-0.00843	-0.00854
	(!A1 * B2 * C1 * !Y)	0.00671	0.00574	0.00569
	(!A1 * B2 * C1 * !Y)	-0.00579	-0.00702	-0.00700
	(!A1 * !B2 * C1 * !Y)	0.00546	0.00549	0.00547
	(!A1 * !B2 * C1 * !Y)	-0.00725	-0.00726	-0.00724
	(!A1 * !B2 * !C1 * Y)	0.00187	0.00188	0.00178
	(!A1 * !B2 * !C1 * Y)	-0.00838	-0.00843	-0.00854

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)**	-0.00144	-0.00145	-0.00144
	(A1 * A2 * B2 * C1 * !Y)	0.00130	0.00131	0.00130
	(A1 * A2 * B2 * !C1 * !Y)	-0.00135	-0.00136	-0.00138
	(A1 * A2 * B2 * !C1 * !Y)	0.00107	0.00107	0.00105
	(A1 * A2 * !B2 * C1 * !Y)	-0.00133	-0.00137	-0.00138
	(A1 * A2 * !B2 * C1 * !Y)	0.00121	0.00122	0.00121
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00133	-0.00137	-0.00137
	(A1 * A2 * !B2 * !C1 * !Y)	0.00099	0.00099	0.00099
	(A1 * !A2 * B2 * C1 * !Y)	-0.00143	-0.00143	-0.00143
	(A1 * !A2 * B2 * C1 * !Y)	0.00177	0.00177	0.00176
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00133	-0.00137	-0.00136
	(A1 * !A2 * !B2 * C1 * !Y)	0.00180	0.00180	0.00180
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00043	-0.00044	-0.00043
	(A1 * !A2 * !B2 * !C1 * Y)	0.00211	0.00214	0.00212
	(!A1 * B2 * C1 * !Y)	-0.00143	-0.00143	-0.00143
	(!A1 * B2 * C1 * !Y)	0.00176	0.00177	0.00176
	(!A1 * !B2 * C1 * !Y)	-0.00133	-0.00137	-0.00136
	(!A1 * !B2 * C1 * !Y)	0.00180	0.00180	0.00180
	(!A1 * !B2 * !C1 * Y)	-0.00043	-0.00044	-0.00043
	(!A1 * !B2 * !C1 * Y)	0.00211	0.00214	0.00212

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00291	-0.00291	-0.00291
	(A1 * A2 * B2 * C1 * !Y)	0.00262	0.00262	0.00261
	(A1 * A2 * B2 * !C1 * !Y)	-0.00279	-0.00281	-0.00280
	(A1 * A2 * B2 * !C1 * !Y)	0.00214	0.00216	0.00216
	(A1 * A2 * !B2 * C1 * !Y)	-0.00269	-0.00281	-0.00280
	(A1 * A2 * !B2 * C1 * !Y)	0.00243	0.00248	0.00244
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00268	-0.00281	-0.00279
	(A1 * A2 * !B2 * !C1 * !Y)	0.00206	0.00206	0.00205
	(A1 * !A2 * B2 * C1 * !Y)	-0.00289	-0.00289	-0.00288
	(A1 * !A2 * B2 * C1 * !Y)	0.00365	0.00366	0.00365
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00266	-0.00278	-0.00278
	(A1 * !A2 * !B2 * C1 * !Y)	0.00371	0.00374	0.00373
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00088	-0.00088	-0.00087
	(A1 * !A2 * !B2 * !C1 * Y)	0.00443	0.00443	0.00442
	(!A1 * B2 * C1 * !Y)	-0.00288	-0.00289	-0.00288
	(!A1 * B2 * C1 * !Y)	0.00363	0.00366	0.00365
	(!A1 * !B2 * C1 * !Y)	-0.00266	-0.00278	-0.00278
	(!A1 * !B2 * C1 * !Y)	0.00371	0.00374	0.00373
	(!A1 * !B2 * !C1 * Y)	-0.00088	-0.00088	-0.00087
	(!A1 * !B2 * !C1 * Y)	0.00443	0.00443	0.00442

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00573	-0.00573	-0.00571
	(A1 * A2 * B2 * C1 * !Y)	0.00500	0.00501	0.00497
	(A1 * A2 * B2 * !C1 * !Y)	-0.00556	-0.00558	-0.00555
	(A1 * A2 * B2 * !C1 * !Y)	0.00411	0.00412	0.00407
	(A1 * A2 * !B2 * C1 * !Y)	-0.00522	-0.00554	-0.00550
	(A1 * A2 * !B2 * C1 * !Y)	0.00465	0.00471	0.00467
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00524	-0.00553	-0.00544
	(A1 * A2 * !B2 * !C1 * !Y)	0.00390	0.00391	0.00388
	(A1 * !A2 * B2 * C1 * !Y)	-0.00566	-0.00565	-0.00565
	(A1 * !A2 * B2 * C1 * !Y)	0.00695	0.00695	0.00700
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00522	-0.00545	-0.00546
	(A1 * !A2 * !B2 * C1 * !Y)	0.00727	0.00728	0.00725
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * !B2 * !C1 * Y)	0.00852	0.00857	0.00855
	(!A1 * B2 * C1 * !Y)	-0.00566	-0.00569	-0.00565
	(!A1 * B2 * C1 * !Y)	0.00696	0.00703	0.00700
	(!A1 * !B2 * C1 * !Y)	-0.00521	-0.00545	-0.00547
	(!A1 * !B2 * C1 * !Y)	0.00726	0.00728	0.00725
	(!A1 * !B2 * !C1 * Y)	-0.00172	-0.00174	-0.00173
	(!A1 * !B2 * !C1 * Y)	0.00852	0.00857	0.00855

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)**	0.00155	0.00155	0.00150
	(A1 * A2 * B1 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(A1 * A2 * B1 * !C1 * !Y)	0.00149	0.00151	0.00148
	(A1 * A2 * B1 * !C1 * !Y)	-0.00104	-0.00105	-0.00103
	(A1 * A2 * !B1 * C1 * !Y)	0.00142	0.00143	0.00141
	(A1 * A2 * !B1 * C1 * !Y)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * !B1 * !C1 * !Y)	0.00142	0.00142	0.00142
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00102	-0.00103	-0.00103
	(A1 * !A2 * B1 * C1 * !Y)	0.00169	0.00147	0.00147
	(A1 * !A2 * B1 * C1 * !Y)	-0.00158	-0.00181	-0.00181
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00139	0.00142	0.00140
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00185	-0.00186	-0.00185
	(A1 * !A2 * !B1 * !C1 * Y)	0.00130	0.00132	0.00130
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00195	-0.00196	-0.00195
	(!A1 * B1 * C1 * !Y)	0.00169	0.00147	0.00147
	(!A1 * B1 * C1 * !Y)	-0.00158	-0.00181	-0.00181
	(!A1 * !B1 * !C1 * Y)	0.00130	0.00132	0.00131
	(!A1 * !B1 * !C1 * Y)	-0.00195	-0.00196	-0.00195

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00292	0.00298	0.00286
	(A1 * A2 * B1 * C1 * !Y)	-0.00246	-0.00247	-0.00245
	(A1 * A2 * B1 * !C1 * !Y)	0.00282	0.00287	0.00282
	(A1 * A2 * B1 * !C1 * !Y)	-0.00188	-0.00191	-0.00189
	(A1 * A2 * !B1 * C1 * !Y)	0.00272	0.00277	0.00272
	(A1 * A2 * !B1 * C1 * !Y)	-0.00229	-0.00232	-0.00230
	(A1 * A2 * !B1 * !C1 * !Y)	0.00270	0.00274	0.00271
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00187	-0.00189	-0.00188
	(A1 * !A2 * B1 * C1 * !Y)	0.00320	0.00284	0.00281
	(A1 * !A2 * B1 * C1 * !Y)	-0.00294	-0.00343	-0.00342
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00268	0.00272	0.00270
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00348	-0.00351	-0.00349
	(A1 * !A2 * !B1 * !C1 * Y)	0.00259	0.00263	0.00260
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00358	-0.00360	-0.00358
	(!A1 * B1 * C1 * !Y)	0.00320	0.00283	0.00281
	(!A1 * B1 * C1 * !Y)	-0.00295	-0.00343	-0.00342
	(!A1 * !B1 * !C1 * Y)	0.00259	0.00261	0.00260
	(!A1 * !B1 * !C1 * Y)	-0.00358	-0.00359	-0.00358

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00618	0.00613	0.00582
	(A1 * A2 * B1 * C1 * !Y)	-0.00500	-0.00499	-0.00498
	(A1 * A2 * B1 * !C1 * !Y)	0.00575	0.00586	0.00573
	(A1 * A2 * B1 * !C1 * !Y)	-0.00386	-0.00393	-0.00389
	(A1 * A2 * !B1 * C1 * !Y)	0.00548	0.00559	0.00545
	(A1 * A2 * !B1 * C1 * !Y)	-0.00466	-0.00467	-0.00467
	(A1 * A2 * !B1 * !C1 * !Y)	0.00549	0.00560	0.00547
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00385	-0.00388	-0.00388
	(A1 * !A2 * B1 * C1 * !Y)	0.00679	0.00580	0.00571
	(A1 * !A2 * B1 * C1 * !Y)	-0.00579	-0.00702	-0.00699
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00542	0.00548	0.00544
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00722	-0.00726	-0.00723
	(A1 * !A2 * !B1 * !C1 * Y)	0.00539	0.00543	0.00542
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00720	-0.00724	-0.00723
	(!A1 * B1 * C1 * !Y)	0.00678	0.00579	0.00571
	(!A1 * B1 * C1 * !Y)	-0.00580	-0.00703	-0.00700
	(!A1 * !B1 * !C1 * Y)	0.00539	0.00544	0.00543
	(!A1 * !B1 * !C1 * Y)	-0.00721	-0.00724	-0.00723

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)**	-0.00148	-0.00148	-0.00148
	(A1 * A2 * B1 * C1 * !Y)	0.00134	0.00134	0.00134
	(A1 * A2 * B1 * !C1 * !Y)	-0.00141	-0.00142	-0.00143
	(A1 * A2 * B1 * !C1 * !Y)	0.00110	0.00110	0.00109
	(A1 * A2 * !B1 * C1 * !Y)	-0.00138	-0.00142	-0.00141
	(A1 * A2 * !B1 * C1 * !Y)	0.00125	0.00126	0.00125
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00138	-0.00141	-0.00142
	(A1 * A2 * !B1 * !C1 * !Y)	0.00103	0.00103	0.00103
	(A1 * !A2 * B1 * C1 * !Y)	-0.00148	-0.00147	-0.00147
	(A1 * !A2 * B1 * C1 * !Y)	0.00182	0.00182	0.00181
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00137	-0.00141	-0.00140
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00185	0.00186	0.00186
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00122	-0.00132	-0.00130
	(A1 * !A2 * !B1 * !C1 * Y)	0.00201	0.00197	0.00196
	(!A1 * B1 * C1 * !Y)	-0.00148	-0.00147	-0.00147
	(!A1 * B1 * C1 * !Y)	0.00182	0.00182	0.00181
	(!A1 * !B1 * !C1 * Y)	-0.00122	-0.00132	-0.00131
	(!A1 * !B1 * !C1 * Y)	0.00201	0.00197	0.00196

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00283	-0.00283	-0.00282
	(A1 * A2 * B1 * C1 * !Y)	0.00246	0.00247	0.00245
	(A1 * A2 * B1 * !C1 * !Y)	-0.00268	-0.00271	-0.00271
	(A1 * A2 * B1 * !C1 * !Y)	0.00198	0.00201	0.00199
	(A1 * A2 * !B1 * C1 * !Y)	-0.00261	-0.00272	-0.00272
	(A1 * A2 * !B1 * C1 * !Y)	0.00229	0.00232	0.00230
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00260	-0.00269	-0.00271
	(A1 * A2 * !B1 * !C1 * !Y)	0.00188	0.00189	0.00188
	(A1 * !A2 * B1 * C1 * !Y)	-0.00281	-0.00281	-0.00280
	(A1 * !A2 * B1 * C1 * !Y)	0.00342	0.00343	0.00342
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00259	-0.00271	-0.00270
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00349	0.00354	0.00350
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00240	-0.00261	-0.00260
	(A1 * !A2 * !B1 * !C1 * Y)	0.00370	0.00362	0.00359
	(!A1 * B1 * C1 * !Y)	-0.00280	-0.00281	-0.00280
	(!A1 * B1 * C1 * !Y)	0.00341	0.00344	0.00342
	(!A1 * !B1 * !C1 * Y)	-0.00240	-0.00261	-0.00260
	(!A1 * !B1 * !C1 * Y)	0.00370	0.00362	0.00359

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00574	-0.00573	-0.00573
	(A1 * A2 * B1 * C1 * !Y)	0.00500	0.00499	0.00498
	(A1 * A2 * B1 * !C1 * !Y)	-0.00557	-0.00561	-0.00556
	(A1 * A2 * B1 * !C1 * !Y)	0.00412	0.00416	0.00408
	(A1 * A2 * !B1 * C1 * !Y)	-0.00527	-0.00545	-0.00545
	(A1 * A2 * !B1 * C1 * !Y)	0.00466	0.00467	0.00467
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00526	-0.00544	-0.00547
	(A1 * A2 * !B1 * !C1 * !Y)	0.00388	0.00388	0.00388
	(A1 * !A2 * B1 * C1 * !Y)	-0.00567	-0.00571	-0.00567
	(A1 * !A2 * B1 * C1 * !Y)	0.00695	0.00703	0.00699
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00524	-0.00545	-0.00544
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00722	0.00728	0.00725
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00503	-0.00543	-0.00542
	(A1 * !A2 * !B1 * !C1 * Y)	0.00748	0.00730	0.00725
	(!A1 * B1 * C1 * !Y)	-0.00567	-0.00571	-0.00567
	(!A1 * B1 * C1 * !Y)	0.00695	0.00703	0.00700
	(!A1 * !B1 * !C1 * Y)	-0.00503	-0.00544	-0.00543
	(!A1 * !B1 * !C1 * Y)	0.00748	0.00730	0.00725

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)	0.00171	0.00174	0.00171
	(A1 * B1 * B2 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * B1 * !B2 * !Y)	0.00171	0.00174	0.00171
	(A1 * A2 * B1 * !B2 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * !B1 * !Y)	0.00171	0.00174	0.00171
	(A1 * A2 * !B1 * !Y)	-0.00094	-0.00095	-0.00094
	(!A1 * B1 * B2 * !Y)	0.00171	0.00174	0.00171
	(!A1 * B1 * B2 * !Y)	-0.00094	-0.00096	-0.00094
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00321	0.00326	0.00321
	(A1 * B1 * B2 * !Y)	-0.00172	-0.00175	-0.00172
	(A1 * A2 * B1 * !B2 * !Y)	0.00321	0.00326	0.00321
	(A1 * A2 * B1 * !B2 * !Y)	-0.00172	-0.00175	-0.00172
	(A1 * A2 * !B1 * !Y)	0.00322	0.00326	0.00321
	(A1 * A2 * !B1 * !Y)	-0.00173	-0.00175	-0.00172
	(!A1 * B1 * B2 * !Y)	0.00321	0.00326	0.00321
	(!A1 * B1 * B2 * !Y)	-0.00173	-0.00175	-0.00172
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00631	0.00645	0.00635
	(A1 * B1 * B2 * !Y)	-0.00343	-0.00351	-0.00345
	(A1 * A2 * B1 * !B2 * !Y)	0.00633	0.00646	0.00635
	(A1 * A2 * B1 * !B2 * !Y)	-0.00344	-0.00351	-0.00344
	(A1 * A2 * !B1 * !Y)	0.00633	0.00646	0.00635
	(A1 * A2 * !B1 * !Y)	-0.00344	-0.00351	-0.00344
	(!A1 * B1 * B2 * !Y)	0.00633	0.00646	0.00635
	(!A1 * B1 * B2 * !Y)	-0.00346	-0.00353	-0.00346

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)	-0.00159	-0.00161	-0.00170
	(A1 * B1 * B2 * !Y)	0.00105	0.00105	0.00096
	(A1 * A2 * B1 * !B2 * !Y)	-0.00141	-0.00143	-0.00166
	(A1 * A2 * B1 * !B2 * !Y)	0.00115	0.00116	0.00099
	(A1 * A2 * !B1 * !Y)	-0.00141	-0.00143	-0.00166
	(A1 * A2 * !B1 * !Y)	0.00116	0.00116	0.00099
	(!A1 * B1 * B2 * !Y)	-0.00159	-0.00161	-0.00170
	(!A1 * B1 * B2 * !Y)	0.00105	0.00105	0.00097
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00297	-0.00301	-0.00318
	(A1 * B1 * B2 * !Y)	0.00191	0.00193	0.00177
	(A1 * A2 * B1 * !B2 * !Y)	-0.00267	-0.00272	-0.00312
	(A1 * A2 * B1 * !B2 * !Y)	0.00209	0.00211	0.00180
	(A1 * A2 * !B1 * !Y)	-0.00268	-0.00272	-0.00312
	(A1 * A2 * !B1 * !Y)	0.00210	0.00211	0.00180
	(!A1 * B1 * B2 * !Y)	-0.00297	-0.00301	-0.00318
	(!A1 * B1 * B2 * !Y)	0.00193	0.00194	0.00177
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00592	-0.00598	-0.00630
	(A1 * B1 * B2 * !Y)	0.00376	0.00378	0.00353
	(A1 * A2 * B1 * !B2 * !Y)	-0.00532	-0.00539	-0.00616
	(A1 * A2 * B1 * !B2 * !Y)	0.00419	0.00421	0.00364
	(A1 * A2 * !B1 * !Y)	-0.00532	-0.00539	-0.00616
	(A1 * A2 * !B1 * !Y)	0.00419	0.00421	0.00364
	(!A1 * B1 * B2 * !Y)	-0.00593	-0.00598	-0.00630
	(!A1 * B1 * B2 * !Y)	0.00380	0.00380	0.00354

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00259	0.00268	0.00257	0.00257	0.00254	1.08553
sky130_fd_sc_hs__a221o_2	0.00271	0.00278	0.00278	0.00280	0.00269	2.06086
sky130_fd_sc_hs__a221o_4	0.00478	0.00477	0.00493	0.00503	0.00488	3.20670

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221o_1	0.00000	0.08079	0.14086
sky130_fd_sc_hs__a221o_2	0.00000	0.09875	0.14705
sky130_fd_sc_hs__a221o_4	0.00000	0.20022	0.29410

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)	0.09078	0.65240	6.41753
	A2->X (RR)	0.09496	0.64743	6.40505
	B1->X (RR)	0.08729	0.63145	6.29526
	B2->X (RR)	0.09137	0.62926	6.31099
	C1->X (RR)	0.06607	0.58483	6.20593
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.09372	0.57635	6.43414
	A2->X (RR)	0.09805	0.56768	6.41222
	B1->X (RR)	0.09085	0.56072	6.33113
	B2->X (RR)	0.09476	0.55304	6.33147
	C1->X (RR)	0.06736	0.51172	6.22337
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.11273	0.54974	6.22775
	A2->X (RR)	0.11831	0.52208	6.11964
	B1->X (RR)	0.10619	0.52084	6.04740
	B2->X (RR)	0.11292	0.50185	5.99485
	C1->X (RR)	0.06373	0.42292	5.81364

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.26623	0.74428	4.86739
	A2->X (FF)	0.29078	0.77642	4.93647
	B1->X (FF)	0.24435	0.73432	5.02087
	B2->X (FF)	0.26440	0.76935	5.09988
	C1->X (FF)	0.20901	0.72126	5.00936
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.33427	0.81307	5.15717
	A2->X (FF)	0.36019	0.84868	5.23313
	B1->X (FF)	0.32061	0.81669	5.36409
	B2->X (FF)	0.33584	0.84597	5.44777
	C1->X (FF)	0.28089	0.79949	5.34818
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.34105	0.75745	4.55605
	A2->X (FF)	0.37333	0.80406	4.67664
	B1->X (FF)	0.32144	0.76236	4.82456
	B2->X (FF)	0.34852	0.80480	4.91577
	C1->X (FF)	0.27993	0.74417	4.81749

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01313	0.01322	0.02588
	A1	0.00625	0.00634	0.01919
	A2	0.01412	0.01401	0.02285
	A2	0.00628	0.00617	0.01519
	B1	0.01052	0.01087	0.02173
	B1	0.00451	0.00489	0.01748
	B2	0.01142	0.01156	0.02054
	B2	0.00457	0.00473	0.01531
	C1	0.00745	0.00807	0.02724
	C1	0.00302	0.00365	0.02312
sky130_fd_sc_hs__a221o_2	A1	0.01586	0.01601	0.02751
	A1	0.00868	0.00882	0.02082
	A2	0.01703	0.01698	0.02527
	A2	0.00870	0.00866	0.01733
	B1	0.01360	0.01416	0.02461
	B1	0.00691	0.00754	0.01977
	B2	0.01462	0.01502	0.02381
	B2	0.00705	0.00750	0.01797
	C1	0.01024	0.01109	0.02921
	C1	0.00548	0.00635	0.02511

sky130_fd_sc_hs__a221o_4	**A1**	0.03152	0.03214	0.05605
	A1	0.01830	0.01899	0.04407
	A2	0.03299	0.03330	0.05073
	A2	0.01834	0.01878	0.03739
	B1	0.02624	0.02722	0.04743
	B1	0.01439	0.01545	0.03969
	B2	0.02831	0.02910	0.04582
	B2	0.01448	0.01532	0.03461
	C1	0.01868	0.02033	0.05532
	C1	0.01068	0.01236	0.04779

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00382	0.00382	0.01412
	A1	0.01141	0.01137	0.02071
	A2	0.00450	0.00415	0.01350
	A2	0.01254	0.01232	0.02096
	B1	0.00380	0.00381	0.01542
	B1	0.01027	0.01014	0.02032
	B2	0.00411	0.00421	0.01537
	B2	0.01135	0.01128	0.02083
	C1	0.00345	0.00470	0.02448
	C1	0.00787	0.00909	0.02874

sky130_fd_sc_hs__a221o_2	**A1**	0.00781	0.00730	0.01622
	A1	0.01543	0.01506	0.02382
	A2	0.00820	0.00738	0.01601
	A2	0.01684	0.01618	0.02460
	B1	0.00778	0.00709	0.01881
	B1	0.01441	0.01385	0.02349
	B2	0.00826	0.00758	0.02019
	B2	0.01572	0.01522	0.02448
	C1	0.00658	0.00764	0.02710
	C1	0.01469	0.01483	0.03050
sky130_fd_sc_hs__a221o_4	**A1**	0.01460	0.01366	0.03177
	A1	0.02838	0.02742	0.04455
	A2	0.01594	0.01458	0.03184
	A2	0.03131	0.02995	0.04630
	B1	0.01489	0.01353	0.03158
	B1	0.02652	0.02519	0.04301
	B2	0.01568	0.01445	0.03182
	B2	0.02915	0.02797	0.04522
	C1	0.01205	0.01407	0.05028
	C1	0.02744	0.02758	0.05616

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)**	0.00127	0.00128	0.00126
	(A2 * B1 * B2 * C1 * X)	-0.00158	-0.00165	-0.00164
	(A2 * B1 * B2 * !C1 * X)	0.00128	0.00128	0.00126
	(A2 * B1 * B2 * !C1 * X)	-0.00156	-0.00165	-0.00164
	(A2 * B1 * !B2 * C1 * X)	0.00129	0.00128	0.00126
	(A2 * B1 * !B2 * C1 * X)	-0.00150	-0.00161	-0.00160
	(A2 * !B1 * C1 * X)	0.00129	0.00128	0.00126
	(A2 * !B1 * C1 * X)	-0.00150	-0.00161	-0.00160
	(!A2 * B1 * B2 * C1 * X)	0.00121	0.00122	0.00121
	(!A2 * B1 * B2 * C1 * X)	-0.00168	-0.00170	-0.00169
	(!A2 * B1 * B2 * !C1 * X)	0.00120	0.00122	0.00121
	(!A2 * B1 * B2 * !C1 * X)	-0.00168	-0.00170	-0.00169
	(!A2 * B1 * !B2 * C1 * X)	0.00120	0.00122	0.00121
	(!A2 * B1 * !B2 * C1 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * B1 * !B2 * !C1 * !X)	0.00042	0.00042	0.00041
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00195	-0.00195	-0.00198
	(!A2 * !B1 * C1 * X)	0.00120	0.00122	0.00121
	(!A2 * !B1 * C1 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * !B1 * !C1 * !X)	0.00042	0.00042	0.00041
	(!A2 * !B1 * !C1 * !X)	-0.00195	-0.00195	-0.00198

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00144	0.00145	0.00144
	(A2 * B1 * B2 * C1 * X)	-0.00157	-0.00164	-0.00163
	(A2 * B1 * B2 * !C1 * X)	0.00145	0.00145	0.00144
	(A2 * B1 * B2 * !C1 * X)	-0.00155	-0.00164	-0.00163
	(A2 * B1 * !B2 * C1 * X)	0.00147	0.00145	0.00144
	(A2 * B1 * !B2 * C1 * X)	-0.00148	-0.00159	-0.00159
	(A2 * !B1 * C1 * X)	0.00147	0.00145	0.00144
	(A2 * !B1 * C1 * X)	-0.00148	-0.00159	-0.00159
	(!A2 * B1 * B2 * C1 * X)	0.00137	0.00138	0.00137
	(!A2 * B1 * B2 * C1 * X)	-0.00167	-0.00169	-0.00168
	(!A2 * B1 * B2 * !C1 * X)	0.00137	0.00138	0.00137
	(!A2 * B1 * B2 * !C1 * X)	-0.00167	-0.00169	-0.00168
	(!A2 * B1 * !B2 * C1 * X)	0.00137	0.00138	0.00138
	(!A2 * B1 * !B2 * C1 * X)	-0.00167	-0.00169	-0.00168
	(!A2 * B1 * !B2 * !C1 * !X)	0.00046	0.00047	0.00045
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00197	-0.00198	-0.00199
	(!A2 * !B1 * C1 * X)	0.00137	0.00138	0.00137
	(!A2 * !B1 * C1 * X)	-0.00167	-0.00169	-0.00168
	(!A2 * !B1 * !C1 * !X)	0.00046	0.00047	0.00045
	(!A2 * !B1 * !C1 * !X)	-0.00197	-0.00198	-0.00199

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00285	0.00286	0.00282
	(A2 * B1 * B2 * C1 * X)	-0.00307	-0.00321	-0.00320
	(A2 * B1 * B2 * !C1 * X)	0.00285	0.00286	0.00282
	(A2 * B1 * B2 * !C1 * X)	-0.00305	-0.00322	-0.00320
	(A2 * B1 * !B2 * C1 * X)	0.00286	0.00285	0.00282
	(A2 * B1 * !B2 * C1 * X)	-0.00296	-0.00316	-0.00313
	(A2 * !B1 * C1 * X)	0.00286	0.00285	0.00282
	(A2 * !B1 * C1 * X)	-0.00295	-0.00316	-0.00313
	(!A2 * B1 * B2 * C1 * X)	0.00267	0.00269	0.00268
	(!A2 * B1 * B2 * C1 * X)	-0.00328	-0.00330	-0.00329
	(!A2 * B1 * B2 * !C1 * X)	0.00267	0.00268	0.00268
	(!A2 * B1 * B2 * !C1 * X)	-0.00328	-0.00330	-0.00329
	(!A2 * B1 * !B2 * C1 * X)	0.00267	0.00268	0.00269
	(!A2 * B1 * !B2 * C1 * X)	-0.00328	-0.00329	-0.00329
	(!A2 * B1 * !B2 * !C1 * !X)	0.00129	0.00130	0.00125
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00363	-0.00366	-0.00372
	(!A2 * !B1 * C1 * X)	0.00267	0.00270	0.00269
	(!A2 * !B1 * C1 * X)	-0.00328	-0.00330	-0.00329
	(!A2 * !B1 * !C1 * !X)	0.00129	0.00130	0.00125
	(!A2 * !B1 * !C1 * !X)	-0.00363	-0.00366	-0.00372

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)**	-0.00126	-0.00126	-0.00126
	(A2 * B1 * B2 * C1 * X)	0.00163	0.00165	0.00164
	(A2 * B1 * B2 * !C1 * X)	-0.00126	-0.00126	-0.00126
	(A2 * B1 * B2 * !C1 * X)	0.00164	0.00165	0.00164
	(A2 * B1 * !B2 * C1 * X)	-0.00126	-0.00126	-0.00126
	(A2 * B1 * !B2 * C1 * X)	0.00160	0.00161	0.00160
	(A2 * !B1 * C1 * X)	-0.00126	-0.00126	-0.00126
	(A2 * !B1 * C1 * X)	0.00160	0.00161	0.00160
	(!A2 * B1 * B2 * C1 * X)	-0.00117	-0.00121	-0.00121
	(!A2 * B1 * B2 * C1 * X)	0.00168	0.00170	0.00169
	(!A2 * B1 * B2 * !C1 * X)	-0.00118	-0.00121	-0.00121
	(!A2 * B1 * B2 * !C1 * X)	0.00170	0.00170	0.00170
	(!A2 * B1 * !B2 * C1 * X)	-0.00118	-0.00121	-0.00121
	(!A2 * B1 * !B2 * C1 * X)	0.00170	0.00171	0.00170
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * B1 * !B2 * !C1 * !X)	0.00198	0.00201	0.00198
	(!A2 * !B1 * C1 * X)	-0.00118	-0.00121	-0.00121
	(!A2 * !B1 * C1 * X)	0.00170	0.00171	0.00170
	(!A2 * !B1 * !C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !C1 * !X)	0.00198	0.00201	0.00198

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00143	-0.00144	-0.00143
	(A2 * B1 * B2 * C1 * X)	0.00163	0.00164	0.00163
	(A2 * B1 * B2 * !C1 * X)	-0.00143	-0.00144	-0.00143
	(A2 * B1 * B2 * !C1 * X)	0.00162	0.00164	0.00163
	(A2 * B1 * !B2 * C1 * X)	-0.00143	-0.00144	-0.00143
	(A2 * B1 * !B2 * C1 * X)	0.00158	0.00159	0.00159
	(A2 * !B1 * C1 * X)	-0.00143	-0.00144	-0.00143
	(A2 * !B1 * C1 * X)	0.00158	0.00159	0.00159
	(!A2 * B1 * B2 * C1 * X)	-0.00134	-0.00137	-0.00137
	(!A2 * B1 * B2 * C1 * X)	0.00169	0.00169	0.00168
	(!A2 * B1 * B2 * !C1 * X)	-0.00133	-0.00137	-0.00137
	(!A2 * B1 * B2 * !C1 * X)	0.00169	0.00169	0.00168
	(!A2 * B1 * !B2 * C1 * X)	-0.00134	-0.00138	-0.00138
	(!A2 * B1 * !B2 * C1 * X)	0.00169	0.00170	0.00168
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00044	-0.00045	-0.00044
	(!A2 * B1 * !B2 * !C1 * !X)	0.00199	0.00203	0.00200
	(!A2 * !B1 * C1 * X)	-0.00133	-0.00137	-0.00137
	(!A2 * !B1 * C1 * X)	0.00169	0.00169	0.00168
	(!A2 * !B1 * !C1 * !X)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * !C1 * !X)	0.00199	0.00203	0.00200

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00282	-0.00283	-0.00282
	(A2 * B1 * B2 * C1 * X)	0.00318	0.00321	0.00320
	(A2 * B1 * B2 * !C1 * X)	-0.00282	-0.00283	-0.00282
	(A2 * B1 * B2 * !C1 * X)	0.00318	0.00322	0.00320
	(A2 * B1 * !B2 * C1 * X)	-0.00281	-0.00282	-0.00281
	(A2 * B1 * !B2 * C1 * X)	0.00312	0.00316	0.00313
	(A2 * !B1 * C1 * X)	-0.00281	-0.00282	-0.00281
	(A2 * !B1 * C1 * X)	0.00311	0.00316	0.00313
	(!A2 * B1 * B2 * C1 * X)	-0.00259	-0.00269	-0.00268
	(!A2 * B1 * B2 * C1 * X)	0.00330	0.00332	0.00329
	(!A2 * B1 * B2 * !C1 * X)	-0.00258	-0.00268	-0.00268
	(!A2 * B1 * B2 * !C1 * X)	0.00329	0.00330	0.00330
	(!A2 * B1 * !B2 * C1 * X)	-0.00259	-0.00268	-0.00269
	(!A2 * B1 * !B2 * C1 * X)	0.00330	0.00332	0.00330
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00122	-0.00123	-0.00122
	(!A2 * B1 * !B2 * !C1 * !X)	0.00371	0.00374	0.00373
	(!A2 * !B1 * C1 * X)	-0.00259	-0.00270	-0.00269
	(!A2 * !B1 * C1 * X)	0.00330	0.00332	0.00330
	(!A2 * !B1 * !C1 * !X)	-0.00122	-0.00123	-0.00122
	(!A2 * !B1 * !C1 * !X)	0.00371	0.00374	0.00373

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)**	0.00146	0.00148	0.00146
	(A1 * B1 * B2 * C1 * X)	-0.00152	-0.00160	-0.00159
	(A1 * B1 * B2 * !C1 * X)	0.00147	0.00148	0.00146
	(A1 * B1 * B2 * !C1 * X)	-0.00151	-0.00160	-0.00159
	(A1 * B1 * !B2 * C1 * X)	0.00148	0.00148	0.00147
	(A1 * B1 * !B2 * C1 * X)	-0.00144	-0.00156	-0.00156
	(A1 * !B1 * C1 * X)	0.00148	0.00148	0.00147
	(A1 * !B1 * C1 * X)	-0.00144	-0.00156	-0.00156
	(!A1 * B1 * B2 * X)	0.00140	0.00142	0.00141
	(!A1 * B1 * B2 * X)	-0.00163	-0.00164	-0.00164
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00140	0.00142	0.00141
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00163	-0.00164	-0.00164
	(!A1 * B1 * !B2 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00185	-0.00186	-0.00185
	(!A1 * !B1 * !C1 * !X)	0.00119	0.00120	0.00119
	(!A1 * !B1 * !C1 * !X)	-0.00185	-0.00186	-0.00185

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00160	0.00162	0.00160
	(A1 * B1 * B2 * C1 * X)	-0.00151	-0.00159	-0.00158
	(A1 * B1 * B2 * !C1 * X)	0.00161	0.00162	0.00160
	(A1 * B1 * B2 * !C1 * X)	-0.00149	-0.00158	-0.00158
	(A1 * B1 * !B2 * C1 * X)	0.00162	0.00162	0.00160
	(A1 * B1 * !B2 * C1 * X)	-0.00143	-0.00155	-0.00154
	(A1 * !B1 * C1 * X)	0.00162	0.00162	0.00160
	(A1 * !B1 * C1 * X)	-0.00143	-0.00155	-0.00154
	(!A1 * B1 * B2 * X)	0.00153	0.00154	0.00153
	(!A1 * B1 * B2 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00153	0.00155	0.00153
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * B1 * !B2 * !C1 * !X)	0.00132	0.00133	0.00133
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00183	-0.00183	-0.00183
	(!A1 * !B1 * !C1 * !X)	0.00132	0.00133	0.00133
	(!A1 * !B1 * !C1 * !X)	-0.00183	-0.00183	-0.00183

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00280	0.00282	0.00278
	(A1 * B1 * B2 * C1 * X)	-0.00302	-0.00320	-0.00317
	(A1 * B1 * B2 * !C1 * X)	0.00280	0.00282	0.00278
	(A1 * B1 * B2 * !C1 * X)	-0.00301	-0.00319	-0.00317
	(A1 * B1 * !B2 * C1 * X)	0.00281	0.00282	0.00278
	(A1 * B1 * !B2 * C1 * X)	-0.00290	-0.00313	-0.00311
	(A1 * !B1 * C1 * X)	0.00281	0.00282	0.00278
	(A1 * !B1 * C1 * X)	-0.00290	-0.00313	-0.00311
	(!A1 * B1 * B2 * X)	0.00265	0.00268	0.00265
	(!A1 * B1 * B2 * X)	-0.00326	-0.00328	-0.00327
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00265	0.00266	0.00265
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00326	-0.00327	-0.00326
	(!A1 * B1 * !B2 * !C1 * !X)	0.00259	0.00262	0.00259
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00333	-0.00335	-0.00333
	(!A1 * !B1 * !C1 * !X)	0.00259	0.00262	0.00259
	(!A1 * !B1 * !C1 * !X)	-0.00333	-0.00335	-0.00333

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)**	-0.00146	-0.00147	-0.00146
	(A1 * B1 * B2 * C1 * X)	0.00159	0.00160	0.00159
	(A1 * B1 * B2 * !C1 * X)	-0.00146	-0.00146	-0.00146
	(A1 * B1 * B2 * !C1 * X)	0.00159	0.00160	0.00159
	(A1 * B1 * !B2 * C1 * X)	-0.00146	-0.00146	-0.00146
	(A1 * B1 * !B2 * C1 * X)	0.00155	0.00156	0.00156
	(A1 * !B1 * C1 * X)	-0.00146	-0.00146	-0.00146
	(A1 * !B1 * C1 * X)	0.00155	0.00156	0.00156
	(!A1 * B1 * B2 * X)	-0.00137	-0.00141	-0.00141
	(!A1 * B1 * B2 * X)	0.00163	0.00165	0.00164
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00138	-0.00141	-0.00141
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00165	0.00165	0.00164
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00111	-0.00120	-0.00119
	(!A1 * B1 * !B2 * !C1 * !X)	0.00191	0.00189	0.00186
	(!A1 * !B1 * !C1 * !X)	-0.00111	-0.00120	-0.00119
	(!A1 * !B1 * !C1 * !X)	0.00191	0.00189	0.00186

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00160	-0.00160	-0.00160
	(A1 * B1 * B2 * C1 * X)	0.00157	0.00159	0.00158
	(A1 * B1 * B2 * !C1 * X)	-0.00160	-0.00160	-0.00160
	(A1 * B1 * B2 * !C1 * X)	0.00157	0.00158	0.00158
	(A1 * B1 * !B2 * C1 * X)	-0.00160	-0.00160	-0.00160
	(A1 * B1 * !B2 * C1 * X)	0.00154	0.00155	0.00154
	(A1 * !B1 * C1 * X)	-0.00160	-0.00160	-0.00160
	(A1 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(!A1 * B1 * B2 * X)	-0.00150	-0.00154	-0.00153
	(!A1 * B1 * B2 * X)	0.00162	0.00164	0.00163
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00150	-0.00155	-0.00153
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00162	0.00164	0.00163
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00133	-0.00133
	(!A1 * B1 * !B2 * !C1 * !X)	0.00189	0.00186	0.00184
	(!A1 * !B1 * !C1 * !X)	-0.00124	-0.00133	-0.00133
	(!A1 * !B1 * !C1 * !X)	0.00189	0.00186	0.00184

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00278	-0.00280	-0.00278
	(A1 * B1 * B2 * C1 * X)	0.00316	0.00320	0.00317
	(A1 * B1 * B2 * !C1 * X)	-0.00278	-0.00279	-0.00278
	(A1 * B1 * B2 * !C1 * X)	0.00316	0.00319	0.00317
	(A1 * B1 * !B2 * C1 * X)	-0.00277	-0.00279	-0.00277
	(A1 * B1 * !B2 * C1 * X)	0.00309	0.00313	0.00311
	(A1 * !B1 * C1 * X)	-0.00277	-0.00279	-0.00277
	(A1 * !B1 * C1 * X)	0.00309	0.00313	0.00311
	(!A1 * B1 * B2 * X)	-0.00258	-0.00268	-0.00265
	(!A1 * B1 * B2 * X)	0.00327	0.00330	0.00327
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00257	-0.00266	-0.00265
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00327	0.00330	0.00327
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00245	-0.00262	-0.00259
	(!A1 * B1 * !B2 * !C1 * !X)	0.00342	0.00337	0.00334
	(!A1 * !B1 * !C1 * !X)	-0.00245	-0.00262	-0.00259
	(!A1 * !B1 * !C1 * !X)	0.00342	0.00337	0.00334

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)**	0.00134	0.00137	0.00131
	(A1 * A2 * B2 * C1 * X)	-0.00120	-0.00121	-0.00120
	(A1 * A2 * B2 * !C1 * X)	0.00127	0.00130	0.00127
	(A1 * A2 * B2 * !C1 * X)	-0.00094	-0.00096	-0.00094
	(A1 * A2 * !B2 * C1 * X)	0.00123	0.00125	0.00123
	(A1 * A2 * !B2 * C1 * X)	-0.00112	-0.00113	-0.00112
	(A1 * A2 * !B2 * !C1 * X)	0.00122	0.00123	0.00122
	(A1 * A2 * !B2 * !C1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * !A2 * B2 * C1 * X)	0.00149	0.00129	0.00127
	(A1 * !A2 * B2 * C1 * X)	-0.00140	-0.00165	-0.00165
	(A1 * !A2 * !B2 * C1 * X)	0.00121	0.00122	0.00122
	(A1 * !A2 * !B2 * C1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * !B2 * !C1 * !X)	0.00040	0.00040	0.00038
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00196	-0.00197	-0.00198
	(!A1 * B2 * C1 * X)	0.00149	0.00129	0.00127
	(!A1 * B2 * C1 * X)	-0.00140	-0.00165	-0.00165
	(!A1 * !B2 * C1 * X)	0.00121	0.00122	0.00122
	(!A1 * !B2 * C1 * X)	-0.00167	-0.00168	-0.00167
	(!A1 * !B2 * !C1 * !X)	0.00040	0.00040	0.00038
	(!A1 * !B2 * !C1 * !X)	-0.00196	-0.00197	-0.00198

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00162	0.00164	0.00157
	(A1 * A2 * B2 * C1 * X)	-0.00121	-0.00121	-0.00122
	(A1 * A2 * B2 * !C1 * X)	0.00154	0.00156	0.00153
	(A1 * A2 * B2 * !C1 * X)	-0.00096	-0.00098	-0.00096
	(A1 * A2 * !B2 * C1 * X)	0.00149	0.00152	0.00148
	(A1 * A2 * !B2 * C1 * X)	-0.00113	-0.00114	-0.00113
	(A1 * A2 * !B2 * !C1 * X)	0.00146	0.00148	0.00146
	(A1 * A2 * !B2 * !C1 * X)	-0.00095	-0.00096	-0.00096
	(A1 * !A2 * B2 * C1 * X)	0.00175	0.00155	0.00153
	(A1 * !A2 * B2 * C1 * X)	-0.00141	-0.00167	-0.00167
	(A1 * !A2 * !B2 * C1 * X)	0.00145	0.00147	0.00146
	(A1 * !A2 * !B2 * C1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !B2 * !C1 * !X)	0.00047	0.00048	0.00046
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00206	-0.00207	-0.00209
	(!A1 * B2 * C1 * X)	0.00175	0.00155	0.00153
	(!A1 * B2 * C1 * X)	-0.00141	-0.00167	-0.00167
	(!A1 * !B2 * C1 * X)	0.00146	0.00147	0.00146
	(!A1 * !B2 * C1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * !B2 * !C1 * !X)	0.00047	0.00048	0.00046
	(!A1 * !B2 * !C1 * !X)	-0.00206	-0.00207	-0.00209

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00287	0.00290	0.00278
	(A1 * A2 * B2 * C1 * X)	-0.00250	-0.00250	-0.00249
	(A1 * A2 * B2 * !C1 * X)	0.00273	0.00278	0.00273
	(A1 * A2 * B2 * !C1 * X)	-0.00192	-0.00196	-0.00193
	(A1 * A2 * !B2 * C1 * X)	0.00268	0.00272	0.00266
	(A1 * A2 * !B2 * C1 * X)	-0.00231	-0.00232	-0.00232
	(A1 * A2 * !B2 * !C1 * X)	0.00263	0.00264	0.00263
	(A1 * A2 * !B2 * !C1 * X)	-0.00191	-0.00193	-0.00193
	(A1 * !A2 * B2 * C1 * X)	0.00318	0.00273	0.00271
	(A1 * !A2 * B2 * C1 * X)	-0.00280	-0.00330	-0.00332
	(A1 * !A2 * !B2 * C1 * X)	0.00262	0.00262	0.00262
	(A1 * !A2 * !B2 * C1 * X)	-0.00336	-0.00336	-0.00336
	(A1 * !A2 * !B2 * !C1 * !X)	0.00102	0.00103	0.00098
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00391	-0.00394	-0.00400
	(!A1 * B2 * C1 * X)	0.00319	0.00273	0.00271
	(!A1 * B2 * C1 * X)	-0.00280	-0.00330	-0.00332
	(!A1 * !B2 * C1 * X)	0.00261	0.00262	0.00262
	(!A1 * !B2 * C1 * X)	-0.00336	-0.00336	-0.00336
	(!A1 * !B2 * !C1 * !X)	0.00102	0.00103	0.00098
	(!A1 * !B2 * !C1 * !X)	-0.00391	-0.00394	-0.00400

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)**	-0.00128	-0.00129	-0.00128
	(A1 * A2 * B2 * C1 * X)	0.00120	0.00121	0.00120
	(A1 * A2 * B2 * !C1 * X)	-0.00122	-0.00122	-0.00122
	(A1 * A2 * B2 * !C1 * X)	0.00099	0.00100	0.00099
	(A1 * A2 * !B2 * C1 * X)	-0.00120	-0.00123	-0.00123
	(A1 * A2 * !B2 * C1 * X)	0.00112	0.00113	0.00112
	(A1 * A2 * !B2 * !C1 * X)	-0.00119	-0.00122	-0.00122
	(A1 * A2 * !B2 * !C1 * X)	0.00095	0.00094	0.00094
	(A1 * !A2 * B2 * C1 * X)	-0.00127	-0.00127	-0.00126
	(A1 * !A2 * B2 * C1 * X)	0.00165	0.00165	0.00165
	(A1 * !A2 * !B2 * C1 * X)	-0.00118	-0.00121	-0.00122
	(A1 * !A2 * !B2 * C1 * X)	0.00168	0.00169	0.00168
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00037	-0.00038	-0.00037
	(A1 * !A2 * !B2 * !C1 * !X)	0.00198	0.00201	0.00199
	(!A1 * B2 * C1 * X)	-0.00127	-0.00127	-0.00126
	(!A1 * B2 * C1 * X)	0.00165	0.00165	0.00165
	(!A1 * !B2 * C1 * X)	-0.00118	-0.00121	-0.00122
	(!A1 * !B2 * C1 * X)	0.00168	0.00169	0.00168
	(!A1 * !B2 * !C1 * !X)	-0.00037	-0.00038	-0.00037
	(!A1 * !B2 * !C1 * !X)	0.00198	0.00201	0.00199

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00154	-0.00154	-0.00154
	(A1 * A2 * B2 * C1 * X)	0.00121	0.00121	0.00122
	(A1 * A2 * B2 * !C1 * X)	-0.00148	-0.00149	-0.00149
	(A1 * A2 * B2 * !C1 * X)	0.00101	0.00101	0.00101
	(A1 * A2 * !B2 * C1 * X)	-0.00143	-0.00148	-0.00148
	(A1 * A2 * !B2 * C1 * X)	0.00113	0.00114	0.00113
	(A1 * A2 * !B2 * !C1 * X)	-0.00143	-0.00147	-0.00146
	(A1 * A2 * !B2 * !C1 * X)	0.00097	0.00096	0.00096
	(A1 * !A2 * B2 * C1 * X)	-0.00152	-0.00153	-0.00152
	(A1 * !A2 * B2 * C1 * X)	0.00167	0.00167	0.00167
	(A1 * !A2 * !B2 * C1 * X)	-0.00142	-0.00146	-0.00146
	(A1 * !A2 * !B2 * C1 * X)	0.00170	0.00170	0.00170
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00045	-0.00046	-0.00045
	(A1 * !A2 * !B2 * !C1 * !X)	0.00210	0.00211	0.00209
	(!A1 * B2 * C1 * X)	-0.00152	-0.00153	-0.00152
	(!A1 * B2 * C1 * X)	0.00167	0.00167	0.00167
	(!A1 * !B2 * C1 * X)	-0.00142	-0.00146	-0.00146
	(!A1 * !B2 * C1 * X)	0.00170	0.00170	0.00170
	(!A1 * !B2 * !C1 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !B2 * !C1 * !X)	0.00210	0.00211	0.00209

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00275	-0.00275	-0.00274
	(A1 * A2 * B2 * C1 * X)	0.00250	0.00250	0.00249
	(A1 * A2 * B2 * !C1 * X)	-0.00263	-0.00265	-0.00263
	(A1 * A2 * B2 * !C1 * X)	0.00201	0.00204	0.00204
	(A1 * A2 * !B2 * C1 * X)	-0.00254	-0.00265	-0.00266
	(A1 * A2 * !B2 * C1 * X)	0.00231	0.00232	0.00232
	(A1 * A2 * !B2 * !C1 * X)	-0.00252	-0.00264	-0.00263
	(A1 * A2 * !B2 * !C1 * X)	0.00195	0.00195	0.00194
	(A1 * !A2 * B2 * C1 * X)	-0.00268	-0.00270	-0.00268
	(A1 * !A2 * B2 * C1 * X)	0.00330	0.00332	0.00332
	(A1 * !A2 * !B2 * C1 * X)	-0.00250	-0.00262	-0.00262
	(A1 * !A2 * !B2 * C1 * X)	0.00336	0.00338	0.00337
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00096	-0.00097	-0.00095
	(A1 * !A2 * !B2 * !C1 * !X)	0.00403	0.00406	0.00401
	(!A1 * B2 * C1 * X)	-0.00268	-0.00270	-0.00268
	(!A1 * B2 * C1 * X)	0.00330	0.00332	0.00332
	(!A1 * !B2 * C1 * X)	-0.00250	-0.00262	-0.00262
	(!A1 * !B2 * C1 * X)	0.00336	0.00338	0.00337
	(!A1 * !B2 * !C1 * !X)	-0.00096	-0.00097	-0.00095
	(!A1 * !B2 * !C1 * !X)	0.00403	0.00406	0.00401

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)**	0.00141	0.00141	0.00135
	(A1 * A2 * B1 * C1 * X)	-0.00117	-0.00119	-0.00118
	(A1 * A2 * B1 * !C1 * X)	0.00133	0.00135	0.00132
	(A1 * A2 * B1 * !C1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * !B1 * C1 * X)	0.00128	0.00129	0.00127
	(A1 * A2 * !B1 * C1 * X)	-0.00110	-0.00110	-0.00110
	(A1 * A2 * !B1 * !C1 * X)	0.00126	0.00128	0.00126
	(A1 * A2 * !B1 * !C1 * X)	-0.00091	-0.00092	-0.00092
	(A1 * !A2 * B1 * C1 * X)	0.00156	0.00134	0.00131
	(A1 * !A2 * B1 * C1 * X)	-0.00135	-0.00162	-0.00161
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00125	0.00127	0.00126
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00164	-0.00165	-0.00164
	(A1 * !A2 * !B1 * !C1 * !X)	0.00113	0.00114	0.00113
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00176	-0.00177	-0.00176
	(!A1 * B1 * C1 * X)	0.00156	0.00134	0.00131
	(!A1 * B1 * C1 * X)	-0.00135	-0.00162	-0.00161
	(!A1 * !B1 * !C1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !B1 * !C1 * !X)	-0.00176	-0.00177	-0.00176

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00166	0.00167	0.00161
	(A1 * A2 * B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(A1 * A2 * B1 * !C1 * X)	0.00159	0.00160	0.00157
	(A1 * A2 * B1 * !C1 * X)	-0.00088	-0.00088	-0.00087
	(A1 * A2 * !B1 * C1 * X)	0.00153	0.00154	0.00152
	(A1 * A2 * !B1 * C1 * X)	-0.00106	-0.00106	-0.00105
	(A1 * A2 * !B1 * !C1 * X)	0.00152	0.00153	0.00152
	(A1 * A2 * !B1 * !C1 * X)	-0.00086	-0.00087	-0.00087
	(A1 * !A2 * B1 * C1 * X)	0.00181	0.00160	0.00157
	(A1 * !A2 * B1 * C1 * X)	-0.00131	-0.00156	-0.00156
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00150	0.00151	0.00150
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00158	-0.00159	-0.00158
	(A1 * !A2 * !B1 * !C1 * !X)	0.00131	0.00133	0.00131
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177
	(!A1 * B1 * C1 * X)	0.00181	0.00160	0.00157
	(!A1 * B1 * C1 * X)	-0.00131	-0.00156	-0.00156
	(!A1 * !B1 * !C1 * !X)	0.00131	0.00133	0.00131
	(!A1 * !B1 * !C1 * !X)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00315	0.00316	0.00307
	(A1 * A2 * B1 * C1 * X)	-0.00238	-0.00241	-0.00239
	(A1 * A2 * B1 * !C1 * X)	0.00303	0.00305	0.00302
	(A1 * A2 * B1 * !C1 * X)	-0.00182	-0.00184	-0.00183
	(A1 * A2 * !B1 * C1 * X)	0.00297	0.00301	0.00295
	(A1 * A2 * !B1 * C1 * X)	-0.00221	-0.00224	-0.00222
	(A1 * A2 * !B1 * !C1 * X)	0.00293	0.00295	0.00293
	(A1 * A2 * !B1 * !C1 * X)	-0.00181	-0.00183	-0.00183
	(A1 * !A2 * B1 * C1 * X)	0.00342	0.00305	0.00300
	(A1 * !A2 * B1 * C1 * X)	-0.00270	-0.00322	-0.00321
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00291	0.00294	0.00291
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00325	-0.00327	-0.00326
	(A1 * !A2 * !B1 * !C1 * !X)	0.00283	0.00286	0.00283
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00333	-0.00335	-0.00333
	(!A1 * B1 * C1 * X)	0.00342	0.00305	0.00300
	(!A1 * B1 * C1 * X)	-0.00270	-0.00322	-0.00321
	(!A1 * !B1 * !C1 * !X)	0.00283	0.00286	0.00283
	(!A1 * !B1 * !C1 * !X)	-0.00333	-0.00335	-0.00333

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)**	-0.00132	-0.00133	-0.00132
	(A1 * A2 * B1 * C1 * X)	0.00117	0.00119	0.00118
	(A1 * A2 * B1 * !C1 * X)	-0.00127	-0.00128	-0.00127
	(A1 * A2 * B1 * !C1 * X)	0.00096	0.00096	0.00097
	(A1 * A2 * !B1 * C1 * X)	-0.00124	-0.00127	-0.00127
	(A1 * A2 * !B1 * C1 * X)	0.00110	0.00110	0.00110
	(A1 * A2 * !B1 * !C1 * X)	-0.00124	-0.00126	-0.00126
	(A1 * A2 * !B1 * !C1 * X)	0.00092	0.00092	0.00092
	(A1 * !A2 * B1 * C1 * X)	-0.00131	-0.00131	-0.00130
	(A1 * !A2 * B1 * C1 * X)	0.00162	0.00162	0.00161
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00122	-0.00125	-0.00126
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00164	0.00165	0.00165
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00106	-0.00113	-0.00113
	(A1 * !A2 * !B1 * !C1 * !X)	0.00184	0.00179	0.00177
	(!A1 * B1 * C1 * X)	-0.00131	-0.00131	-0.00130
	(!A1 * B1 * C1 * X)	0.00162	0.00162	0.00161
	(!A1 * !B1 * !C1 * !X)	-0.00106	-0.00113	-0.00113
	(!A1 * !B1 * !C1 * !X)	0.00184	0.00179	0.00177

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00158	-0.00159	-0.00158
	(A1 * A2 * B1 * C1 * X)	0.00113	0.00114	0.00113
	(A1 * A2 * B1 * !C1 * X)	-0.00152	-0.00153	-0.00152
	(A1 * A2 * B1 * !C1 * X)	0.00092	0.00092	0.00092
	(A1 * A2 * !B1 * C1 * X)	-0.00149	-0.00153	-0.00152
	(A1 * A2 * !B1 * C1 * X)	0.00106	0.00106	0.00105
	(A1 * A2 * !B1 * !C1 * X)	-0.00147	-0.00152	-0.00152
	(A1 * A2 * !B1 * !C1 * X)	0.00087	0.00088	0.00087
	(A1 * !A2 * B1 * C1 * X)	-0.00157	-0.00157	-0.00156
	(A1 * !A2 * B1 * C1 * X)	0.00156	0.00156	0.00156
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00146	-0.00150	-0.00150
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00158	0.00160	0.00159
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00122	-0.00131	-0.00131
	(A1 * !A2 * !B1 * !C1 * !X)	0.00184	0.00180	0.00178
	(!A1 * B1 * C1 * X)	-0.00157	-0.00157	-0.00156
	(!A1 * B1 * C1 * X)	0.00156	0.00156	0.00156
	(!A1 * !B1 * !C1 * !X)	-0.00122	-0.00131	-0.00131
	(!A1 * !B1 * !C1 * !X)	0.00184	0.00180	0.00178

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00304	-0.00305	-0.00303
	(A1 * A2 * B1 * C1 * X)	0.00238	0.00241	0.00239
	(A1 * A2 * B1 * !C1 * X)	-0.00290	-0.00293	-0.00291
	(A1 * A2 * B1 * !C1 * X)	0.00192	0.00194	0.00194
	(A1 * A2 * !B1 * C1 * X)	-0.00286	-0.00296	-0.00295
	(A1 * A2 * !B1 * C1 * X)	0.00221	0.00224	0.00222
	(A1 * A2 * !B1 * !C1 * X)	-0.00283	-0.00295	-0.00293
	(A1 * A2 * !B1 * !C1 * X)	0.00183	0.00185	0.00183
	(A1 * !A2 * B1 * C1 * X)	-0.00298	-0.00299	-0.00297
	(A1 * !A2 * B1 * C1 * X)	0.00319	0.00322	0.00321
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00282	-0.00291	-0.00291
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00325	0.00328	0.00327
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00268	-0.00285	-0.00283
	(A1 * !A2 * !B1 * !C1 * !X)	0.00341	0.00337	0.00334
	(!A1 * B1 * C1 * X)	-0.00298	-0.00299	-0.00297
	(!A1 * B1 * C1 * X)	0.00319	0.00322	0.00321
	(!A1 * !B1 * !C1 * !X)	-0.00268	-0.00285	-0.00283
	(!A1 * !B1 * !C1 * !X)	0.00341	0.00337	0.00334

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)	0.00160	0.00162	0.00160
	(A1 * B1 * B2 * X)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * B1 * !B2 * X)	0.00159	0.00162	0.00160
	(A1 * A2 * B1 * !B2 * X)	-0.00080	-0.00082	-0.00081
	(A1 * A2 * !B1 * X)	0.00159	0.00162	0.00160
	(A1 * A2 * !B1 * X)	-0.00080	-0.00082	-0.00081
	(!A1 * B1 * B2 * X)	0.00159	0.00162	0.00160
	(!A1 * B1 * B2 * X)	-0.00080	-0.00082	-0.00081
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00167	0.00170	0.00167
	(A1 * B1 * B2 * X)	-0.00080	-0.00082	-0.00081
	(A1 * A2 * B1 * !B2 * X)	0.00167	0.00170	0.00167
	(A1 * A2 * B1 * !B2 * X)	-0.00080	-0.00082	-0.00080
	(A1 * A2 * !B1 * X)	0.00167	0.00170	0.00167
	(A1 * A2 * !B1 * X)	-0.00080	-0.00082	-0.00080
	(!A1 * B1 * B2 * X)	0.00167	0.00170	0.00167
	(!A1 * B1 * B2 * X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00283	0.00287	0.00283
	(A1 * B1 * B2 * X)	-0.00172	-0.00174	-0.00171
	(A1 * A2 * B1 * !B2 * X)	0.00283	0.00288	0.00283
	(A1 * A2 * B1 * !B2 * X)	-0.00171	-0.00174	-0.00171
	(A1 * A2 * !B1 * X)	0.00283	0.00288	0.00283
	(A1 * A2 * !B1 * X)	-0.00171	-0.00174	-0.00171
	(!A1 * B1 * B2 * X)	0.00282	0.00287	0.00283
	(!A1 * B1 * B2 * X)	-0.00174	-0.00177	-0.00174

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)	-0.00148	-0.00150	-0.00158
	(A1 * B1 * B2 * X)	0.00090	0.00090	0.00083
	(A1 * A2 * B1 * !B2 * X)	-0.00135	-0.00136	-0.00155
	(A1 * A2 * B1 * !B2 * X)	0.00098	0.00098	0.00085
	(A1 * A2 * !B1 * X)	-0.00135	-0.00136	-0.00155
	(A1 * A2 * !B1 * X)	0.00098	0.00098	0.00085
	(!A1 * B1 * B2 * X)	-0.00148	-0.00149	-0.00158
	(!A1 * B1 * B2 * X)	0.00090	0.00091	0.00083
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00157	-0.00158	-0.00166
	(A1 * B1 * B2 * X)	0.00090	0.00090	0.00083
	(A1 * A2 * B1 * !B2 * X)	-0.00143	-0.00145	-0.00163
	(A1 * A2 * B1 * !B2 * X)	0.00098	0.00099	0.00084
	(A1 * A2 * !B1 * X)	-0.00143	-0.00145	-0.00163
	(A1 * A2 * !B1 * X)	0.00098	0.00099	0.00084
	(!A1 * B1 * B2 * X)	-0.00157	-0.00158	-0.00166
	(!A1 * B1 * B2 * X)	0.00091	0.00091	0.00083
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00259	-0.00262	-0.00280
	(A1 * B1 * B2 * X)	0.00193	0.00193	0.00176
	(A1 * A2 * B1 * !B2 * X)	-0.00230	-0.00233	-0.00274
	(A1 * A2 * B1 * !B2 * X)	0.00212	0.00212	0.00180
	(A1 * A2 * !B1 * X)	-0.00228	-0.00233	-0.00273
	(A1 * A2 * !B1 * X)	0.00210	0.00212	0.00180
	(!A1 * B1 * B2 * X)	-0.00258	-0.00261	-0.00279
	(!A1 * B1 * B2 * X)	0.00196	0.00196	0.00179

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00263	0.00247	0.00256	0.00259	0.00259	0.00268	0.28977
sky130_fd_sc_hs__a222oi_2	0.00527	0.00466	0.00520	0.00478	0.00472	0.00535	0.51197

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.07205	0.26932
sky130_fd_sc_hs__a222oi_2	0.00000	0.14410	0.53863

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)	0.27103	1.27162	10.10140
	A2->Y (FR)	0.29650	1.30350	10.15690
	B1->Y (FR)	0.23935	1.25052	10.60670
	B2->Y (FR)	0.26919	1.29116	10.70700
	C1->Y (FR)	0.18083	1.19259	10.62210
	C2->Y (FR)	0.20821	1.22243	10.65140
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.26259	1.09133	9.80956
	A2->Y (FR)	0.29846	1.14072	9.98040
	B1->Y (FR)	0.22779	1.05976	10.22600
	B2->Y (FR)	0.27103	1.14078	10.67160
	C1->Y (FR)	0.16633	1.03441	10.58670
	C2->Y (FR)	0.20424	1.07098	10.61560

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.04855	0.40676	3.37023
	A2->Y (RF)	0.05222	0.38063	3.10922
	B1->Y (RF)	0.04455	0.38610	3.30528
	B2->Y (RF)	0.04862	0.36163	3.04510
	C1->Y (RF)	0.03271	0.36530	3.27670
	C2->Y (RF)	0.03649	0.34162	3.01806
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.04625	0.35774	3.25693
	A2->Y (RF)	0.05034	0.33768	3.03098
	B1->Y (RF)	0.04346	0.33999	3.23073
	B2->Y (RF)	0.04814	0.32344	3.01772
	C1->Y (RF)	0.02724	0.29672	3.04322
	C2->Y (RF)	0.03226	0.28163	2.82038

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00087	0.00067	0.00286
	A1	0.00877	0.00858	0.01076
	A2	0.00115	0.00103	0.00323
	A2	0.01101	0.01089	0.01294
	B1	0.00090	0.00070	0.00371
	B1	0.00692	0.00673	0.00975
	B2	0.00120	0.00105	0.00404
	B2	0.00994	0.00978	0.01241
	C1	0.00077	0.00094	0.00778
	C1	0.00523	0.00525	0.01226
	C2	0.00113	0.00133	0.00826
	C2	0.00642	0.00650	0.01358
sky130_fd_sc_hs__a222oi_2	A1	0.00077	0.00038	0.00517
	A1	0.01786	0.01745	0.02217
	A2	0.00280	0.00248	0.00717
	A2	0.02124	0.02083	0.02539
	B1	0.00080	0.00043	0.00671
	B1	0.01299	0.01262	0.01890
	B2	0.00165	0.00134	0.00734
	B2	0.01905	0.01869	0.02405
	C1	0.00064	0.00125	0.01477
	C1	0.00909	0.00961	0.02260
	C2	0.00144	0.00192	0.01561
	C2	0.01201	0.01250	0.02616

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.01262	0.01253	0.01557
	A1	0.00493	0.00482	0.00790
	A2	0.01344	0.01331	0.01565
	A2	0.00490	0.00475	0.00712
	B1	0.00871	0.00873	0.01187
	B1	0.00274	0.00274	0.00589
	B2	0.01048	0.01045	0.01273
	B2	0.00276	0.00267	0.00510
	C1	0.00514	0.00526	0.00843
	C1	0.00070	0.00079	0.00393
	C2	0.00603	0.00605	0.00855
	C2	0.00069	0.00068	0.00318
sky130_fd_sc_hs__a222oi_2	A1	0.02375	0.02351	0.03001
	A1	0.00837	0.00812	0.01462
	A2	0.02504	0.02479	0.02968
	A2	0.00841	0.00812	0.01313
	B1	0.01651	0.01651	0.02308
	B1	0.00447	0.00445	0.01100
	B2	0.01982	0.01973	0.02441
	B2	0.00476	0.00457	0.00958
	C1	0.00903	0.00934	0.01583
	C1	0.00058	0.00088	0.00735
	C2	0.01119	0.01120	0.01649
	C2	0.00053	0.00052	0.00577

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)**	0.00126	0.00127	0.00125
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00157	-0.00165	-0.00163
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00127	0.00127	0.00125
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00155	-0.00165	-0.00163
	(A2 * B1 * B2 * !C1 * !Y)	0.00127	0.00127	0.00125
	(A2 * B1 * B2 * !C1 * !Y)	-0.00155	-0.00165	-0.00163
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00129	0.00127	0.00125
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00148	-0.00159	-0.00160
	(A2 * !B1 * C1 * C2 * !Y)	0.00130	0.00127	0.00125
	(A2 * !B1 * C1 * C2 * !Y)	-0.00148	-0.00160	-0.00160
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00119	0.00119	0.00119
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00168	-0.00169	-0.00168
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00119	0.00119	0.00119
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00168	-0.00169	-0.00168
	(!A2 * B1 * B2 * !C1 * !Y)	0.00119	0.00119	0.00119
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00168	-0.00169	-0.00168
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00119	0.00120	0.00119
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00168	-0.00169	-0.00168
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00044	0.00044	0.00043
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00191	-0.00191	-0.00194
	(!A2 * B1 * !B2 * !C1 * Y)	0.00044	0.00044	0.00043
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00191	-0.00191	-0.00194
	(!A2 * !B1 * C1 * C2 * !Y)	0.00119	0.00120	0.00119
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00168	-0.00169	-0.00168
	(!A2 * !B1 * C1 * !C2 * Y)	0.00044	0.00044	0.00043
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00191	-0.00191	-0.00194
	(!A2 * !B1 * !C1 * Y)	0.00044	0.00044	0.00043
	(!A2 * !B1 * !C1 * Y)	-0.00191	-0.00191	-0.00194

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00259	0.00262	0.00259
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00315	-0.00333	-0.00331
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00261	0.00262	0.00259
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00311	-0.00333	-0.00332
	(A2 * B1 * B2 * !C1 * !Y)	0.00261	0.00262	0.00259
	(A2 * B1 * B2 * !C1 * !Y)	-0.00311	-0.00333	-0.00332
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00267	0.00263	0.00260
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00296	-0.00325	-0.00323
	(A2 * !B1 * C1 * C2 * !Y)	0.00268	0.00263	0.00260
	(A2 * !B1 * C1 * C2 * !Y)	-0.00295	-0.00325	-0.00323
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00248	0.00250	0.00249
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00340	-0.00342	-0.00341
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00249	0.00249	0.00249
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00340	-0.00341	-0.00341
	(!A2 * B1 * B2 * !C1 * !Y)	0.00249	0.00250	0.00250
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00342	-0.00342	-0.00341
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00249	0.00250	0.00250
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00342	-0.00342	-0.00341
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00088	0.00087	0.00084
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00401	-0.00402	-0.00406
	(!A2 * B1 * !B2 * !C1 * Y)	0.00088	0.00087	0.00084
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00401	-0.00402	-0.00406
	(!A2 * !B1 * C1 * C2 * !Y)	0.00250	0.00250	0.00250
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00342	-0.00342	-0.00341
	(!A2 * !B1 * C1 * !C2 * Y)	0.00088	0.00087	0.00084
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00401	-0.00402	-0.00406
	(!A2 * !B1 * !C1 * Y)	0.00088	0.00087	0.00084
	(!A2 * !B1 * !C1 * Y)	-0.00401	-0.00402	-0.00406

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)	-0.00126	-0.00126	-0.00125
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00164	0.00165	0.00163
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00126	-0.00126	-0.00125
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00164	0.00165	0.00163
	(A2 * B1 * B2 * !C1 * !Y)	-0.00126	-0.00126	-0.00125
	(A2 * B1 * B2 * !C1 * !Y)	0.00164	0.00165	0.00163
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00125	-0.00125	-0.00125
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00160	0.00159	0.00160
	(A2 * !B1 * C1 * C2 * !Y)	-0.00125	-0.00125	-0.00125
	(A2 * !B1 * C1 * C2 * !Y)	0.00160	0.00160	0.00160
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00117	-0.00119	-0.00119
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00169	0.00169	0.00169
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00117	-0.00119	-0.00119
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00169	0.00169	0.00169
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00116	-0.00119	-0.00119
	(!A2 * B1 * B2 * !C1 * !Y)	0.00168	0.00169	0.00169
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00116	-0.00120	-0.00119
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00169	0.00170	0.00169
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00042	-0.00043	-0.00042
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00194	0.00197	0.00194
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00042	-0.00043	-0.00042
	(!A2 * B1 * !B2 * !C1 * Y)	0.00194	0.00197	0.00194
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00116	-0.00120	-0.00119
	(!A2 * !B1 * C1 * C2 * !Y)	0.00169	0.00170	0.00169
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * C1 * !C2 * Y)	0.00193	0.00197	0.00194
	(!A2 * !B1 * !C1 * Y)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * !C1 * Y)	0.00193	0.00197	0.00194

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00259	-0.00260	-0.00259
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00332	0.00333	0.00331
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00259	-0.00259	-0.00259
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00332	0.00333	0.00332
	(A2 * B1 * B2 * !C1 * !Y)	-0.00259	-0.00259	-0.00259
	(A2 * B1 * B2 * !C1 * !Y)	0.00332	0.00333	0.00332
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00258	-0.00259	-0.00258
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00322	0.00325	0.00323
	(A2 * !B1 * C1 * C2 * !Y)	-0.00258	-0.00259	-0.00258
	(A2 * !B1 * C1 * C2 * !Y)	0.00321	0.00325	0.00323
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00240	-0.00249	-0.00249
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00341	0.00342	0.00342
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00239	-0.00249	-0.00249
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00340	0.00346	0.00342
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00241	-0.00250	-0.00250
	(!A2 * B1 * B2 * !C1 * !Y)	0.00343	0.00346	0.00342
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00240	-0.00250	-0.00250
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00344	0.00345	0.00343
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00083	-0.00083	-0.00082
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00408	0.00413	0.00407
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00083	-0.00083	-0.00082
	(!A2 * B1 * !B2 * !C1 * Y)	0.00408	0.00413	0.00407
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00240	-0.00250	-0.00250
	(!A2 * !B1 * C1 * C2 * !Y)	0.00344	0.00346	0.00343
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00083	-0.00083	-0.00082
	(!A2 * !B1 * C1 * !C2 * Y)	0.00408	0.00413	0.00407
	(!A2 * !B1 * !C1 * Y)	-0.00083	-0.00083	-0.00082
	(!A2 * !B1 * !C1 * Y)	0.00408	0.00413	0.00407

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)	0.00131	0.00131	0.00130
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00155	-0.00165	-0.00163
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00131	0.00132	0.00130
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00154	-0.00164	-0.00163
	(A1 * B1 * B2 * !C1 * !Y)	0.00131	0.00132	0.00130
	(A1 * B1 * B2 * !C1 * !Y)	-0.00154	-0.00164	-0.00163
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00134	0.00132	0.00130
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00148	-0.00159	-0.00160
	(A1 * !B1 * C1 * C2 * !Y)	0.00134	0.00132	0.00130
	(A1 * !B1 * C1 * C2 * !Y)	-0.00148	-0.00159	-0.00160
	(!A1 * B1 * B2 * !Y)	0.00124	0.00125	0.00124
	(!A1 * B1 * B2 * !Y)	-0.00167	-0.00168	-0.00168
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00124	0.00125	0.00124
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00167	-0.00168	-0.00168
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00124	0.00125	0.00124
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00167	-0.00168	-0.00168
	(!A1 * B1 * !B2 * !C1 * Y)	0.00124	0.00125	0.00124
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00167	-0.00168	-0.00168
	(!A1 * !B1 * C1 * !C2 * Y)	0.00124	0.00125	0.00124
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00167	-0.00168	-0.00168
	(!A1 * !B1 * !C1 * Y)	0.00124	0.00125	0.00124
	(!A1 * !B1 * !C1 * Y)	-0.00167	-0.00168	-0.00168

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00244	0.00246	0.00244
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00294	-0.00307	-0.00309
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00245	0.00247	0.00244
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00292	-0.00312	-0.00309
	(A1 * B1 * B2 * !C1 * !Y)	0.00245	0.00247	0.00244
	(A1 * B1 * B2 * !C1 * !Y)	-0.00292	-0.00312	-0.00309
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00250	0.00247	0.00244
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00280	-0.00304	-0.00302
	(A1 * !B1 * C1 * C2 * !Y)	0.00251	0.00247	0.00244
	(A1 * !B1 * C1 * C2 * !Y)	-0.00280	-0.00303	-0.00302
	(!A1 * B1 * B2 * !Y)	0.00233	0.00237	0.00234
	(!A1 * B1 * B2 * !Y)	-0.00316	-0.00319	-0.00317
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00234	0.00236	0.00235
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00316	-0.00317	-0.00316
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00225	0.00228	0.00226
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00324	-0.00326	-0.00325
	(!A1 * B1 * !B2 * !C1 * Y)	0.00225	0.00228	0.00226
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00324	-0.00326	-0.00325
	(!A1 * !B1 * C1 * !C2 * Y)	0.00225	0.00228	0.00226
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00324	-0.00326	-0.00325
	(!A1 * !B1 * !C1 * Y)	0.00225	0.00228	0.00226
	(!A1 * !B1 * !C1 * Y)	-0.00324	-0.00326	-0.00325

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

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

	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00163	0.00165	0.00163
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00164	0.00164	0.00163
	(A1 * B1 * B2 * !C1 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * B1 * B2 * !C1 * !Y)	0.00164	0.00164	0.00163
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00130	-0.00130	-0.00129
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00160	0.00159	0.00160
	(A1 * !B1 * C1 * C2 * !Y)	-0.00130	-0.00130	-0.00129
	(A1 * !B1 * C1 * C2 * !Y)	0.00160	0.00159	0.00160
	(!A1 * B1 * B2 * !Y)	-0.00121	-0.00125	-0.00124
sky130_fd_sc_hs__a222oi_1	**(!A1 * B1 * B2 * !Y)**	0.00167	0.00170	0.00168
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00122	-0.00125	-0.00124
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00169	0.00170	0.00169
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00116	-0.00124	-0.00124
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00173	0.00170	0.00168
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00116	-0.00124	-0.00124
	(!A1 * B1 * !B2 * !C1 * Y)	0.00173	0.00170	0.00168
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00116	-0.00124	-0.00124
	(!A1 * !B1 * C1 * !C2 * Y)	0.00173	0.00170	0.00168
	(!A1 * !B1 * !C1 * Y)	-0.00116	-0.00124	-0.00124
	(!A1 * !B1 * !C1 * Y)	0.00173	0.00170	0.00168

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00244	-0.00242	-0.00243
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00310	0.00307	0.00309
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00243	-0.00245	-0.00243
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00310	0.00314	0.00309
	(A1 * B1 * B2 * !C1 * !Y)	-0.00243	-0.00245	-0.00243
	(A1 * B1 * B2 * !C1 * !Y)	0.00310	0.00314	0.00309
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00242	-0.00244	-0.00242
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00300	0.00304	0.00302
	(A1 * !B1 * C1 * C2 * !Y)	-0.00242	-0.00244	-0.00242
	(A1 * !B1 * C1 * C2 * !Y)	0.00300	0.00303	0.00302
	(!A1 * B1 * B2 * !Y)	-0.00226	-0.00233	-0.00234
	(!A1 * B1 * B2 * !Y)	0.00316	0.00319	0.00318
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00225	-0.00233	-0.00235
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00317	0.00319	0.00318
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00209	-0.00226	-0.00226
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00336	0.00329	0.00326
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00209	-0.00226	-0.00226
	(!A1 * B1 * !B2 * !C1 * Y)	0.00336	0.00329	0.00326
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00209	-0.00226	-0.00226
	(!A1 * !B1 * C1 * !C2 * Y)	0.00336	0.00329	0.00326
	(!A1 * !B1 * !C1 * Y)	-0.00209	-0.00226	-0.00226
	(!A1 * !B1 * !C1 * Y)	0.00336	0.00329	0.00326

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)**	0.00128	0.00129	0.00127
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00117	-0.00119	-0.00118
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00125	0.00127	0.00125
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00092	-0.00094	-0.00093
	(A1 * A2 * B2 * !C1 * !Y)	0.00125	0.00127	0.00125
	(A1 * A2 * B2 * !C1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00120	0.00122	0.00120
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00112	-0.00113	-0.00112
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00119	0.00120	0.00120
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00092	-0.00093	-0.00093
	(A1 * A2 * !B2 * !C1 * !Y)	0.00120	0.00120	0.00120
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00148	0.00127	0.00125
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00136	-0.00162	-0.00162
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00119	0.00119	0.00119
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00165	-0.00165	-0.00165
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00041	0.00041	0.00040
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00189	-0.00191	-0.00192
	(A1 * !A2 * !B2 * !C1 * Y)	0.00041	0.00041	0.00040
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00189	-0.00191	-0.00192
	(!A1 * B2 * C1 * C2 * !Y)	0.00146	0.00127	0.00125
	(!A1 * B2 * C1 * C2 * !Y)	-0.00136	-0.00162	-0.00162
	(!A1 * !B2 * C1 * C2 * !Y)	0.00119	0.00119	0.00119
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00165	-0.00165	-0.00165
	(!A1 * !B2 * C1 * !C2 * Y)	0.00041	0.00041	0.00040
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00189	-0.00191	-0.00192
	(!A1 * !B2 * !C1 * Y)	0.00041	0.00041	0.00040
	(!A1 * !B2 * !C1 * Y)	-0.00189	-0.00191	-0.00192

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00268	0.00271	0.00263
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00238	-0.00237	-0.00238
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00260	0.00264	0.00260
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00193	-0.00196	-0.00193
	(A1 * A2 * B2 * !C1 * !Y)	0.00260	0.00265	0.00260
	(A1 * A2 * B2 * !C1 * !Y)	-0.00193	-0.00196	-0.00193
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00252	0.00256	0.00252
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00225	-0.00230	-0.00226
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00250	0.00252	0.00251
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00191	-0.00192	-0.00192
	(A1 * A2 * !B2 * !C1 * !Y)	0.00251	0.00252	0.00251
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00193	-0.00193	-0.00192
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00310	0.00261	0.00258
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00277	-0.00331	-0.00334
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00248	0.00249	0.00249
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00340	-0.00340	-0.00340
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00084	0.00085	0.00081
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00401	-0.00403	-0.00407
	(A1 * !A2 * !B2 * !C1 * Y)	0.00084	0.00085	0.00081
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00401	-0.00403	-0.00407
	(!A1 * B2 * C1 * C2 * !Y)	0.00309	0.00260	0.00258
	(!A1 * B2 * C1 * C2 * !Y)	-0.00278	-0.00331	-0.00334
	(!A1 * !B2 * C1 * C2 * !Y)	0.00248	0.00249	0.00249
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00340	-0.00340	-0.00340
	(!A1 * !B2 * C1 * !C2 * Y)	0.00084	0.00085	0.00081
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00401	-0.00403	-0.00407
	(!A1 * !B2 * !C1 * Y)	0.00084	0.00085	0.00081
	(!A1 * !B2 * !C1 * Y)	-0.00401	-0.00403	-0.00407

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)	-0.00126	-0.00127	-0.00126
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00117	0.00119	0.00118
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00116	-0.00117	-0.00119
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00101	0.00102	0.00099
	(A1 * A2 * B2 * !C1 * !Y)	-0.00116	-0.00117	-0.00119
	(A1 * A2 * B2 * !C1 * !Y)	0.00101	0.00102	0.00099
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00118	-0.00122	-0.00120
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00112	0.00113	0.00112
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00117	-0.00120	-0.00120
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00093	0.00093	0.00093
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00116	-0.00120	-0.00120
	(A1 * A2 * !B2 * !C1 * !Y)	0.00093	0.00093	0.00093
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00124	-0.00124	-0.00123
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00162	0.00162	0.00162
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00115	-0.00119	-0.00119
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00165	0.00166	0.00165
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00039	-0.00040	-0.00039
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00192	0.00195	0.00193
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00039	-0.00040	-0.00039
	(A1 * !A2 * !B2 * !C1 * Y)	0.00192	0.00195	0.00193
	(!A1 * B2 * C1 * C2 * !Y)	-0.00124	-0.00124	-0.00123
	(!A1 * B2 * C1 * C2 * !Y)	0.00162	0.00162	0.00162
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00115	-0.00119	-0.00119
	(!A1 * !B2 * C1 * C2 * !Y)	0.00165	0.00166	0.00165
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00039	-0.00040	-0.00039
	(!A1 * !B2 * C1 * !C2 * Y)	0.00192	0.00195	0.00193
	(!A1 * !B2 * !C1 * Y)	-0.00039	-0.00040	-0.00039
	(!A1 * !B2 * !C1 * Y)	0.00192	0.00195	0.00193

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00261	-0.00260	-0.00261
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00238	0.00237	0.00238
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00245	-0.00246	-0.00249
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00204	0.00204	0.00204
	(A1 * A2 * B2 * !C1 * !Y)	-0.00245	-0.00248	-0.00249
	(A1 * A2 * B2 * !C1 * !Y)	0.00204	0.00207	0.00204
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00243	-0.00253	-0.00252
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00225	0.00230	0.00226
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00242	-0.00252	-0.00251
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00193	0.00194	0.00192
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00242	-0.00252	-0.00251
	(A1 * A2 * !B2 * !C1 * !Y)	0.00193	0.00194	0.00192
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00256	-0.00257	-0.00255
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00331	0.00334	0.00334
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00240	-0.00249	-0.00249
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00342	0.00343	0.00341
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00080	-0.00081	-0.00079
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00409	0.00412	0.00407
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00080	-0.00081	-0.00079
	(A1 * !A2 * !B2 * !C1 * Y)	0.00409	0.00412	0.00407
	(!A1 * B2 * C1 * C2 * !Y)	-0.00256	-0.00257	-0.00255
	(!A1 * B2 * C1 * C2 * !Y)	0.00332	0.00335	0.00334
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00239	-0.00249	-0.00249
	(!A1 * !B2 * C1 * C2 * !Y)	0.00342	0.00343	0.00341
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00080	-0.00081	-0.00079
	(!A1 * !B2 * C1 * !C2 * Y)	0.00408	0.00412	0.00407
	(!A1 * !B2 * !C1 * Y)	-0.00080	-0.00081	-0.00079
	(!A1 * !B2 * !C1 * Y)	0.00408	0.00413	0.00407

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)	0.00141	0.00141	0.00138
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00119	-0.00119	-0.00118
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00138	0.00138	0.00136
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00094	-0.00094	-0.00093
	(A1 * A2 * B1 * !C1 * !Y)	0.00137	0.00138	0.00136
	(A1 * A2 * B1 * !C1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00132	0.00133	0.00132
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00113	-0.00113	-0.00112
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * !B1 * !C1 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00161	0.00139	0.00136
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00136	-0.00163	-0.00163
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00129	0.00131	0.00130
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00115	0.00116	0.00115
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00180	-0.00181	-0.00180
	(A1 * !A2 * !B1 * !C1 * Y)	0.00115	0.00116	0.00115
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00180	-0.00181	-0.00180
	(!A1 * B1 * C1 * C2 * !Y)	0.00161	0.00139	0.00136
	(!A1 * B1 * C1 * C2 * !Y)	-0.00136	-0.00163	-0.00163
	(!A1 * !B1 * C1 * !C2 * Y)	0.00115	0.00116	0.00115
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00180	-0.00181	-0.00180
	(!A1 * !B1 * !C1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !B1 * !C1 * Y)	-0.00180	-0.00181	-0.00180

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00261	0.00264	0.00256
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00221	-0.00221	-0.00221
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00254	0.00258	0.00253
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00174	-0.00177	-0.00175
	(A1 * A2 * B1 * !C1 * !Y)	0.00255	0.00258	0.00253
	(A1 * A2 * B1 * !C1 * !Y)	-0.00175	-0.00177	-0.00175
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00245	0.00246	0.00245
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00209	-0.00210	-0.00210
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00244	0.00248	0.00243
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00174	-0.00175	-0.00174
	(A1 * A2 * !B1 * !C1 * !Y)	0.00244	0.00248	0.00243
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00174	-0.00175	-0.00174
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00307	0.00256	0.00252
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00250	-0.00308	-0.00311
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00241	0.00244	0.00242
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00316	-0.00318	-0.00316
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00230	0.00233	0.00231
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00327	-0.00329	-0.00328
	(A1 * !A2 * !B1 * !C1 * Y)	0.00230	0.00233	0.00231
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00327	-0.00329	-0.00328
	(!A1 * B1 * C1 * C2 * !Y)	0.00306	0.00256	0.00252
	(!A1 * B1 * C1 * C2 * !Y)	-0.00250	-0.00309	-0.00311
	(!A1 * !B1 * C1 * !C2 * Y)	0.00230	0.00233	0.00231
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00327	-0.00330	-0.00328
	(!A1 * !B1 * !C1 * Y)	0.00230	0.00233	0.00231
	(!A1 * !B1 * !C1 * Y)	-0.00327	-0.00330	-0.00328

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)	-0.00138	-0.00138	-0.00137
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00119	0.00119	0.00118
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00127	-0.00129	-0.00131
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00101	0.00102	0.00099
	(A1 * A2 * B1 * !C1 * !Y)	-0.00127	-0.00129	-0.00131
	(A1 * A2 * B1 * !C1 * !Y)	0.00101	0.00102	0.00099
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00129	-0.00133	-0.00132
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00113	0.00113	0.00112
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00128	-0.00132	-0.00131
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00094	0.00094	0.00093
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00128	-0.00132	-0.00131
	(A1 * A2 * !B1 * !C1 * !Y)	0.00094	0.00094	0.00093
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00135	-0.00135	-0.00134
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00163	0.00163	0.00163
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00127	-0.00131	-0.00130
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00166	0.00168	0.00166
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00108	-0.00115	-0.00115
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00187	0.00183	0.00181
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00108	-0.00115	-0.00115
	(A1 * !A2 * !B1 * !C1 * Y)	0.00187	0.00183	0.00181
	(!A1 * B1 * C1 * C2 * !Y)	-0.00135	-0.00135	-0.00134
	(!A1 * B1 * C1 * C2 * !Y)	0.00163	0.00163	0.00163
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00108	-0.00115	-0.00115
	(!A1 * !B1 * C1 * !C2 * Y)	0.00187	0.00183	0.00181
	(!A1 * !B1 * !C1 * Y)	-0.00108	-0.00115	-0.00115
	(!A1 * !B1 * !C1 * Y)	0.00187	0.00183	0.00181

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00255	-0.00254	-0.00255
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00221	0.00221	0.00221
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00237	-0.00240	-0.00242
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00186	0.00188	0.00185
	(A1 * A2 * B1 * !C1 * !Y)	-0.00237	-0.00240	-0.00242
	(A1 * A2 * B1 * !C1 * !Y)	0.00186	0.00188	0.00185
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00236	-0.00244	-0.00245
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00209	0.00210	0.00210
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00235	-0.00242	-0.00243
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00174	0.00175	0.00174
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00235	-0.00242	-0.00243
	(A1 * A2 * !B1 * !C1 * !Y)	0.00174	0.00175	0.00174
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00251	-0.00250	-0.00249
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00311	0.00310	0.00311
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00233	-0.00242	-0.00242
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00317	0.00322	0.00318
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00213	-0.00231	-0.00231
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00340	0.00331	0.00328
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00213	-0.00231	-0.00231
	(A1 * !A2 * !B1 * !C1 * Y)	0.00340	0.00331	0.00328
	(!A1 * B1 * C1 * C2 * !Y)	-0.00249	-0.00251	-0.00249
	(!A1 * B1 * C1 * C2 * !Y)	0.00308	0.00311	0.00311
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00213	-0.00231	-0.00231
	(!A1 * !B1 * C1 * !C2 * Y)	0.00340	0.00331	0.00328
	(!A1 * !B1 * !C1 * Y)	-0.00213	-0.00231	-0.00231
	(!A1 * !B1 * !C1 * Y)	0.00340	0.00331	0.00328

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)	0.00149	0.00152	0.00150
	(A1 * B1 * B2 * C2 * !Y)	-0.00082	-0.00083	-0.00082
	(A1 * B1 * B2 * !C2 * !Y)	0.00144	0.00145	0.00144
	(A1 * B1 * B2 * !C2 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00149	0.00152	0.00150
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00082	-0.00083	-0.00082
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00145	0.00147	0.00145
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * !B1 * C2 * !Y)	0.00149	0.00152	0.00150
	(A1 * A2 * !B1 * C2 * !Y)	-0.00082	-0.00083	-0.00082
	(A1 * A2 * !B1 * !C2 * !Y)	0.00145	0.00145	0.00144
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00046	0.00046	0.00045
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00195	-0.00196	-0.00197
	(A1 * !A2 * !B1 * !C2 * Y)	0.00046	0.00046	0.00045
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00195	-0.00196	-0.00197
	(!A1 * B1 * B2 * C2 * !Y)	0.00149	0.00152	0.00150
	(!A1 * B1 * B2 * C2 * !Y)	-0.00082	-0.00083	-0.00082
	(!A1 * B1 * B2 * !C2 * !Y)	0.00145	0.00145	0.00144
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00082	-0.00082	-0.00082
	(!A1 * B1 * !B2 * !C2 * Y)	0.00046	0.00046	0.00045
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00195	-0.00196	-0.00197
	(!A1 * !B1 * !C2 * Y)	0.00046	0.00046	0.00045
	(!A1 * !B1 * !C2 * Y)	-0.00195	-0.00196	-0.00197

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00264	0.00268	0.00264
	(A1 * B1 * B2 * C2 * !Y)	-0.00160	-0.00162	-0.00160
	(A1 * B1 * B2 * !C2 * !Y)	0.00252	0.00254	0.00253
	(A1 * B1 * B2 * !C2 * !Y)	-0.00159	-0.00160	-0.00159
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00264	0.00268	0.00264
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00160	-0.00162	-0.00159
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00253	0.00256	0.00254
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00158	-0.00160	-0.00159
	(A1 * A2 * !B1 * C2 * !Y)	0.00265	0.00269	0.00264
	(A1 * A2 * !B1 * C2 * !Y)	-0.00161	-0.00162	-0.00159
	(A1 * A2 * !B1 * !C2 * !Y)	0.00253	0.00257	0.00253
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00159	-0.00160	-0.00159
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00082	0.00082	0.00079
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00364	-0.00364	-0.00368
	(A1 * !A2 * !B1 * !C2 * Y)	0.00082	0.00082	0.00079
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00364	-0.00365	-0.00368
	(!A1 * B1 * B2 * C2 * !Y)	0.00265	0.00269	0.00264
	(!A1 * B1 * B2 * C2 * !Y)	-0.00161	-0.00163	-0.00160
	(!A1 * B1 * B2 * !C2 * !Y)	0.00253	0.00257	0.00253
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !B2 * !C2 * Y)	0.00082	0.00082	0.00079
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00364	-0.00365	-0.00368
	(!A1 * !B1 * !C2 * Y)	0.00082	0.00082	0.00079
	(!A1 * !B1 * !C2 * Y)	-0.00364	-0.00365	-0.00368

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)**	-0.00138	-0.00139	-0.00148
	(A1 * B1 * B2 * C2 * !Y)	0.00093	0.00093	0.00084
	(A1 * B1 * B2 * !C2 * !Y)	-0.00142	-0.00145	-0.00144
	(A1 * B1 * B2 * !C2 * !Y)	0.00082	0.00082	0.00082
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00120	-0.00121	-0.00144
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00105	0.00105	0.00087
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00141	-0.00145	-0.00145
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00082	0.00082	0.00082
	(A1 * A2 * !B1 * C2 * !Y)	-0.00120	-0.00121	-0.00144
	(A1 * A2 * !B1 * C2 * !Y)	0.00105	0.00105	0.00087
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00141	-0.00145	-0.00144
	(A1 * A2 * !B1 * !C2 * !Y)	0.00082	0.00082	0.00082
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00045	-0.00044	-0.00044
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00197	0.00197	0.00197
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00045	-0.00044	-0.00044
	(A1 * !A2 * !B1 * !C2 * Y)	0.00197	0.00197	0.00197
	(!A1 * B1 * B2 * C2 * !Y)	-0.00138	-0.00139	-0.00148
	(!A1 * B1 * B2 * C2 * !Y)	0.00093	0.00093	0.00084
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00141	-0.00145	-0.00144
	(!A1 * B1 * B2 * !C2 * !Y)	0.00082	0.00082	0.00082
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00045	-0.00044	-0.00044
	(!A1 * B1 * !B2 * !C2 * Y)	0.00197	0.00197	0.00197
	(!A1 * !B1 * !C2 * Y)	-0.00045	-0.00044	-0.00044
	(!A1 * !B1 * !C2 * Y)	0.00197	0.00197	0.00197

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00240	-0.00243	-0.00261
	(A1 * B1 * B2 * C2 * !Y)	0.00179	0.00180	0.00164
	(A1 * B1 * B2 * !C2 * !Y)	-0.00246	-0.00254	-0.00253
	(A1 * B1 * B2 * !C2 * !Y)	0.00159	0.00160	0.00159
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00210	-0.00214	-0.00255
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00199	0.00200	0.00168
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00245	-0.00256	-0.00254
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00158	0.00160	0.00159
	(A1 * A2 * !B1 * C2 * !Y)	-0.00210	-0.00214	-0.00255
	(A1 * A2 * !B1 * C2 * !Y)	0.00199	0.00200	0.00168
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00246	-0.00257	-0.00253
	(A1 * A2 * !B1 * !C2 * !Y)	0.00160	0.00160	0.00159
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00367	0.00368	0.00369
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !B1 * !C2 * Y)	0.00367	0.00368	0.00369
	(!A1 * B1 * B2 * C2 * !Y)	-0.00240	-0.00243	-0.00261
	(!A1 * B1 * B2 * C2 * !Y)	0.00180	0.00181	0.00165
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00246	-0.00257	-0.00253
	(!A1 * B1 * B2 * !C2 * !Y)	0.00160	0.00161	0.00160
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00076	-0.00077	-0.00077
	(!A1 * B1 * !B2 * !C2 * Y)	0.00367	0.00368	0.00369
	(!A1 * !B1 * !C2 * Y)	-0.00076	-0.00077	-0.00077
	(!A1 * !B1 * !C2 * Y)	0.00367	0.00368	0.00369

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)**	0.00157	0.00157	0.00156
	(A1 * B1 * B2 * C1 * !Y)	-0.00084	-0.00084	-0.00083
	(A1 * B1 * B2 * !C1 * !Y)	0.00150	0.00151	0.00150
	(A1 * B1 * B2 * !C1 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00157	0.00158	0.00156
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00084	-0.00085	-0.00083
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00150	0.00151	0.00150
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * !B1 * C1 * !Y)	0.00157	0.00158	0.00156
	(A1 * A2 * !B1 * C1 * !Y)	-0.00084	-0.00085	-0.00083
	(A1 * A2 * !B1 * !C1 * !Y)	0.00150	0.00151	0.00150
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00117	0.00119	0.00117
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !B1 * !C1 * Y)	0.00117	0.00119	0.00117
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * B1 * B2 * C1 * !Y)	0.00157	0.00158	0.00156
	(!A1 * B1 * B2 * C1 * !Y)	-0.00084	-0.00085	-0.00084
	(!A1 * B1 * B2 * !C1 * !Y)	0.00150	0.00151	0.00150
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A1 * B1 * !B2 * !C1 * Y)	0.00117	0.00119	0.00117
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * Y)	0.00117	0.00119	0.00117
	(!A1 * !B1 * !C1 * Y)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00313	0.00317	0.00312
	(A1 * B1 * B2 * C1 * !Y)	-0.00167	-0.00168	-0.00166
	(A1 * B1 * B2 * !C1 * !Y)	0.00300	0.00304	0.00301
	(A1 * B1 * B2 * !C1 * !Y)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00313	0.00317	0.00312
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00167	-0.00168	-0.00166
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00301	0.00307	0.00301
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * !B1 * C1 * !Y)	0.00313	0.00318	0.00312
	(A1 * A2 * !B1 * C1 * !Y)	-0.00167	-0.00169	-0.00166
	(A1 * A2 * !B1 * !C1 * !Y)	0.00301	0.00304	0.00302
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00164	-0.00166	-0.00165
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00233	0.00236	0.00234
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00368	-0.00370	-0.00368
	(A1 * !A2 * !B1 * !C1 * Y)	0.00233	0.00236	0.00234
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00368	-0.00370	-0.00368
	(!A1 * B1 * B2 * C1 * !Y)	0.00313	0.00318	0.00312
	(!A1 * B1 * B2 * C1 * !Y)	-0.00167	-0.00169	-0.00166
	(!A1 * B1 * B2 * !C1 * !Y)	0.00301	0.00304	0.00302
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00165	-0.00166	-0.00166
	(!A1 * B1 * !B2 * !C1 * Y)	0.00233	0.00236	0.00234
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00368	-0.00370	-0.00368
	(!A1 * !B1 * !C1 * Y)	0.00233	0.00237	0.00234
	(!A1 * !B1 * !C1 * Y)	-0.00368	-0.00371	-0.00368

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)**	-0.00143	-0.00145	-0.00154
	(A1 * B1 * B2 * C1 * !Y)	0.00094	0.00094	0.00086
	(A1 * B1 * B2 * !C1 * !Y)	-0.00148	-0.00150	-0.00150
	(A1 * B1 * B2 * !C1 * !Y)	0.00084	0.00083	0.00083
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00126	-0.00128	-0.00150
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00106	0.00106	0.00089
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00148	-0.00150	-0.00150
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00084	0.00083	0.00083
	(A1 * A2 * !B1 * C1 * !Y)	-0.00126	-0.00128	-0.00150
	(A1 * A2 * !B1 * C1 * !Y)	0.00106	0.00106	0.00089
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00148	-0.00150	-0.00150
	(A1 * A2 * !B1 * !C1 * !Y)	0.00084	0.00083	0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00111	-0.00118	-0.00117
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00191	0.00187	0.00185
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00111	-0.00118	-0.00117
	(A1 * !A2 * !B1 * !C1 * Y)	0.00191	0.00187	0.00185
	(!A1 * B1 * B2 * C1 * !Y)	-0.00143	-0.00145	-0.00154
	(!A1 * B1 * B2 * C1 * !Y)	0.00094	0.00095	0.00086
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00148	-0.00150	-0.00150
	(!A1 * B1 * B2 * !C1 * !Y)	0.00084	0.00083	0.00083
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00111	-0.00118	-0.00117
	(!A1 * B1 * !B2 * !C1 * Y)	0.00191	0.00187	0.00185
	(!A1 * !B1 * !C1 * Y)	-0.00111	-0.00118	-0.00117
	(!A1 * !B1 * !C1 * Y)	0.00191	0.00187	0.00185

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00289	-0.00291	-0.00309
	(A1 * B1 * B2 * C1 * !Y)	0.00186	0.00186	0.00171
	(A1 * B1 * B2 * !C1 * !Y)	-0.00296	-0.00302	-0.00301
	(A1 * B1 * B2 * !C1 * !Y)	0.00166	0.00166	0.00165
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00259	-0.00262	-0.00303
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00206	0.00206	0.00175
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00296	-0.00302	-0.00301
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00166	0.00166	0.00165
	(A1 * A2 * !B1 * C1 * !Y)	-0.00259	-0.00262	-0.00303
	(A1 * A2 * !B1 * C1 * !Y)	0.00206	0.00206	0.00175
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00296	-0.00302	-0.00302
	(A1 * A2 * !B1 * !C1 * !Y)	0.00166	0.00166	0.00165
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00221	-0.00234	-0.00234
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00380	0.00372	0.00369
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00221	-0.00234	-0.00234
	(A1 * !A2 * !B1 * !C1 * Y)	0.00380	0.00372	0.00369
	(!A1 * B1 * B2 * C1 * !Y)	-0.00288	-0.00291	-0.00309
	(!A1 * B1 * B2 * C1 * !Y)	0.00187	0.00187	0.00171
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00296	-0.00302	-0.00302
	(!A1 * B1 * B2 * !C1 * !Y)	0.00167	0.00166	0.00166
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00221	-0.00234	-0.00234
	(!A1 * B1 * !B2 * !C1 * Y)	0.00380	0.00372	0.00369
	(!A1 * !B1 * !C1 * Y)	-0.00221	-0.00234	-0.00234
	(!A1 * !B1 * !C1 * Y)	0.00380	0.00372	0.00369

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00253	0.00258	0.00262	0.00252	0.00260	0.00266	1.06742
sky130_fd_sc_hs__a222o_2	0.00257	0.00242	0.00255	0.00251	0.00257	0.00271	1.82608

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.09794	0.27551
sky130_fd_sc_hs__a222o_2	0.00000	0.12383	0.28171

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)	0.10357	0.68794	6.49323
	A2->X (RR)	0.11099	0.68076	6.47300
	B1->X (RR)	0.09784	0.66535	6.36781
	B2->X (RR)	0.10252	0.65858	6.36719
	C1->X (RR)	0.08705	0.63260	6.31459
	C2->X (RR)	0.09080	0.62820	6.31010
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.12069	0.64948	6.47813
	A2->X (RR)	0.12993	0.62887	6.45591
	B1->X (RR)	0.10877	0.61358	6.37067
	B2->X (RR)	0.11399	0.60286	6.36724
	C1->X (RR)	0.09673	0.58522	6.33426
	C2->X (RR)	0.10114	0.57641	6.31319

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.32884	0.83991	5.11770
	A2->X (FF)	0.35165	0.87003	5.18744
	B1->X (FF)	0.30581	0.83109	5.31091
	B2->X (FF)	0.32149	0.86056	5.38567
	C1->X (FF)	0.22982	0.76428	5.18931
	C2->X (FF)	0.24837	0.79260	5.24320
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.38933	0.87522	4.98861
	A2->X (FF)	0.39672	0.89558	5.06693
	B1->X (FF)	0.36578	0.87219	5.22045
	B2->X (FF)	0.36879	0.87986	5.23119
	C1->X (FF)	0.28830	0.80082	5.03995
	C2->X (FF)	0.31538	0.83541	5.13825

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.01546	0.01530	0.02713
	A1	0.00756	0.00741	0.01939
	A2	0.01639	0.01602	0.02428
	A2	0.00758	0.00722	0.01562
	B1	0.01282	0.01315	0.02395
	B1	0.00568	0.00603	0.01851
	B2	0.01360	0.01377	0.02263
	B2	0.00578	0.00594	0.01631
	C1	0.00775	0.00833	0.02625
	C1	0.00309	0.00367	0.02185
	C2	0.00857	0.00889	0.02496
	C2	0.00313	0.00345	0.01979
sky130_fd_sc_hs__a222o_2	A1	0.01805	0.01848	0.02833
	A1	0.01040	0.01083	0.02100
	A2	0.01894	0.01935	0.02941
	A2	0.01031	0.01074	0.02114
	B1	0.01493	0.01549	0.02729
	B1	0.00775	0.00838	0.02010
	B2	0.01596	0.01642	0.02678
	B2	0.00817	0.00864	0.01939
	C1	0.01228	0.01273	0.02819
	C1	0.00609	0.00660	0.02226
	C2	0.01317	0.01334	0.02714
	C2	0.00605	0.00627	0.01999

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00424	0.00422	0.01345
	A1	0.01353	0.01340	0.02140
	A2	0.00554	0.00511	0.01310
	A2	0.01468	0.01431	0.02195
	B1	0.00419	0.00412	0.01552
	B1	0.01181	0.01163	0.02158
	B2	0.00456	0.00457	0.01586
	B2	0.01342	0.01324	0.02217
	C1	0.00411	0.00509	0.02440
	C1	0.00877	0.00975	0.02838
	C2	0.00446	0.00536	0.02402
	C2	0.00985	0.01074	0.02890
sky130_fd_sc_hs__a222o_2	A1	0.00806	0.00689	0.01635
	A1	0.01608	0.01491	0.02292
	A2	0.00893	0.00794	0.01780
	A2	0.01782	0.01729	0.02572
	B1	0.00792	0.00744	0.01802
	B1	0.01569	0.01513	0.02429
	B2	0.00896	0.00850	0.01890
	B2	0.01679	0.01632	0.02551
	C1	0.00633	0.00739	0.02361
	C1	0.01449	0.01464	0.02902
	C2	0.00672	0.00752	0.02425
	C2	0.01581	0.01568	0.03035

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)**	0.00126	0.00127	0.00126
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00154	-0.00162	-0.00162
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00127	0.00127	0.00126
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00154	-0.00162	-0.00162
	(A2 * B1 * B2 * !C1 * X)	0.00127	0.00127	0.00126
	(A2 * B1 * B2 * !C1 * X)	-0.00154	-0.00161	-0.00162
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00129	0.00128	0.00126
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00147	-0.00159	-0.00158
	(A2 * !B1 * C1 * C2 * X)	0.00129	0.00128	0.00126
	(A2 * !B1 * C1 * C2 * X)	-0.00147	-0.00158	-0.00158
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00120	0.00121	0.00120
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00120	0.00121	0.00120
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * B2 * !C1 * X)	0.00120	0.00121	0.00120
	(!A2 * B1 * B2 * !C1 * X)	-0.00166	-0.00166	-0.00166
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00121	0.00122	0.00121
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00043	0.00043	0.00042
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00192	-0.00191	-0.00194
	(!A2 * B1 * !B2 * !C1 * !X)	0.00043	0.00043	0.00042
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00192	-0.00191	-0.00194
	(!A2 * !B1 * C1 * C2 * X)	0.00121	0.00122	0.00121
	(!A2 * !B1 * C1 * C2 * X)	-0.00166	-0.00167	-0.00166
	(!A2 * !B1 * C1 * !C2 * !X)	0.00043	0.00043	0.00042
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00192	-0.00191	-0.00194
	(!A2 * !B1 * !C1 * !X)	0.00043	0.00043	0.00042
	(!A2 * !B1 * !C1 * !X)	-0.00192	-0.00191	-0.00194

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00136	0.00137	0.00135
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00156	-0.00161	-0.00161
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00137	0.00137	0.00136
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00153	-0.00161	-0.00161
	(A2 * B1 * B2 * !C1 * X)	0.00137	0.00137	0.00136
	(A2 * B1 * B2 * !C1 * X)	-0.00153	-0.00161	-0.00161
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00140	0.00137	0.00136
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00145	-0.00157	-0.00157
	(A2 * !B1 * C1 * C2 * X)	0.00140	0.00137	0.00136
	(A2 * !B1 * C1 * C2 * X)	-0.00145	-0.00157	-0.00157
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00130	0.00132	0.00131
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00163	-0.00164	-0.00164
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00130	0.00132	0.00131
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00163	-0.00164	-0.00163
	(!A2 * B1 * B2 * !C1 * X)	0.00130	0.00132	0.00131
	(!A2 * B1 * B2 * !C1 * X)	-0.00163	-0.00164	-0.00163
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00130	0.00131	0.00130
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00164	-0.00166	-0.00165
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00050	0.00049	0.00047
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00195	-0.00194	-0.00200
	(!A2 * B1 * !B2 * !C1 * !X)	0.00050	0.00049	0.00047
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00195	-0.00194	-0.00200
	(!A2 * !B1 * C1 * C2 * X)	0.00130	0.00131	0.00130
	(!A2 * !B1 * C1 * C2 * X)	-0.00164	-0.00166	-0.00165
	(!A2 * !B1 * C1 * !C2 * !X)	0.00050	0.00050	0.00047
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00195	-0.00196	-0.00200
	(!A2 * !B1 * !C1 * !X)	0.00050	0.00050	0.00047
	(!A2 * !B1 * !C1 * !X)	-0.00195	-0.00196	-0.00200

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)	-0.00125	-0.00126	-0.00126
	(A2 * B1 * B2 * C1 * C2 * X)	0.00161	0.00162	0.00162
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00125	-0.00126	-0.00126
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00161	0.00162	0.00162
	(A2 * B1 * B2 * !C1 * X)	-0.00125	-0.00125	-0.00126
	(A2 * B1 * B2 * !C1 * X)	0.00161	0.00161	0.00162
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00125	-0.00126	-0.00126
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00157	0.00159	0.00158
	(A2 * !B1 * C1 * C2 * X)	-0.00125	-0.00126	-0.00126
	(A2 * !B1 * C1 * C2 * X)	0.00157	0.00158	0.00158
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00118	-0.00121	-0.00120
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00167	0.00167	0.00167
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00118	-0.00121	-0.00120
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00167	0.00167	0.00167
	(!A2 * B1 * B2 * !C1 * X)	-0.00118	-0.00121	-0.00120
	(!A2 * B1 * B2 * !C1 * X)	0.00167	0.00168	0.00167
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00118	-0.00121	-0.00121
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00167	0.00167	0.00167
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00194	0.00197	0.00194
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * B1 * !B2 * !C1 * !X)	0.00194	0.00197	0.00194
	(!A2 * !B1 * C1 * C2 * X)	-0.00118	-0.00121	-0.00121
	(!A2 * !B1 * C1 * C2 * X)	0.00167	0.00168	0.00167
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * C1 * !C2 * !X)	0.00194	0.00197	0.00194
	(!A2 * !B1 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * !C1 * !X)	0.00194	0.00197	0.00194

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00135	-0.00135	-0.00135
	(A2 * B1 * B2 * C1 * C2 * X)	0.00160	0.00161	0.00161
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00135	-0.00136	-0.00135
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00160	0.00161	0.00161
	(A2 * B1 * B2 * !C1 * X)	-0.00135	-0.00136	-0.00135
	(A2 * B1 * B2 * !C1 * X)	0.00160	0.00161	0.00161
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00135	-0.00135	-0.00135
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00156	0.00157	0.00157
	(A2 * !B1 * C1 * C2 * X)	-0.00135	-0.00135	-0.00135
	(A2 * !B1 * C1 * C2 * X)	0.00158	0.00157	0.00157
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00126	-0.00131	-0.00131
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00165	0.00164	0.00164
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00126	-0.00132	-0.00131
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00164	0.00166	0.00164
	(!A2 * B1 * B2 * !C1 * X)	-0.00125	-0.00132	-0.00131
	(!A2 * B1 * B2 * !C1 * X)	0.00164	0.00166	0.00164
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00125	-0.00131	-0.00130
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00165	0.00167	0.00166
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00201	0.00204	0.00201
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * B1 * !B2 * !C1 * !X)	0.00201	0.00204	0.00201
	(!A2 * !B1 * C1 * C2 * X)	-0.00124	-0.00131	-0.00130
	(!A2 * !B1 * C1 * C2 * X)	0.00165	0.00167	0.00166
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * C1 * !C2 * !X)	0.00201	0.00204	0.00201
	(!A2 * !B1 * !C1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * !C1 * !X)	0.00201	0.00204	0.00201

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)	0.00141	0.00142	0.00141
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00150	-0.00157	-0.00157
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00141	0.00142	0.00141
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00148	-0.00157	-0.00157
	(A1 * B1 * B2 * !C1 * X)	0.00141	0.00142	0.00141
	(A1 * B1 * B2 * !C1 * X)	-0.00148	-0.00157	-0.00157
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00144	0.00143	0.00141
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00143	-0.00153	-0.00153
	(A1 * !B1 * C1 * C2 * X)	0.00144	0.00143	0.00141
	(A1 * !B1 * C1 * C2 * X)	-0.00143	-0.00153	-0.00153
	(!A1 * B1 * B2 * X)	0.00135	0.00136	0.00135
	(!A1 * B1 * B2 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00135	0.00136	0.00135
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00115	0.00116	0.00115
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00180	-0.00181	-0.00180
	(!A1 * B1 * !B2 * !C1 * !X)	0.00115	0.00116	0.00115
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(!A1 * !B1 * C1 * !C2 * !X)	0.00115	0.00116	0.00115
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00180	-0.00181	-0.00180
	(!A1 * !B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(!A1 * !B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180

	(A1 * B1 * B2 * C1 * C2 * X)	0.00133	0.00133	0.00132
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00156	-0.00162	-0.00161
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00134	0.00133	0.00132
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00154	-0.00161	-0.00161
	(A1 * B1 * B2 * !C1 * X)	0.00134	0.00133	0.00132
	(A1 * B1 * B2 * !C1 * X)	-0.00154	-0.00161	-0.00161
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00135	0.00134	0.00133
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00145	-0.00157	-0.00157
	(A1 * !B1 * C1 * C2 * X)	0.00135	0.00134	0.00133
	(A1 * !B1 * C1 * C2 * X)	-0.00146	-0.00157	-0.00157
	(!A1 * B1 * B2 * X)	0.00126	0.00128	0.00127
sky130_fd_sc_hs__a222o_2	**(!A1 * B1 * B2 * X)**	-0.00163	-0.00163	-0.00164
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00128	0.00129	0.00128
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00164	-0.00164	-0.00164
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00127	0.00128	0.00126
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00165	-0.00165	-0.00164
	(!A1 * B1 * !B2 * !C1 * !X)	0.00127	0.00128	0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00165	-0.00165	-0.00164
	(!A1 * !B1 * C1 * !C2 * !X)	0.00126	0.00128	0.00126
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !C1 * !X)	0.00126	0.00128	0.00126
	(!A1 * !B1 * !C1 * !X)	-0.00164	-0.00165	-0.00164

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

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

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00140	-0.00141	-0.00141
	(A1 * B1 * B2 * C1 * C2 * X)	0.00156	0.00157	0.00157
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00140	-0.00141	-0.00141
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00156	0.00157	0.00157
	(A1 * B1 * B2 * !C1 * X)	-0.00140	-0.00141	-0.00141
	(A1 * B1 * B2 * !C1 * X)	0.00156	0.00157	0.00157
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00140	-0.00141	-0.00140
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00152	0.00153	0.00153
	(A1 * !B1 * C1 * C2 * X)	-0.00140	-0.00140	-0.00140
	(A1 * !B1 * C1 * C2 * X)	0.00152	0.00153	0.00153
	(!A1 * B1 * B2 * X)	-0.00132	-0.00136	-0.00135
	(!A1 * B1 * B2 * X)	0.00160	0.00162	0.00161
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00132	-0.00136	-0.00135
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00160	0.00163	0.00161
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00107	-0.00115	-0.00115
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00186	0.00183	0.00181
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00107	-0.00115	-0.00115
	(!A1 * B1 * !B2 * !C1 * !X)	0.00186	0.00183	0.00181
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00107	-0.00115	-0.00115
	(!A1 * !B1 * C1 * !C2 * !X)	0.00186	0.00183	0.00181
	(!A1 * !B1 * !C1 * !X)	-0.00107	-0.00115	-0.00115
	(!A1 * !B1 * !C1 * !X)	0.00186	0.00183	0.00181

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00132	-0.00132	-0.00132
	(A1 * B1 * B2 * C1 * C2 * X)	0.00161	0.00162	0.00161
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00132	-0.00132	-0.00132
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00161	0.00161	0.00161
	(A1 * B1 * B2 * !C1 * X)	-0.00132	-0.00132	-0.00132
	(A1 * B1 * B2 * !C1 * X)	0.00161	0.00161	0.00161
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00132	-0.00132	-0.00132
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00156	0.00157	0.00157
	(A1 * !B1 * C1 * C2 * X)	-0.00132	-0.00132	-0.00132
	(A1 * !B1 * C1 * C2 * X)	0.00156	0.00157	0.00157
	(!A1 * B1 * B2 * X)	-0.00122	-0.00126	-0.00127
	(!A1 * B1 * B2 * X)	0.00164	0.00163	0.00164
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00122	-0.00126	-0.00128
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00165	0.00164	0.00165
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00119	-0.00126	-0.00126
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00169	0.00166	0.00165
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00126	-0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	0.00169	0.00166	0.00165
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00118	-0.00126	-0.00126
	(!A1 * !B1 * C1 * !C2 * !X)	0.00168	0.00166	0.00165
	(!A1 * !B1 * !C1 * !X)	-0.00118	-0.00126	-0.00126
	(!A1 * !B1 * !C1 * !X)	0.00168	0.00166	0.00165

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)**	0.00132	0.00136	0.00133
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00120	-0.00123	-0.00121
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00131	0.00133	0.00131
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00098	-0.00100	-0.00098
	(A1 * A2 * B2 * !C1 * X)	0.00131	0.00133	0.00131
	(A1 * A2 * B2 * !C1 * X)	-0.00098	-0.00100	-0.00098
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00126	0.00127	0.00127
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00117	-0.00118	-0.00117
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00126	0.00127	0.00126
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00097	-0.00098	-0.00098
	(A1 * A2 * !B2 * !C1 * X)	0.00126	0.00127	0.00126
	(A1 * A2 * !B2 * !C1 * X)	-0.00097	-0.00098	-0.00098
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00151	0.00133	0.00131
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00145	-0.00169	-0.00168
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00125	0.00126	0.00125
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00171	-0.00172	-0.00171
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00045	0.00045	0.00043
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00199	-0.00200	-0.00202
	(A1 * !A2 * !B2 * !C1 * !X)	0.00045	0.00045	0.00043
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00199	-0.00200	-0.00202
	(!A1 * B2 * C1 * C2 * X)	0.00151	0.00134	0.00131
	(!A1 * B2 * C1 * C2 * X)	-0.00145	-0.00169	-0.00168
	(!A1 * !B2 * C1 * C2 * X)	0.00124	0.00126	0.00125
	(!A1 * !B2 * C1 * C2 * X)	-0.00171	-0.00172	-0.00171
	(!A1 * !B2 * C1 * !C2 * !X)	0.00045	0.00045	0.00043
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00199	-0.00200	-0.00202
	(!A1 * !B2 * !C1 * !X)	0.00045	0.00045	0.00043
	(!A1 * !B2 * !C1 * !X)	-0.00199	-0.00200	-0.00202

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00131	0.00131	0.00129
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00114	-0.00115	-0.00114
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00127	0.00129	0.00127
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * B2 * !C1 * X)	0.00127	0.00129	0.00127
	(A1 * A2 * B2 * !C1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00122	0.00123	0.00122
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00109	-0.00109	-0.00109
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00121	0.00122	0.00121
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00089	-0.00090	-0.00090
	(A1 * A2 * !B2 * !C1 * X)	0.00121	0.00122	0.00121
	(A1 * A2 * !B2 * !C1 * X)	-0.00089	-0.00090	-0.00090
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00153	0.00129	0.00126
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00128	-0.00158	-0.00158
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00120	0.00121	0.00120
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00161	-0.00163	-0.00162
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00042	0.00043	0.00041
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00186	-0.00187	-0.00189
	(A1 * !A2 * !B2 * !C1 * !X)	0.00042	0.00043	0.00041
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00186	-0.00187	-0.00189
	(!A1 * B2 * C1 * C2 * X)	0.00151	0.00129	0.00126
	(!A1 * B2 * C1 * C2 * X)	-0.00129	-0.00158	-0.00158
	(!A1 * !B2 * C1 * C2 * X)	0.00119	0.00120	0.00120
	(!A1 * !B2 * C1 * C2 * X)	-0.00161	-0.00163	-0.00162
	(!A1 * !B2 * C1 * !C2 * !X)	0.00043	0.00044	0.00042
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00185	-0.00186	-0.00188
	(!A1 * !B2 * !C1 * !X)	0.00043	0.00044	0.00042
	(!A1 * !B2 * !C1 * !X)	-0.00185	-0.00186	-0.00188

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)	-0.00131	-0.00132	-0.00132
	(A1 * A2 * B2 * C1 * C2 * X)	0.00120	0.00123	0.00121
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00123	-0.00124	-0.00123
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00105	0.00106	0.00105
	(A1 * A2 * B2 * !C1 * X)	-0.00123	-0.00124	-0.00123
	(A1 * A2 * B2 * !C1 * X)	0.00105	0.00106	0.00105
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00124	-0.00127	-0.00127
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00117	0.00118	0.00117
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00123	-0.00126	-0.00126
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00098	0.00098	0.00098
	(A1 * A2 * !B2 * !C1 * X)	-0.00123	-0.00126	-0.00126
	(A1 * A2 * !B2 * !C1 * X)	0.00098	0.00098	0.00098
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00131	-0.00131	-0.00130
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00168	0.00169	0.00168
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00122	-0.00125	-0.00125
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00172	0.00172	0.00172
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00043	-0.00043	-0.00042
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00203	0.00204	0.00202
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00043	-0.00043	-0.00042
	(A1 * !A2 * !B2 * !C1 * !X)	0.00203	0.00204	0.00202
	(!A1 * B2 * C1 * C2 * X)	-0.00131	-0.00131	-0.00130
	(!A1 * B2 * C1 * C2 * X)	0.00168	0.00169	0.00168
	(!A1 * !B2 * C1 * C2 * X)	-0.00122	-0.00125	-0.00125
	(!A1 * !B2 * C1 * C2 * X)	0.00172	0.00172	0.00172
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00043	-0.00043	-0.00042
	(!A1 * !B2 * C1 * !C2 * !X)	0.00203	0.00204	0.00202
	(!A1 * !B2 * !C1 * !X)	-0.00043	-0.00043	-0.00042
	(!A1 * !B2 * !C1 * !X)	0.00203	0.00204	0.00202

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00128	-0.00129	-0.00128
	(A1 * A2 * B2 * C1 * C2 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00120	-0.00121	-0.00121
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00098	0.00098	0.00096
	(A1 * A2 * B2 * !C1 * X)	-0.00120	-0.00121	-0.00121
	(A1 * A2 * B2 * !C1 * X)	0.00098	0.00098	0.00096
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00119	-0.00122	-0.00122
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00109	0.00109	0.00109
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00119	-0.00122	-0.00121
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00090	0.00090	0.00090
	(A1 * A2 * !B2 * !C1 * X)	-0.00119	-0.00122	-0.00121
	(A1 * A2 * !B2 * !C1 * X)	0.00090	0.00090	0.00090
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00126	-0.00126	-0.00125
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00158	0.00158	0.00158
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00117	-0.00120	-0.00120
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00163	0.00163	0.00162
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00189	0.00191	0.00189
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B2 * !C1 * !X)	0.00189	0.00191	0.00189
	(!A1 * B2 * C1 * C2 * X)	-0.00126	-0.00126	-0.00125
	(!A1 * B2 * C1 * C2 * X)	0.00158	0.00158	0.00158
	(!A1 * !B2 * C1 * C2 * X)	-0.00117	-0.00120	-0.00120
	(!A1 * !B2 * C1 * C2 * X)	0.00163	0.00163	0.00162
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !B2 * C1 * !C2 * !X)	0.00188	0.00191	0.00189
	(!A1 * !B2 * !C1 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !B2 * !C1 * !X)	0.00188	0.00191	0.00189

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)	0.00129	0.00130	0.00127
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00115	-0.00117	-0.00116
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00127	0.00129	0.00126
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00093	-0.00093	-0.00092
	(A1 * A2 * B1 * !C1 * X)	0.00127	0.00129	0.00126
	(A1 * A2 * B1 * !C1 * X)	-0.00093	-0.00093	-0.00092
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00121	0.00123	0.00122
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00112	-0.00113	-0.00111
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00120	0.00122	0.00121
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00091	-0.00092	-0.00092
	(A1 * A2 * !B1 * !C1 * X)	0.00120	0.00122	0.00121
	(A1 * A2 * !B1 * !C1 * X)	-0.00091	-0.00092	-0.00092
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00146	0.00129	0.00126
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00137	-0.00161	-0.00160
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00120	0.00121	0.00120
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00163	-0.00164	-0.00163
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00114	0.00116	0.00115
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00168	-0.00170	-0.00169
	(A1 * !A2 * !B1 * !C1 * !X)	0.00114	0.00116	0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00168	-0.00170	-0.00169
	(!A1 * B1 * C1 * C2 * X)	0.00145	0.00129	0.00126
	(!A1 * B1 * C1 * C2 * X)	-0.00136	-0.00161	-0.00160
	(!A1 * !B1 * C1 * !C2 * !X)	0.00114	0.00116	0.00115
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00168	-0.00169	-0.00169
	(!A1 * !B1 * !C1 * !X)	0.00114	0.00116	0.00115
	(!A1 * !B1 * !C1 * !X)	-0.00168	-0.00169	-0.00169

	(A1 * A2 * B1 * C1 * C2 * X)	0.00133	0.00133	0.00130
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00114	-0.00115	-0.00114
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00129	0.00131	0.00128
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * B1 * !C1 * X)	0.00129	0.00131	0.00128
	(A1 * A2 * B1 * !C1 * X)	-0.00091	-0.00091	-0.00090
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00123	0.00125	0.00124
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00109	-0.00109	-0.00108
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00123	0.00123	0.00123
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00089	-0.00089	-0.00090
	(A1 * A2 * !B1 * !C1 * X)	0.00123	0.00124	0.00123
	(A1 * A2 * !B1 * !C1 * X)	-0.00089	-0.00090	-0.00090
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00153	0.00131	0.00128
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00131	-0.00158	-0.00158
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00121	0.00123	0.00122
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00118	0.00120	0.00119
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !B1 * !C1 * !X)	0.00118	0.00120	0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00162	-0.00163	-0.00162
	(!A1 * B1 * C1 * C2 * X)	0.00154	0.00131	0.00128
	(!A1 * B1 * C1 * C2 * X)	-0.00129	-0.00158	-0.00158
	(!A1 * !B1 * C1 * !C2 * !X)	0.00122	0.00123	0.00122
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * !C1 * !X)	0.00122	0.00123	0.00122
	(!A1 * !B1 * !C1 * !X)	-0.00161	-0.00162	-0.00161

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)	-0.00126	-0.00127	-0.00127
	(A1 * A2 * B1 * C1 * C2 * X)	0.00115	0.00117	0.00116
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00118	-0.00119	-0.00119
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * B1 * !C1 * X)	-0.00118	-0.00119	-0.00119
	(A1 * A2 * B1 * !C1 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00119	-0.00122	-0.00122
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00112	0.00113	0.00111
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00118	-0.00121	-0.00121
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00092	0.00093	0.00092
	(A1 * A2 * !B1 * !C1 * X)	-0.00118	-0.00121	-0.00121
	(A1 * A2 * !B1 * !C1 * X)	0.00092	0.00093	0.00092
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00126	-0.00126	-0.00125
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00160	0.00161	0.00160
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00117	-0.00121	-0.00120
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00164	0.00166	0.00164
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00108	-0.00115	-0.00115
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00176	0.00172	0.00169
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00108	-0.00115	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00176	0.00172	0.00169
	(!A1 * B1 * C1 * C2 * X)	-0.00126	-0.00126	-0.00125
	(!A1 * B1 * C1 * C2 * X)	0.00160	0.00161	0.00160
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00108	-0.00115	-0.00115
	(!A1 * !B1 * C1 * !C2 * !X)	0.00176	0.00172	0.00169
	(!A1 * !B1 * !C1 * !X)	-0.00108	-0.00115	-0.00115
	(!A1 * !B1 * !C1 * !X)	0.00176	0.00172	0.00169

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00129	-0.00130	-0.00129
	(A1 * A2 * B1 * C1 * C2 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00120	-0.00121	-0.00122
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00099	0.00099	0.00096
	(A1 * A2 * B1 * !C1 * X)	-0.00120	-0.00121	-0.00122
	(A1 * A2 * B1 * !C1 * X)	0.00099	0.00099	0.00096
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00121	-0.00124	-0.00124
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00109	0.00109	0.00108
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00120	-0.00123	-0.00123
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00090	0.00090	0.00090
	(A1 * A2 * !B1 * !C1 * X)	-0.00120	-0.00123	-0.00123
	(A1 * A2 * !B1 * !C1 * X)	0.00090	0.00090	0.00090
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00128	-0.00128	-0.00127
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00158	0.00158	0.00158
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00118	-0.00122	-0.00122
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00161	0.00163	0.00162
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00110	-0.00118	-0.00119
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00168	0.00164	0.00162
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00110	-0.00118	-0.00119
	(A1 * !A2 * !B1 * !C1 * !X)	0.00168	0.00164	0.00162
	(!A1 * B1 * C1 * C2 * X)	-0.00128	-0.00128	-0.00127
	(!A1 * B1 * C1 * C2 * X)	0.00158	0.00158	0.00158
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00114	-0.00122	-0.00122
	(!A1 * !B1 * C1 * !C2 * !X)	0.00167	0.00164	0.00162
	(!A1 * !B1 * !C1 * !X)	-0.00114	-0.00122	-0.00122
	(!A1 * !B1 * !C1 * !X)	0.00167	0.00163	0.00162

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)	0.00151	0.00154	0.00152
	(A1 * B1 * B2 * C2 * X)	-0.00086	-0.00088	-0.00087
	(A1 * B1 * B2 * !C2 * X)	0.00146	0.00147	0.00146
	(A1 * B1 * B2 * !C2 * X)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00152	0.00154	0.00152
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00086	-0.00088	-0.00086
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00146	0.00147	0.00147
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * !B1 * C2 * X)	0.00152	0.00154	0.00152
	(A1 * A2 * !B1 * C2 * X)	-0.00086	-0.00088	-0.00086
	(A1 * A2 * !B1 * !C2 * X)	0.00147	0.00148	0.00147
	(A1 * A2 * !B1 * !C2 * X)	-0.00087	-0.00087	-0.00086
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00047	0.00048	0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00202	-0.00202	-0.00204
	(A1 * !A2 * !B1 * !C2 * !X)	0.00047	0.00048	0.00046
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00202	-0.00202	-0.00204
	(!A1 * B1 * B2 * C2 * X)	0.00152	0.00154	0.00152
	(!A1 * B1 * B2 * C2 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * B1 * B2 * !C2 * X)	0.00147	0.00149	0.00147
	(!A1 * B1 * B2 * !C2 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * B1 * !B2 * !C2 * !X)	0.00047	0.00048	0.00046
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00202	-0.00202	-0.00204
	(!A1 * !B1 * !C2 * !X)	0.00047	0.00047	0.00046
	(!A1 * !B1 * !C2 * !X)	-0.00202	-0.00202	-0.00204

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00148	0.00150	0.00148
	(A1 * B1 * B2 * C2 * X)	-0.00081	-0.00083	-0.00081
	(A1 * B1 * B2 * !C2 * X)	0.00142	0.00143	0.00142
	(A1 * B1 * B2 * !C2 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00148	0.00150	0.00148
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00081	-0.00083	-0.00081
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00142	0.00143	0.00142
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B1 * C2 * X)	0.00148	0.00150	0.00148
	(A1 * A2 * !B1 * C2 * X)	-0.00081	-0.00083	-0.00081
	(A1 * A2 * !B1 * !C2 * X)	0.00143	0.00143	0.00143
	(A1 * A2 * !B1 * !C2 * X)	-0.00081	-0.00081	-0.00081
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00047	0.00047	0.00045
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00192	-0.00193	-0.00195
	(A1 * !A2 * !B1 * !C2 * !X)	0.00047	0.00047	0.00045
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00192	-0.00192	-0.00195
	(!A1 * B1 * B2 * C2 * X)	0.00148	0.00150	0.00148
	(!A1 * B1 * B2 * C2 * X)	-0.00081	-0.00083	-0.00081
	(!A1 * B1 * B2 * !C2 * X)	0.00143	0.00143	0.00143
	(!A1 * B1 * B2 * !C2 * X)	-0.00082	-0.00082	-0.00081
	(!A1 * B1 * !B2 * !C2 * !X)	0.00047	0.00047	0.00045
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00192	-0.00192	-0.00195
	(!A1 * !B1 * !C2 * !X)	0.00047	0.00047	0.00045
	(!A1 * !B1 * !C2 * !X)	-0.00192	-0.00193	-0.00195

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)**	-0.00136	-0.00137	-0.00150
	(A1 * B1 * B2 * C2 * X)	0.00101	0.00101	0.00090
	(A1 * B1 * B2 * !C2 * X)	-0.00144	-0.00147	-0.00146
	(A1 * B1 * B2 * !C2 * X)	0.00087	0.00087	0.00086
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00121	-0.00123	-0.00147
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00110	0.00110	0.00091
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00144	-0.00147	-0.00147
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00087	0.00087	0.00086
	(A1 * A2 * !B1 * C2 * X)	-0.00121	-0.00123	-0.00147
	(A1 * A2 * !B1 * C2 * X)	0.00110	0.00110	0.00091
	(A1 * A2 * !B1 * !C2 * X)	-0.00144	-0.00147	-0.00147
	(A1 * A2 * !B1 * !C2 * X)	0.00087	0.00087	0.00086
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00045	-0.00046	-0.00045
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00204	0.00207	0.00204
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00045	-0.00046	-0.00045
	(A1 * !A2 * !B1 * !C2 * !X)	0.00204	0.00207	0.00204
	(!A1 * B1 * B2 * C2 * X)	-0.00136	-0.00137	-0.00150
	(!A1 * B1 * B2 * C2 * X)	0.00101	0.00101	0.00090
	(!A1 * B1 * B2 * !C2 * X)	-0.00144	-0.00147	-0.00147
	(!A1 * B1 * B2 * !C2 * X)	0.00087	0.00087	0.00087
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * B1 * !B2 * !C2 * !X)	0.00204	0.00207	0.00204
	(!A1 * !B1 * !C2 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !B1 * !C2 * !X)	0.00204	0.00207	0.00204

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00136	-0.00137	-0.00147
	(A1 * B1 * B2 * C2 * X)	0.00092	0.00092	0.00084
	(A1 * B1 * B2 * !C2 * X)	-0.00140	-0.00143	-0.00142
	(A1 * B1 * B2 * !C2 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00120	-0.00121	-0.00143
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00103	0.00103	0.00086
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00140	-0.00143	-0.00142
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00082	0.00081	0.00081
	(A1 * A2 * !B1 * C2 * X)	-0.00120	-0.00121	-0.00143
	(A1 * A2 * !B1 * C2 * X)	0.00103	0.00103	0.00086
	(A1 * A2 * !B1 * !C2 * X)	-0.00140	-0.00143	-0.00143
	(A1 * A2 * !B1 * !C2 * X)	0.00082	0.00081	0.00081
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00044	-0.00046	-0.00044
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00195	0.00197	0.00195
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00044	-0.00046	-0.00044
	(A1 * !A2 * !B1 * !C2 * !X)	0.00195	0.00197	0.00195
	(!A1 * B1 * B2 * C2 * X)	-0.00136	-0.00137	-0.00147
	(!A1 * B1 * B2 * C2 * X)	0.00092	0.00092	0.00084
	(!A1 * B1 * B2 * !C2 * X)	-0.00140	-0.00143	-0.00143
	(!A1 * B1 * B2 * !C2 * X)	0.00082	0.00082	0.00081
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00044	-0.00046	-0.00044
	(!A1 * B1 * !B2 * !C2 * !X)	0.00195	0.00197	0.00195
	(!A1 * !B1 * !C2 * !X)	-0.00044	-0.00046	-0.00044
	(!A1 * !B1 * !C2 * !X)	0.00195	0.00197	0.00195

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)**	0.00153	0.00154	0.00152
	(A1 * B1 * B2 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * B1 * B2 * !C1 * X)	0.00146	0.00147	0.00146
	(A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00153	0.00154	0.00152
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00146	0.00147	0.00146
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00082	-0.00083	-0.00083
	(A1 * A2 * !B1 * C1 * X)	0.00153	0.00154	0.00152
	(A1 * A2 * !B1 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * !B1 * !C1 * X)	0.00146	0.00148	0.00146
	(A1 * A2 * !B1 * !C1 * X)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00180	-0.00180	-0.00180
	(A1 * !A2 * !B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00180	-0.00180	-0.00180
	(!A1 * B1 * B2 * C1 * X)	0.00153	0.00154	0.00152
	(!A1 * B1 * B2 * C1 * X)	-0.00084	-0.00085	-0.00083
	(!A1 * B1 * B2 * !C1 * X)	0.00146	0.00148	0.00146
	(!A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	0.00117	0.00118	0.00117
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00180	-0.00180	-0.00180
	(!A1 * !B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(!A1 * !B1 * !C1 * !X)	-0.00180	-0.00180	-0.00180

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00157	0.00159	0.00157
	(A1 * B1 * B2 * C1 * X)	-0.00084	-0.00085	-0.00083
	(A1 * B1 * B2 * !C1 * X)	0.00151	0.00152	0.00151
	(A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00157	0.00159	0.00157
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00084	-0.00085	-0.00083
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00151	0.00152	0.00151
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00082	-0.00083	-0.00083
	(A1 * A2 * !B1 * C1 * X)	0.00157	0.00159	0.00157
	(A1 * A2 * !B1 * C1 * X)	-0.00084	-0.00085	-0.00083
	(A1 * A2 * !B1 * !C1 * X)	0.00151	0.00152	0.00151
	(A1 * A2 * !B1 * !C1 * X)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00115	0.00117	0.00115
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * !B1 * !C1 * !X)	0.00115	0.00117	0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(!A1 * B1 * B2 * C1 * X)	0.00157	0.00159	0.00157
	(!A1 * B1 * B2 * C1 * X)	-0.00084	-0.00085	-0.00083
	(!A1 * B1 * B2 * !C1 * X)	0.00151	0.00152	0.00151
	(!A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	0.00115	0.00117	0.00115
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(!A1 * !B1 * !C1 * !X)	0.00115	0.00117	0.00115
	(!A1 * !B1 * !C1 * !X)	-0.00187	-0.00188	-0.00187

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)**	-0.00136	-0.00137	-0.00150
	(A1 * B1 * B2 * C1 * X)	0.00097	0.00097	0.00086
	(A1 * B1 * B2 * !C1 * X)	-0.00144	-0.00146	-0.00146
	(A1 * B1 * B2 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00121	-0.00123	-0.00146
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00107	0.00106	0.00088
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00144	-0.00146	-0.00146
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * !B1 * C1 * X)	-0.00121	-0.00123	-0.00146
	(A1 * A2 * !B1 * C1 * X)	0.00107	0.00107	0.00088
	(A1 * A2 * !B1 * !C1 * X)	-0.00144	-0.00146	-0.00146
	(A1 * A2 * !B1 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00110	-0.00118	-0.00117
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00186	0.00182	0.00180
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00110	-0.00118	-0.00117
	(A1 * !A2 * !B1 * !C1 * !X)	0.00186	0.00182	0.00180
	(!A1 * B1 * B2 * C1 * X)	-0.00136	-0.00137	-0.00150
	(!A1 * B1 * B2 * C1 * X)	0.00098	0.00098	0.00086
	(!A1 * B1 * B2 * !C1 * X)	-0.00144	-0.00146	-0.00146
	(!A1 * B1 * B2 * !C1 * X)	0.00083	0.00083	0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00110	-0.00118	-0.00117
	(!A1 * B1 * !B2 * !C1 * !X)	0.00186	0.00182	0.00180
	(!A1 * !B1 * !C1 * !X)	-0.00110	-0.00118	-0.00117
	(!A1 * !B1 * !C1 * !X)	0.00186	0.00182	0.00180

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00145	-0.00146	-0.00155
	(A1 * B1 * B2 * C1 * X)	0.00094	0.00094	0.00086
	(A1 * B1 * B2 * !C1 * X)	-0.00149	-0.00151	-0.00151
	(A1 * B1 * B2 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00129	-0.00130	-0.00151
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00105	0.00105	0.00088
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00149	-0.00151	-0.00151
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00084	0.00083	0.00083
	(A1 * A2 * !B1 * C1 * X)	-0.00128	-0.00130	-0.00151
	(A1 * A2 * !B1 * C1 * X)	0.00105	0.00105	0.00088
	(A1 * A2 * !B1 * !C1 * X)	-0.00149	-0.00151	-0.00151
	(A1 * A2 * !B1 * !C1 * X)	0.00084	0.00083	0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00108	-0.00116	-0.00115
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00194	0.00190	0.00188
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00108	-0.00116	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00194	0.00190	0.00188
	(!A1 * B1 * B2 * C1 * X)	-0.00145	-0.00146	-0.00155
	(!A1 * B1 * B2 * C1 * X)	0.00094	0.00094	0.00086
	(!A1 * B1 * B2 * !C1 * X)	-0.00149	-0.00151	-0.00151
	(!A1 * B1 * B2 * !C1 * X)	0.00084	0.00084	0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00108	-0.00116	-0.00115
	(!A1 * B1 * !B2 * !C1 * !X)	0.00194	0.00190	0.00188
	(!A1 * !B1 * !C1 * !X)	-0.00108	-0.00116	-0.00115
	(!A1 * !B1 * !C1 * !X)	0.00194	0.00190	0.00188

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00274	0.00272	0.00284	0.00285	0.48977
sky130_fd_sc_hs__a22oi_2	0.00600	0.00525	0.00573	0.00522	0.88575
sky130_fd_sc_hs__a22oi_4	0.01050	0.01035	0.01062	0.01044	1.63979

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.03292	0.10576
sky130_fd_sc_hs__a22oi_2	0.00000	0.06584	0.21153
sky130_fd_sc_hs__a22oi_4	0.00000	0.13167	0.42305

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)	0.11377	1.00997	10.60060
	A2->Y (FR)	0.13379	1.03561	10.66350
	B1->Y (FR)	0.08292	0.98031	10.75940
	B2->Y (FR)	0.10304	1.01265	10.89860
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.11977	0.87288	10.39180
	A2->Y (FR)	0.14330	0.91339	10.61710
	B1->Y (FR)	0.08487	0.85506	10.69370
	B2->Y (FR)	0.11101	0.89787	10.97310
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.11049	0.75103	10.17270
	A2->Y (FR)	0.13853	0.79109	10.40190
	B1->Y (FR)	0.07862	0.73911	10.53440
	B2->Y (FR)	0.10757	0.78697	10.84700

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.03568	0.42350	4.44272
	A2->Y (RF)	0.03985	0.39115	4.02102
	B1->Y (RF)	0.02490	0.40870	4.47687
	B2->Y (RF)	0.02904	0.37958	4.08488
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.03705	0.36987	4.36045
	A2->Y (RF)	0.04104	0.34713	4.01270
	B1->Y (RF)	0.02450	0.34621	4.33741
	B2->Y (RF)	0.02984	0.32548	3.98545
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.03741	0.34158	4.59812
	A2->Y (RF)	0.04220	0.29757	3.90061
	B1->Y (RF)	0.02353	0.31347	4.59879
	B2->Y (RF)	0.02867	0.27081	3.86422

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	-0.00016	-0.00028	0.00195
	A1	0.00604	0.00590	0.00814
	A2	0.00033	0.00022	0.00249
	A2	0.00758	0.00747	0.00972
	B1	-0.00024	-0.00001	0.00547
	B1	0.00402	0.00426	0.00981
	B2	0.00010	0.00028	0.00570
	B2	0.00541	0.00537	0.01104
sky130_fd_sc_hs__a22oi_2	A1	0.00014	-0.00016	0.00463
	A1	0.01321	0.01289	0.01774
	A2	0.00134	0.00104	0.00580
	A2	0.01747	0.01714	0.02187
	B1	-0.00017	0.00098	0.01176
	B1	0.00870	0.00988	0.02081
	B2	0.00141	0.00229	0.01296
	B2	0.01182	0.01270	0.02337
sky130_fd_sc_hs__a22oi_4	A1	-0.00147	-0.00198	0.00764
	A1	0.02318	0.02262	0.03250
	A2	0.00114	0.00058	0.01017
	A2	0.03344	0.03290	0.04207
	B1	-0.00189	0.00016	0.02033
	B1	0.01480	0.01690	0.03714
	B2	0.00092	0.00208	0.02247
	B2	0.02147	0.02260	0.04315

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00856	0.00855	0.01123
	A1	0.00247	0.00239	0.00483
	A2	0.00961	0.00950	0.01143
	A2	0.00241	0.00229	0.00424
	B1	0.00407	0.00420	0.00683
	B1	-0.00018	-0.00007	0.00236
	B2	0.00522	0.00524	0.00735
	B2	-0.00016	-0.00016	0.00181
sky130_fd_sc_hs__a22oi_2	A1	0.01722	0.01700	0.02226
	A1	0.00437	0.00415	0.00917
	A2	0.01870	0.01848	0.02241
	A2	0.00443	0.00417	0.00813
	B1	0.00867	0.00890	0.01460
	B1	-0.00019	-0.00001	0.00525
	B2	0.01047	0.01043	0.01475
	B2	-0.00008	-0.00012	0.00410
sky130_fd_sc_hs__a22oi_4	A1	0.03259	0.03229	0.04249
	A1	0.00836	0.00795	0.01771
	A2	0.03671	0.03614	0.04498
	A2	0.00825	0.00769	0.01580
	B1	0.01579	0.01620	0.02779
	B1	-0.00087	-0.00056	0.00936
	B2	0.02018	0.02009	0.02873
	B2	-0.00064	-0.00076	0.00759

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)	0.00154	0.00142	0.00140
	(A2 * B1 * B2 * !Y)	-0.00156	-0.00175	-0.00174
	(!A2 * B1 * B2 * !Y)	0.00134	0.00134	0.00134
	(!A2 * B1 * B2 * !Y)	-0.00179	-0.00178	-0.00178
	(!A2 * B1 * !B2 * Y)	0.00049	0.00049	0.00047
	(!A2 * B1 * !B2 * Y)	-0.00203	-0.00203	-0.00206
	(!A2 * !B1 * Y)	0.00049	0.00049	0.00047
	(!A2 * !B1 * Y)	-0.00203	-0.00203	-0.00206
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00349	0.00312	0.00306
	(A2 * B1 * B2 * !Y)	-0.00317	-0.00372	-0.00371
	(!A2 * B1 * B2 * !Y)	0.00291	0.00290	0.00292
	(!A2 * B1 * B2 * !Y)	-0.00381	-0.00380	-0.00381
	(!A2 * B1 * !B2 * Y)	0.00099	0.00099	0.00095
	(!A2 * B1 * !B2 * Y)	-0.00455	-0.00458	-0.00461
	(!A2 * !B1 * Y)	0.00099	0.00099	0.00095
	(!A2 * !B1 * Y)	-0.00455	-0.00457	-0.00461
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00642	0.00578	0.00567
	(A2 * B1 * B2 * !Y)	-0.00612	-0.00706	-0.00706
	(!A2 * B1 * B2 * !Y)	0.00536	0.00543	0.00538
	(!A2 * B1 * B2 * !Y)	-0.00721	-0.00727	-0.00722
	(!A2 * B1 * !B2 * Y)	0.00187	0.00188	0.00179
	(!A2 * B1 * !B2 * Y)	-0.00830	-0.00838	-0.00848
	(!A2 * !B1 * Y)	0.00187	0.00189	0.00180
	(!A2 * !B1 * Y)	-0.00830	-0.00838	-0.00848

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)	-0.00139	-0.00141	-0.00139
	(A2 * B1 * B2 * !Y)	0.00173	0.00177	0.00174
	(!A2 * B1 * B2 * !Y)	-0.00130	-0.00134	-0.00134
	(!A2 * B1 * B2 * !Y)	0.00179	0.00179	0.00179
	(!A2 * B1 * !B2 * Y)	-0.00046	-0.00047	-0.00046
	(!A2 * B1 * !B2 * Y)	0.00206	0.00210	0.00206
	(!A2 * !B1 * Y)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * Y)	0.00206	0.00210	0.00206
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00304	-0.00306	-0.00304
	(A2 * B1 * B2 * !Y)	0.00369	0.00372	0.00371
	(!A2 * B1 * B2 * !Y)	-0.00283	-0.00290	-0.00292
	(!A2 * B1 * B2 * !Y)	0.00383	0.00386	0.00383
	(!A2 * B1 * !B2 * Y)	-0.00093	-0.00093	-0.00092
	(!A2 * B1 * !B2 * Y)	0.00463	0.00464	0.00462
	(!A2 * !B1 * Y)	-0.00094	-0.00093	-0.00092
	(!A2 * !B1 * Y)	0.00463	0.00464	0.00462
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00566	-0.00566	-0.00564
	(A2 * B1 * B2 * !Y)	0.00705	0.00706	0.00706
	(!A2 * B1 * B2 * !Y)	-0.00518	-0.00542	-0.00538
	(!A2 * B1 * B2 * !Y)	0.00726	0.00730	0.00725
	(!A2 * B1 * !B2 * Y)	-0.00174	-0.00175	-0.00174
	(!A2 * B1 * !B2 * Y)	0.00848	0.00855	0.00850
	(!A2 * !B1 * Y)	-0.00175	-0.00176	-0.00175
	(!A2 * !B1 * Y)	0.00848	0.00855	0.00850

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)	0.00163	0.00151	0.00148
	(A1 * B1 * B2 * !Y)	-0.00160	-0.00182	-0.00181
	(!A1 * B1 * B2 * !Y)	0.00141	0.00143	0.00142
	(!A1 * B1 * B2 * !Y)	-0.00184	-0.00186	-0.00185
	(!A1 * B1 * !B2 * Y)	0.00142	0.00143	0.00142
	(!A1 * B1 * !B2 * Y)	-0.00185	-0.00186	-0.00185
	(!A1 * !B1 * Y)	0.00141	0.00142	0.00142
	(!A1 * !B1 * Y)	-0.00185	-0.00186	-0.00185
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00310	0.00286	0.00281
	(A1 * B1 * B2 * !Y)	-0.00304	-0.00345	-0.00344
	(!A1 * B1 * B2 * !Y)	0.00266	0.00268	0.00267
	(!A1 * B1 * B2 * !Y)	-0.00351	-0.00353	-0.00352
	(!A1 * B1 * !B2 * Y)	0.00257	0.00260	0.00258
	(!A1 * B1 * !B2 * Y)	-0.00361	-0.00363	-0.00361
	(!A1 * !B1 * Y)	0.00258	0.00260	0.00258
	(!A1 * !B1 * Y)	-0.00361	-0.00363	-0.00361
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00645	0.00582	0.00571
	(A1 * B1 * B2 * !Y)	-0.00615	-0.00709	-0.00708
	(!A1 * B1 * B2 * !Y)	0.00543	0.00547	0.00545
	(!A1 * B1 * B2 * !Y)	-0.00723	-0.00727	-0.00725
	(!A1 * B1 * !B2 * Y)	0.00540	0.00543	0.00541
	(!A1 * B1 * !B2 * Y)	-0.00724	-0.00726	-0.00724
	(!A1 * !B1 * Y)	0.00540	0.00543	0.00542
	(!A1 * !B1 * Y)	-0.00724	-0.00725	-0.00725

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)	-0.00148	-0.00148	-0.00147
	(A1 * B1 * B2 * !Y)	0.00182	0.00182	0.00181
	(!A1 * B1 * B2 * !Y)	-0.00138	-0.00142	-0.00142
	(!A1 * B1 * B2 * !Y)	0.00185	0.00187	0.00186
	(!A1 * B1 * !B2 * Y)	-0.00134	-0.00142	-0.00142
	(!A1 * B1 * !B2 * Y)	0.00189	0.00188	0.00186
	(!A1 * !B1 * Y)	-0.00134	-0.00142	-0.00142
	(!A1 * !B1 * Y)	0.00189	0.00186	0.00186
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00280	-0.00282	-0.00279
	(A1 * B1 * B2 * !Y)	0.00344	0.00350	0.00344
	(!A1 * B1 * B2 * !Y)	-0.00259	-0.00267	-0.00267
	(!A1 * B1 * B2 * !Y)	0.00353	0.00353	0.00353
	(!A1 * B1 * !B2 * Y)	-0.00240	-0.00260	-0.00258
	(!A1 * B1 * !B2 * Y)	0.00374	0.00366	0.00362
	(!A1 * !B1 * Y)	-0.00240	-0.00260	-0.00258
	(!A1 * !B1 * Y)	0.00374	0.00366	0.00362
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00568	-0.00571	-0.00568
	(A1 * B1 * B2 * !Y)	0.00704	0.00711	0.00708
	(!A1 * B1 * B2 * !Y)	-0.00523	-0.00541	-0.00545
	(!A1 * B1 * B2 * !Y)	0.00725	0.00728	0.00728
	(!A1 * B1 * !B2 * Y)	-0.00502	-0.00543	-0.00541
	(!A1 * B1 * !B2 * Y)	0.00752	0.00735	0.00727
	(!A1 * !B1 * Y)	-0.00502	-0.00543	-0.00542
	(!A1 * !B1 * Y)	0.00752	0.00735	0.00727

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)	0.00160	0.00163	0.00161
	(A1 * A2 * B2 * !Y)	-0.00088	-0.00089	-0.00088
	(A1 * A2 * !B2 * !Y)	0.00154	0.00156	0.00155
	(A1 * A2 * !B2 * !Y)	-0.00088	-0.00088	-0.00088
	(A1 * !A2 * !B2 * Y)	0.00045	0.00045	0.00044
	(A1 * !A2 * !B2 * Y)	-0.00212	-0.00213	-0.00215
	(!A1 * !B2 * Y)	0.00045	0.00045	0.00044
	(!A1 * !B2 * Y)	-0.00212	-0.00213	-0.00215
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00343	0.00349	0.00344
	(A1 * A2 * B2 * !Y)	-0.00171	-0.00173	-0.00170
	(A1 * A2 * !B2 * !Y)	0.00329	0.00332	0.00330
	(A1 * A2 * !B2 * !Y)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * !B2 * Y)	0.00106	0.00106	0.00102
	(A1 * !A2 * !B2 * Y)	-0.00422	-0.00425	-0.00429
	(!A1 * !B2 * Y)	0.00106	0.00106	0.00102
	(!A1 * !B2 * Y)	-0.00422	-0.00425	-0.00429
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00635	0.00648	0.00638
	(A1 * A2 * B2 * !Y)	-0.00343	-0.00350	-0.00344
	(A1 * A2 * !B2 * !Y)	0.00607	0.00613	0.00610
	(A1 * A2 * !B2 * !Y)	-0.00342	-0.00345	-0.00343
	(A1 * !A2 * !B2 * Y)	0.00184	0.00185	0.00177
	(A1 * !A2 * !B2 * Y)	-0.00830	-0.00834	-0.00852
	(!A1 * !B2 * Y)	0.00185	0.00185	0.00178
	(!A1 * !B2 * Y)	-0.00832	-0.00834	-0.00852

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)	-0.00144	-0.00146	-0.00159
	(A1 * A2 * B2 * !Y)	0.00102	0.00102	0.00091
	(A1 * A2 * !B2 * !Y)	-0.00151	-0.00155	-0.00155
	(A1 * A2 * !B2 * !Y)	0.00088	0.00088	0.00088
	(A1 * !A2 * !B2 * Y)	-0.00043	-0.00043	-0.00043
	(A1 * !A2 * !B2 * Y)	0.00215	0.00215	0.00215
	(!A1 * !B2 * Y)	-0.00043	-0.00043	-0.00043
	(!A1 * !B2 * Y)	0.00215	0.00215	0.00215
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00314	-0.00318	-0.00340
	(A1 * A2 * B2 * !Y)	0.00194	0.00195	0.00176
	(A1 * A2 * !B2 * !Y)	-0.00321	-0.00332	-0.00330
	(A1 * A2 * !B2 * !Y)	0.00171	0.00171	0.00170
	(A1 * !A2 * !B2 * Y)	-0.00101	-0.00100	-0.00099
	(A1 * !A2 * !B2 * Y)	0.00431	0.00430	0.00430
	(!A1 * !B2 * Y)	-0.00101	-0.00100	-0.00099
	(!A1 * !B2 * Y)	0.00431	0.00430	0.00430
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00581	-0.00585	-0.00631
	(A1 * A2 * B2 * !Y)	0.00390	0.00390	0.00355
	(A1 * A2 * !B2 * !Y)	-0.00589	-0.00613	-0.00610
	(A1 * A2 * !B2 * !Y)	0.00343	0.00345	0.00343
	(A1 * !A2 * !B2 * Y)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * !B2 * Y)	0.00849	0.00855	0.00853
	(!A1 * !B2 * Y)	-0.00172	-0.00174	-0.00173
	(!A1 * !B2 * Y)	0.00849	0.00855	0.00853

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)	0.00176	0.00178	0.00175
	(A1 * A2 * B1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !B1 * !Y)	0.00168	0.00170	0.00168
	(A1 * A2 * !B1 * !Y)	-0.00088	-0.00089	-0.00088
	(A1 * !A2 * !B1 * Y)	0.00142	0.00144	0.00143
	(A1 * !A2 * !B1 * Y)	-0.00190	-0.00192	-0.00191
	(!A1 * !B1 * Y)	0.00142	0.00144	0.00143
	(!A1 * !B1 * Y)	-0.00190	-0.00192	-0.00191
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00304	0.00309	0.00304
	(A1 * A2 * B1 * !Y)	-0.00171	-0.00174	-0.00171
	(A1 * A2 * !B1 * !Y)	0.00291	0.00295	0.00293
	(A1 * A2 * !B1 * !Y)	-0.00170	-0.00171	-0.00171
	(A1 * !A2 * !B1 * Y)	0.00259	0.00260	0.00259
	(A1 * !A2 * !B1 * Y)	-0.00358	-0.00359	-0.00358
	(!A1 * !B1 * Y)	0.00259	0.00260	0.00259
	(!A1 * !B1 * Y)	-0.00358	-0.00360	-0.00358
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00635	0.00648	0.00637
	(A1 * A2 * B1 * !Y)	-0.00344	-0.00351	-0.00345
	(A1 * A2 * !B1 * !Y)	0.00610	0.00619	0.00613
	(A1 * A2 * !B1 * !Y)	-0.00342	-0.00343	-0.00344
	(A1 * !A2 * !B1 * Y)	0.00542	0.00546	0.00542
	(A1 * !A2 * !B1 * Y)	-0.00722	-0.00723	-0.00721
	(!A1 * !B1 * Y)	0.00542	0.00545	0.00542
	(!A1 * !B1 * Y)	-0.00721	-0.00723	-0.00721

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)	-0.00158	-0.00160	-0.00173
	(A1 * A2 * B1 * !Y)	0.00102	0.00103	0.00092
	(A1 * A2 * !B1 * !Y)	-0.00165	-0.00169	-0.00168
	(A1 * A2 * !B1 * !Y)	0.00088	0.00089	0.00088
	(A1 * !A2 * !B1 * Y)	-0.00134	-0.00143	-0.00143
	(A1 * !A2 * !B1 * Y)	0.00197	0.00193	0.00192
	(!A1 * !B1 * Y)	-0.00134	-0.00143	-0.00143
	(!A1 * !B1 * Y)	0.00197	0.00193	0.00192
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00274	-0.00278	-0.00300
	(A1 * A2 * B1 * !Y)	0.00195	0.00196	0.00177
	(A1 * A2 * !B1 * !Y)	-0.00281	-0.00291	-0.00293
	(A1 * A2 * !B1 * !Y)	0.00170	0.00171	0.00171
	(A1 * !A2 * !B1 * Y)	-0.00240	-0.00260	-0.00259
	(A1 * !A2 * !B1 * Y)	0.00368	0.00362	0.00359
	(!A1 * !B1 * Y)	-0.00240	-0.00260	-0.00259
	(!A1 * !B1 * Y)	0.00368	0.00362	0.00359
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00580	-0.00587	-0.00630
	(A1 * A2 * B1 * !Y)	0.00391	0.00392	0.00355
	(A1 * A2 * !B1 * !Y)	-0.00591	-0.00609	-0.00613
	(A1 * A2 * !B1 * !Y)	0.00343	0.00343	0.00344
	(A1 * !A2 * !B1 * Y)	-0.00502	-0.00546	-0.00542
	(A1 * !A2 * !B1 * Y)	0.00745	0.00728	0.00723
	(!A1 * !B1 * Y)	-0.00502	-0.00545	-0.00542
	(!A1 * !B1 * Y)	0.00745	0.00728	0.00723

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00267	0.00246	0.00261	0.00268	1.05334
sky130_fd_sc_hs__a22o_2	0.00279	0.00257	0.00274	0.00268	2.02695
sky130_fd_sc_hs__a22o_4	0.00474	0.00498	0.00474	0.00521	4.16614

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22o_1	0.00000	0.10817	0.27551
sky130_fd_sc_hs__a22o_2	0.00000	0.13916	0.28171
sky130_fd_sc_hs__a22o_4	0.00000	0.28125	0.56341

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)	0.09210	0.64951	6.41547
	A2->X (RR)	0.09739	0.64145	6.41977
	B1->X (RR)	0.07812	0.61123	6.41160
	B2->X (RR)	0.08243	0.61121	6.40936
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.09256	0.56499	6.36973
	A2->X (RR)	0.09811	0.55180	6.34857
	B1->X (RR)	0.07869	0.52922	6.33662
	B2->X (RR)	0.08251	0.52424	6.32541
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.08983	0.48053	6.51791
	A2->X (RR)	0.09514	0.47746	6.51554
	B1->X (RR)	0.07820	0.44871	6.46492
	B2->X (RR)	0.08276	0.44684	6.47756

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.16132	0.61919	4.73981
	A2->X (FF)	0.17612	0.65221	4.83179
	B1->X (FF)	0.13981	0.60772	4.73025
	B2->X (FF)	0.15099	0.62759	4.76009
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.19764	0.64483	4.80690
	A2->X (FF)	0.21528	0.68054	4.92170
	B1->X (FF)	0.17882	0.64589	4.81928
	B2->X (FF)	0.18864	0.66352	4.85712
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.19133	0.61680	5.05862
	A2->X (FF)	0.20418	0.64144	5.12110
	B1->X (FF)	0.17071	0.61431	5.03204
	B2->X (FF)	0.17568	0.62167	5.04778

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01082	0.01118	0.02313
	A1	0.00516	0.00552	0.01764
	A2	0.01185	0.01209	0.02426
	A2	0.00516	0.00539	0.01772
	B1	0.00704	0.00769	0.02727
	B1	0.00316	0.00382	0.02358
	B2	0.00791	0.00832	0.02599
	B2	0.00311	0.00353	0.02138
sky130_fd_sc_hs__a22o_2	A1	0.01324	0.01379	0.02535
	A1	0.00749	0.00801	0.02009
	A2	0.01438	0.01486	0.02675
	A2	0.00743	0.00792	0.02021
	B1	0.00952	0.01034	0.02909
	B1	0.00542	0.00628	0.02559
	B2	0.01159	0.01220	0.02983
	B2	0.00540	0.00605	0.02373
sky130_fd_sc_hs__a22o_4	A1	0.02622	0.02749	0.05633
	A1	0.01525	0.01666	0.04586
	A2	0.02786	0.02877	0.05279
	A2	0.01528	0.01622	0.04088
	B1	0.01857	0.01995	0.05960
	B1	0.01120	0.01265	0.05283
	B2	0.02039	0.02130	0.05827
	B2	0.01094	0.01191	0.04936

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00302	0.00290	0.01594
	A1	0.00874	0.00860	0.02151
	A2	0.00362	0.00383	0.01723
	A2	0.01079	0.01102	0.02268
	B1	0.00302	0.00423	0.02548
	B1	0.00689	0.00810	0.02933
	B2	0.00328	0.00451	0.02484
	B2	0.00802	0.00918	0.02947
sky130_fd_sc_hs__a22o_2	A1	0.00611	0.00593	0.01781
	A1	0.01227	0.01209	0.02354
	A2	0.00709	0.00722	0.01971
	A2	0.01424	0.01455	0.02592
	B1	0.00538	0.00689	0.02793
	B1	0.00948	0.01083	0.03164
	B2	0.00578	0.00723	0.02768
	B2	0.01317	0.01412	0.03281
sky130_fd_sc_hs__a22o_4	A1	0.01200	0.01243	0.03671
	A1	0.02330	0.02371	0.04769
	A2	0.01228	0.01269	0.03545
	A2	0.02561	0.02600	0.04873
	B1	0.01056	0.01344	0.05100
	B1	0.01791	0.02039	0.05699
	B2	0.01134	0.01399	0.05271
	B2	0.02069	0.02307	0.06139

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)	0.00166	0.00150	0.00148
	(A2 * B1 * B2 * X)	-0.00135	-0.00156	-0.00157
	(!A2 * B1 * B2 * X)	0.00142	0.00143	0.00142
	(!A2 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(!A2 * B1 * !B2 * !X)	0.00049	0.00049	0.00046
	(!A2 * B1 * !B2 * !X)	-0.00201	-0.00201	-0.00206
	(!A2 * !B1 * !X)	0.00049	0.00049	0.00046
	(!A2 * !B1 * !X)	-0.00201	-0.00201	-0.00206
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00180	0.00165	0.00162
	(A2 * B1 * B2 * X)	-0.00133	-0.00154	-0.00155
	(!A2 * B1 * B2 * X)	0.00156	0.00157	0.00156
	(!A2 * B1 * B2 * X)	-0.00157	-0.00158	-0.00157
	(!A2 * B1 * !B2 * !X)	0.00054	0.00054	0.00050
	(!A2 * B1 * !B2 * !X)	-0.00201	-0.00202	-0.00207
	(!A2 * !B1 * !X)	0.00054	0.00054	0.00050
	(!A2 * !B1 * !X)	-0.00201	-0.00202	-0.00207
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00279	0.00245	0.00239
	(A2 * B1 * B2 * X)	-0.00274	-0.00322	-0.00324
	(!A2 * B1 * B2 * X)	0.00227	0.00228	0.00228
	(!A2 * B1 * B2 * X)	-0.00330	-0.00331	-0.00331
	(!A2 * B1 * !B2 * !X)	0.00075	0.00075	0.00072
	(!A2 * B1 * !B2 * !X)	-0.00379	-0.00380	-0.00385
	(!A2 * !B1 * !X)	0.00075	0.00075	0.00072
	(!A2 * !B1 * !X)	-0.00379	-0.00379	-0.00385

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)	-0.00147	-0.00147	-0.00146
	(A2 * B1 * B2 * X)	0.00156	0.00157	0.00157
	(!A2 * B1 * B2 * X)	-0.00135	-0.00143	-0.00142
	(!A2 * B1 * B2 * X)	0.00159	0.00161	0.00160
	(!A2 * B1 * !B2 * !X)	-0.00045	-0.00045	-0.00044
	(!A2 * B1 * !B2 * !X)	0.00206	0.00207	0.00206
	(!A2 * !B1 * !X)	-0.00045	-0.00045	-0.00045
	(!A2 * !B1 * !X)	0.00207	0.00207	0.00206
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00161	-0.00162	-0.00161
	(A2 * B1 * B2 * X)	0.00154	0.00155	0.00155
	(!A2 * B1 * B2 * X)	-0.00149	-0.00157	-0.00156
	(!A2 * B1 * B2 * X)	0.00158	0.00160	0.00158
	(!A2 * B1 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * B1 * !B2 * !X)	0.00208	0.00211	0.00208
	(!A2 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * !X)	0.00208	0.00211	0.00208
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00238	-0.00238	-0.00237
	(A2 * B1 * B2 * X)	0.00324	0.00325	0.00324
	(!A2 * B1 * B2 * X)	-0.00219	-0.00228	-0.00228
	(!A2 * B1 * B2 * X)	0.00332	0.00336	0.00333
	(!A2 * B1 * !B2 * !X)	-0.00069	-0.00071	-0.00070
	(!A2 * B1 * !B2 * !X)	0.00383	0.00392	0.00386
	(!A2 * !B1 * !X)	-0.00069	-0.00071	-0.00070
	(!A2 * !B1 * !X)	0.00383	0.00392	0.00386

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)	0.00164	0.00148	0.00145
	(A1 * B1 * B2 * X)	-0.00135	-0.00156	-0.00157
	(!A1 * B1 * B2 * X)	0.00139	0.00140	0.00139
	(!A1 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * B1 * !B2 * !X)	0.00139	0.00139	0.00138
	(!A1 * B1 * !B2 * !X)	-0.00160	-0.00160	-0.00160
	(!A1 * !B1 * !X)	0.00139	0.00141	0.00139
	(!A1 * !B1 * !X)	-0.00160	-0.00161	-0.00160
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00166	0.00152	0.00149
	(A1 * B1 * B2 * X)	-0.00139	-0.00161	-0.00162
	(!A1 * B1 * B2 * X)	0.00142	0.00144	0.00143
	(!A1 * B1 * B2 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !B2 * !X)	0.00142	0.00142	0.00142
	(!A1 * B1 * !B2 * !X)	-0.00164	-0.00165	-0.00165
	(!A1 * !B1 * !X)	0.00142	0.00142	0.00142
	(!A1 * !B1 * !X)	-0.00165	-0.00165	-0.00165
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00327	0.00297	0.00291
	(A1 * B1 * B2 * X)	-0.00272	-0.00316	-0.00318
	(!A1 * B1 * B2 * X)	0.00280	0.00283	0.00280
	(!A1 * B1 * B2 * X)	-0.00324	-0.00326	-0.00324
	(!A1 * B1 * !B2 * !X)	0.00273	0.00276	0.00274
	(!A1 * B1 * !B2 * !X)	-0.00330	-0.00332	-0.00330
	(!A1 * !B1 * !X)	0.00273	0.00276	0.00274
	(!A1 * !B1 * !X)	-0.00330	-0.00332	-0.00330

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)	-0.00145	-0.00145	-0.00144
	(A1 * B1 * B2 * X)	0.00156	0.00157	0.00157
	(!A1 * B1 * B2 * X)	-0.00134	-0.00139	-0.00139
	(!A1 * B1 * B2 * X)	0.00159	0.00161	0.00160
	(!A1 * B1 * !B2 * !X)	-0.00131	-0.00139	-0.00138
	(!A1 * B1 * !B2 * !X)	0.00163	0.00162	0.00160
	(!A1 * !B1 * !X)	-0.00131	-0.00139	-0.00139
	(!A1 * !B1 * !X)	0.00163	0.00162	0.00160
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00149	-0.00148	-0.00148
	(A1 * B1 * B2 * X)	0.00162	0.00162	0.00162
	(!A1 * B1 * B2 * X)	-0.00137	-0.00143	-0.00143
	(!A1 * B1 * B2 * X)	0.00165	0.00167	0.00165
	(!A1 * B1 * !B2 * !X)	-0.00134	-0.00142	-0.00142
	(!A1 * B1 * !B2 * !X)	0.00167	0.00166	0.00165
	(!A1 * !B1 * !X)	-0.00134	-0.00142	-0.00142
	(!A1 * !B1 * !X)	0.00167	0.00166	0.00165
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00289	-0.00289	-0.00289
	(A1 * B1 * B2 * X)	0.00316	0.00316	0.00318
	(!A1 * B1 * B2 * X)	-0.00271	-0.00283	-0.00280
	(!A1 * B1 * B2 * X)	0.00324	0.00328	0.00326
	(!A1 * B1 * !B2 * !X)	-0.00258	-0.00276	-0.00274
	(!A1 * B1 * !B2 * !X)	0.00340	0.00334	0.00332
	(!A1 * !B1 * !X)	-0.00258	-0.00276	-0.00274
	(!A1 * !B1 * !X)	0.00340	0.00334	0.00332

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)	0.00141	0.00144	0.00141
	(A1 * A2 * B2 * X)	-0.00080	-0.00082	-0.00080
	(A1 * A2 * !B2 * X)	0.00136	0.00137	0.00136
	(A1 * A2 * !B2 * X)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * !B2 * !X)	0.00042	0.00042	0.00041
	(A1 * !A2 * !B2 * !X)	-0.00187	-0.00188	-0.00189
	(!A1 * !B2 * !X)	0.00044	0.00044	0.00043
	(!A1 * !B2 * !X)	-0.00187	-0.00188	-0.00189
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00158	0.00161	0.00158
	(A1 * A2 * B2 * X)	-0.00079	-0.00081	-0.00079
	(A1 * A2 * !B2 * X)	0.00152	0.00153	0.00152
	(A1 * A2 * !B2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * !B2 * !X)	0.00046	0.00046	0.00044
	(A1 * !A2 * !B2 * !X)	-0.00190	-0.00191	-0.00193
	(!A1 * !B2 * !X)	0.00047	0.00047	0.00045
	(!A1 * !B2 * !X)	-0.00190	-0.00191	-0.00193
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00262	0.00267	0.00263
	(A1 * A2 * B2 * X)	-0.00157	-0.00160	-0.00157
	(A1 * A2 * !B2 * X)	0.00252	0.00253	0.00253
	(A1 * A2 * !B2 * X)	-0.00156	-0.00158	-0.00157
	(A1 * !A2 * !B2 * !X)	0.00079	0.00079	0.00075
	(A1 * !A2 * !B2 * !X)	-0.00362	-0.00364	-0.00368
	(!A1 * !B2 * !X)	0.00079	0.00079	0.00075
	(!A1 * !B2 * !X)	-0.00363	-0.00364	-0.00368

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)	-0.00129	-0.00131	-0.00140
	(A1 * A2 * B2 * X)	0.00091	0.00091	0.00082
	(A1 * A2 * !B2 * X)	-0.00133	-0.00136	-0.00136
	(A1 * A2 * !B2 * X)	0.00080	0.00080	0.00080
	(A1 * !A2 * !B2 * !X)	-0.00040	-0.00040	-0.00040
	(A1 * !A2 * !B2 * !X)	0.00189	0.00189	0.00189
	(!A1 * !B2 * !X)	-0.00042	-0.00042	-0.00042
	(!A1 * !B2 * !X)	0.00189	0.00189	0.00189
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00146	-0.00147	-0.00157
	(A1 * A2 * B2 * X)	0.00090	0.00090	0.00082
	(A1 * A2 * !B2 * X)	-0.00148	-0.00152	-0.00152
	(A1 * A2 * !B2 * X)	0.00079	0.00079	0.00079
	(A1 * !A2 * !B2 * !X)	-0.00043	-0.00044	-0.00043
	(A1 * !A2 * !B2 * !X)	0.00193	0.00196	0.00194
	(!A1 * !B2 * !X)	-0.00044	-0.00045	-0.00044
	(!A1 * !B2 * !X)	0.00193	0.00196	0.00194
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00236	-0.00240	-0.00260
	(A1 * A2 * B2 * X)	0.00177	0.00179	0.00162
	(A1 * A2 * !B2 * X)	-0.00244	-0.00253	-0.00253
	(A1 * A2 * !B2 * X)	0.00156	0.00158	0.00157
	(A1 * !A2 * !B2 * !X)	-0.00074	-0.00075	-0.00073
	(A1 * !A2 * !B2 * !X)	0.00370	0.00374	0.00369
	(!A1 * !B2 * !X)	-0.00074	-0.00075	-0.00073
	(!A1 * !B2 * !X)	0.00370	0.00374	0.00369

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)	0.00148	0.00150	0.00148
	(A1 * A2 * B1 * X)	-0.00088	-0.00089	-0.00087
	(A1 * A2 * !B1 * X)	0.00142	0.00143	0.00142
	(A1 * A2 * !B1 * X)	-0.00086	-0.00087	-0.00087
	(A1 * !A2 * !B1 * !X)	0.00121	0.00123	0.00122
	(A1 * !A2 * !B1 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !B1 * !X)	0.00129	0.00131	0.00130
	(!A1 * !B1 * !X)	-0.00167	-0.00169	-0.00168
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00156	0.00158	0.00155
	(A1 * A2 * B1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * !B1 * X)	0.00149	0.00149	0.00149
	(A1 * A2 * !B1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * !B1 * !X)	0.00135	0.00137	0.00135
	(A1 * !A2 * !B1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * !X)	0.00138	0.00140	0.00139
	(!A1 * !B1 * !X)	-0.00161	-0.00162	-0.00161
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00287	0.00291	0.00286
	(A1 * A2 * B1 * X)	-0.00174	-0.00176	-0.00173
	(A1 * A2 * !B1 * X)	0.00279	0.00281	0.00278
	(A1 * A2 * !B1 * X)	-0.00171	-0.00172	-0.00172
	(A1 * !A2 * !B1 * !X)	0.00223	0.00225	0.00223
	(A1 * !A2 * !B1 * !X)	-0.00366	-0.00367	-0.00365
	(!A1 * !B1 * !X)	0.00223	0.00224	0.00223
	(!A1 * !B1 * !X)	-0.00366	-0.00367	-0.00365

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)	-0.00136	-0.00137	-0.00147
	(A1 * A2 * B1 * X)	0.00098	0.00098	0.00090
	(A1 * A2 * !B1 * X)	-0.00139	-0.00143	-0.00142
	(A1 * A2 * !B1 * X)	0.00087	0.00088	0.00087
	(A1 * !A2 * !B1 * !X)	-0.00113	-0.00122	-0.00122
	(A1 * !A2 * !B1 * !X)	0.00175	0.00171	0.00169
	(!A1 * !B1 * !X)	-0.00121	-0.00130	-0.00130
	(!A1 * !B1 * !X)	0.00174	0.00170	0.00168
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00143	-0.00144	-0.00153
	(A1 * A2 * B1 * X)	0.00094	0.00094	0.00085
	(A1 * A2 * !B1 * X)	-0.00145	-0.00149	-0.00149
	(A1 * A2 * !B1 * X)	0.00082	0.00083	0.00083
	(A1 * !A2 * !B1 * !X)	-0.00126	-0.00136	-0.00135
	(A1 * !A2 * !B1 * !X)	0.00168	0.00164	0.00162
	(!A1 * !B1 * !X)	-0.00130	-0.00139	-0.00139
	(!A1 * !B1 * !X)	0.00167	0.00163	0.00162
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00261	-0.00263	-0.00283
	(A1 * A2 * B1 * X)	0.00195	0.00195	0.00178
	(A1 * A2 * !B1 * X)	-0.00270	-0.00276	-0.00278
	(A1 * A2 * !B1 * X)	0.00173	0.00173	0.00172
	(A1 * !A2 * !B1 * !X)	-0.00209	-0.00224	-0.00223
	(A1 * !A2 * !B1 * !X)	0.00377	0.00369	0.00367
	(!A1 * !B1 * !X)	-0.00207	-0.00224	-0.00223
	(!A1 * !B1 * !X)	0.00374	0.00369	0.00367

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00231	0.00250	0.00268	0.00287	0.47158
sky130_fd_sc_hs__a2bb2oi_2	0.00253	0.00263	0.00521	0.00526	0.97003
sky130_fd_sc_hs__a2bb2oi_4	0.00399	0.00419	0.01036	0.01057	1.78492

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.07298	0.17777
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.09932	0.22087
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.19329	0.44174

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)	0.11714	0.82005	6.52633
	A2_N->Y (RR)	0.11142	0.79391	6.50050
	B1->Y (FR)	0.10917	1.02542	10.72600
	B2->Y (FR)	0.08535	0.96369	10.33080
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.10608	0.66611	6.55626
	A2_N->Y (RR)	0.10150	0.64949	6.55160
	B1->Y (FR)	0.10005	0.87233	10.85270
	B2->Y (FR)	0.07436	0.83537	10.67900
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.12834	0.63299	6.94736
	A2_N->Y (RR)	0.11721	0.60011	6.90715
	B1->Y (FR)	0.09941	0.75692	10.70070
	B2->Y (FR)	0.07237	0.71645	10.41520

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)	0.12037	0.48061	3.03887
	A2_N->Y (FF)	0.10793	0.46768	2.93957
	B1->Y (RF)	0.03149	0.37393	3.90377
	B2->Y (RF)	0.02816	0.40189	4.30832
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.15367	0.52938	3.38321
	A2_N->Y (FF)	0.14021	0.52346	3.26766
	B1->Y (RF)	0.03232	0.34830	4.30393
	B2->Y (RF)	0.02648	0.37634	4.79893
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.15374	0.50121	3.07570
	A2_N->Y (FF)	0.13165	0.48166	3.05754
	B1->Y (RF)	0.03157	0.29095	4.12055
	B2->Y (RF)	0.02664	0.33109	4.84716

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	0.00888	0.00920	0.02231
	A1_N	0.00576	0.00609	0.01924
	A2_N	0.00737	0.00769	0.02640
	A2_N	0.00498	0.00532	0.02406
	B1	0.00155	0.00145	0.00377
	B1	0.00633	0.00625	0.00859
	B2	0.00097	0.00085	0.00319
	B2	0.00494	0.00485	0.00717
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01316	0.01367	0.02907
	A1_N	0.01102	0.01152	0.02699
	A2_N	0.01138	0.01181	0.03238
	A2_N	0.01012	0.01055	0.03119
	B1	0.00353	0.00328	0.00756
	B1	0.01308	0.01285	0.01720
	B2	0.00194	0.00178	0.00612
	B2	0.00952	0.00938	0.01380
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02384	0.02423	0.04559
	A1_N	0.02128	0.02166	0.04302
	A2_N	0.02038	0.02106	0.05311
	A2_N	0.01923	0.01990	0.05205
	B1	0.00648	0.00602	0.01484
	B1	0.02578	0.02529	0.03432
	B2	0.00375	0.00343	0.01244
	B2	0.01917	0.01885	0.02783

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00467	0.00506	0.01719
	A1_N	0.00767	0.00798	0.02019
	A2_N	0.00463	0.00571	0.02307
	A2_N	0.00687	0.00796	0.02531
	B1	0.00603	0.00596	0.00789
	B1	0.00125	0.00113	0.00308
	B2	0.00519	0.00527	0.00798
	B2	0.00125	0.00133	0.00362
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00788	0.00851	0.02189
	A1_N	0.00978	0.01033	0.02373
	A2_N	0.00810	0.00941	0.02748
	A2_N	0.00908	0.01035	0.02844
	B1	0.01157	0.01129	0.01516
	B1	0.00196	0.00169	0.00527
	B2	0.00949	0.00965	0.01463
	B2	0.00200	0.00209	0.00632
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01662	0.01755	0.03503
	A1_N	0.01874	0.01956	0.03705
	A2_N	0.01616	0.01836	0.05033
	A2_N	0.01681	0.01891	0.05087
	B1	0.02282	0.02228	0.02979
	B1	0.00347	0.00293	0.01044
	B2	0.01872	0.01905	0.02793
	B2	0.00349	0.00375	0.01216

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)	0.00137	0.00117	0.00113
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00140	-0.00162	-0.00164
	(!A2_N * B1 * B2 * !Y)	0.00580	0.00601	0.01869
	(!A2_N * B1 * B2 * !Y)	0.00141	0.00161	0.01433
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00174	0.00154	0.00150
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00135	-0.00158	-0.00159
	(!A2_N * B1 * B2 * !Y)	0.00731	0.00759	0.02228
	(!A2_N * B1 * B2 * !Y)	0.00254	0.00280	0.01752
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00210	0.00164	0.00158
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00267	-0.00322	-0.00325
	(!A2_N * B1 * B2 * !Y)	0.01278	0.01280	0.03397
	(!A2_N * B1 * B2 * !Y)	0.00493	0.00491	0.02617

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)	-0.00112	-0.00112	-0.00112
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00164	0.00164	0.00165
	(!A2_N * B1 * B2 * !Y)	0.00153	0.00164	0.01408
	(!A2_N * B1 * B2 * !Y)	0.00589	0.00602	0.01845
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00149	-0.00149	-0.00149
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00158	0.00159	0.00160
	(!A2_N * B1 * B2 * !Y)	0.00264	0.00272	0.01649
	(!A2_N * B1 * B2 * !Y)	0.00738	0.00747	0.02124
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00157	-0.00158	-0.00156
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00325	0.00327	0.00325
	(!A2_N * B1 * B2 * !Y)	0.00606	0.00599	0.02670
	(!A2_N * B1 * B2 * !Y)	0.01382	0.01377	0.03449

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)	0.00133	0.00136	0.00134
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00082	-0.00084	-0.00082
	(!A1_N * B1 * B2 * !Y)	0.00434	0.00464	0.02326
	(!A1_N * B1 * B2 * !Y)	0.00068	0.00097	0.01960
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00150	0.00153	0.00151
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00082	-0.00083	-0.00082
	(!A1_N * B1 * B2 * !Y)	0.00570	0.00602	0.02649
	(!A1_N * B1 * B2 * !Y)	0.00179	0.00210	0.02260
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00215	0.00218	0.00216
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00167	-0.00169	-0.00167
	(!A1_N * B1 * B2 * !Y)	0.00918	0.00937	0.04049
	(!A1_N * B1 * B2 * !Y)	0.00269	0.00285	0.03401

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)	-0.00129	-0.00130	-0.00133
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00087	0.00087	0.00084
	(!A1_N * B1 * B2 * !Y)	0.00149	0.00239	0.02122
	(!A1_N * B1 * B2 * !Y)	0.00513	0.00604	0.02486
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00146	-0.00147	-0.00150
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00087	0.00087	0.00083
	(!A1_N * B1 * B2 * !Y)	0.00284	0.00367	0.02409
	(!A1_N * B1 * B2 * !Y)	0.00670	0.00755	0.02797
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00200	-0.00202	-0.00214
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00182	0.00182	0.00171
	(!A1_N * B1 * B2 * !Y)	0.00560	0.00699	0.03915
	(!A1_N * B1 * B2 * !Y)	0.01201	0.01341	0.04559

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)	0.00142	0.00143	0.00142
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00178	-0.00179	-0.00179
	(!A1_N * !A2_N * B2 * !Y)	0.00167	0.00151	0.00149
	(!A1_N * !A2_N * B2 * !Y)	-0.00155	-0.00177	-0.00177
	(!A1_N * !A2_N * !B2 * !Y)	0.00142	0.00144	0.00142
	(!A1_N * !A2_N * !B2 * !Y)	-0.00179	-0.00180	-0.00179
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00273	0.00276	0.00275
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00361	-0.00363	-0.00362
	(!A1_N * !A2_N * B2 * !Y)	0.00322	0.00292	0.00287
	(!A1_N * !A2_N * B2 * !Y)	-0.00317	-0.00359	-0.00358
	(!A1_N * !A2_N * !B2 * !Y)	0.00273	0.00278	0.00275
	(!A1_N * !A2_N * !B2 * !Y)	-0.00361	-0.00365	-0.00362
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00544	0.00549	0.00546
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00725	-0.00728	-0.00726
	(!A1_N * !A2_N * B2 * !Y)	0.00651	0.00585	0.00574
	(!A1_N * !A2_N * B2 * !Y)	-0.00628	-0.00718	-0.00716
	(!A1_N * !A2_N * !B2 * !Y)	0.00544	0.00549	0.00546
	(!A1_N * !A2_N * !B2 * !Y)	-0.00725	-0.00726	-0.00726

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)	-0.00135	-0.00143	-0.00142
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00184	0.00181	0.00179
	(!A1_N * !A2_N * B2 * !Y)	-0.00148	-0.00149	-0.00148
	(!A1_N * !A2_N * B2 * !Y)	0.00176	0.00177	0.00177
	(!A1_N * !A2_N * !B2 * !Y)	-0.00138	-0.00143	-0.00142
	(!A1_N * !A2_N * !B2 * !Y)	0.00179	0.00181	0.00179
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00254	-0.00276	-0.00275
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00374	0.00367	0.00363
	(!A1_N * !A2_N * B2 * !Y)	-0.00285	-0.00288	-0.00286
	(!A1_N * !A2_N * B2 * !Y)	0.00355	0.00361	0.00358
	(!A1_N * !A2_N * !B2 * !Y)	-0.00263	-0.00275	-0.00275
	(!A1_N * !A2_N * !B2 * !Y)	0.00362	0.00369	0.00364
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00505	-0.00549	-0.00546
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00753	0.00737	0.00728
	(!A1_N * !A2_N * B2 * !Y)	-0.00574	-0.00575	-0.00572
	(!A1_N * !A2_N * B2 * !Y)	0.00716	0.00720	0.00716
	(!A1_N * !A2_N * !B2 * !Y)	-0.00526	-0.00544	-0.00546
	(!A1_N * !A2_N * !B2 * !Y)	0.00726	0.00726	0.00728

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)	0.00061	0.00061	0.00059
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00211	-0.00212	-0.00214
	(!A1_N * !A2_N * B1 * !Y)	0.00166	0.00151	0.00148
	(!A1_N * !A2_N * B1 * !Y)	-0.00167	-0.00189	-0.00188
	(!A1_N * !A2_N * !B1 * !Y)	0.00141	0.00142	0.00141
	(!A1_N * !A2_N * !B1 * !Y)	-0.00190	-0.00191	-0.00191
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00101	0.00102	0.00097
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00409	-0.00413	-0.00419
	(!A1_N * !A2_N * B1 * !Y)	0.00319	0.00291	0.00286
	(!A1_N * !A2_N * B1 * !Y)	-0.00315	-0.00356	-0.00355
	(!A1_N * !A2_N * !B1 * !Y)	0.00272	0.00273	0.00273
	(!A1_N * !A2_N * !B1 * !Y)	-0.00358	-0.00360	-0.00359
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00190	0.00192	0.00183
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00836	-0.00844	-0.00855
	(!A1_N * !A2_N * B1 * !Y)	0.00645	0.00581	0.00570
	(!A1_N * !A2_N * B1 * !Y)	-0.00628	-0.00720	-0.00719
	(!A1_N * !A2_N * !B1 * !Y)	0.00544	0.00549	0.00547
	(!A1_N * !A2_N * !B1 * !Y)	-0.00726	-0.00731	-0.00729

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)	-0.00059	-0.00058	-0.00058
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00214	0.00215	0.00214
	(!A1_N * !A2_N * B1 * !Y)	-0.00148	-0.00148	-0.00147
	(!A1_N * !A2_N * B1 * !Y)	0.00188	0.00189	0.00188
	(!A1_N * !A2_N * !B1 * !Y)	-0.00137	-0.00142	-0.00141
	(!A1_N * !A2_N * !B1 * !Y)	0.00190	0.00192	0.00191
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00095	-0.00094	-0.00094
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00421	0.00420	0.00420
	(!A1_N * !A2_N * B1 * !Y)	-0.00285	-0.00287	-0.00285
	(!A1_N * !A2_N * B1 * !Y)	0.00352	0.00357	0.00355
	(!A1_N * !A2_N * !B1 * !Y)	-0.00261	-0.00273	-0.00273
	(!A1_N * !A2_N * !B1 * !Y)	0.00358	0.00364	0.00360
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00180	-0.00179	-0.00178
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00859	0.00861	0.00857
	(!A1_N * !A2_N * B1 * !Y)	-0.00567	-0.00572	-0.00568
	(!A1_N * !A2_N * B1 * !Y)	0.00715	0.00724	0.00719
	(!A1_N * !A2_N * !B1 * !Y)	-0.00519	-0.00549	-0.00547
	(!A1_N * !A2_N * !B1 * !Y)	0.00726	0.00738	0.00731

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00228	0.00236	0.00250	0.00242	1.05288
sky130_fd_sc_hs__a2bb2o_2	0.00240	0.00246	0.00262	0.00281	1.85124
sky130_fd_sc_hs__a2bb2o_4	0.00262	0.00278	0.00473	0.00477	3.92227

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.13311	0.23877
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.16357	0.25281
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.25047	0.31098

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)	0.17248	0.84228	8.44312
	A2_N->X (FR)	0.15800	0.82898	8.38148
	B1->X (RR)	0.08471	0.61772	6.33264
	B2->X (RR)	0.08021	0.61411	6.31752
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.17818	0.75630	8.33361
	A2_N->X (FR)	0.16374	0.74337	8.26765
	B1->X (RR)	0.08321	0.53334	6.21960
	B2->X (RR)	0.08024	0.53737	6.22332
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.22093	0.73838	8.61806
	A2_N->X (FR)	0.20824	0.73211	8.55875
	B1->X (RR)	0.09407	0.46934	6.37740
	B2->X (RR)	0.08848	0.47048	6.38063

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)	0.16699	0.43568	2.22217
	A2_N->X (RF)	0.15972	0.41263	2.15959
	B1->X (FF)	0.15842	0.61308	4.64525
	B2->X (FF)	0.13487	0.57557	4.56804
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.20095	0.44700	2.04273
	A2_N->X (RF)	0.19332	0.41960	1.97095
	B1->X (FF)	0.19192	0.63771	4.60876
	B2->X (FF)	0.16967	0.60374	4.51619
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.19522	0.41908	2.28222
	A2_N->X (RF)	0.18664	0.39590	2.21524
	B1->X (FF)	0.19370	0.61324	4.88276
	B2->X (FF)	0.16741	0.57408	4.78732

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	0.00802	0.00831	0.02067
	A1_N	0.01081	0.01111	0.02369
	A2_N	0.00796	0.00902	0.02866
	A2_N	0.01000	0.01108	0.03215
	B1	0.00923	0.00951	0.02171
	B1	0.00449	0.00476	0.01715
	B2	0.00823	0.00872	0.02318
	B2	0.00451	0.00500	0.01964
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01057	0.01128	0.02325
	A1_N	0.01358	0.01427	0.02643
	A2_N	0.01062	0.01206	0.03165
	A2_N	0.01270	0.01416	0.03416
	B1	0.01193	0.01249	0.02464
	B1	0.00713	0.00771	0.02044
	B2	0.01107	0.01173	0.02585
	B2	0.00715	0.00783	0.02251
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01759	0.01867	0.03208
	A1_N	0.01973	0.02094	0.03458
	A2_N	0.01751	0.01929	0.03939
	A2_N	0.01876	0.02064	0.04095
	B1	0.02193	0.02292	0.04648
	B1	0.01299	0.01409	0.03830
	B2	0.02011	0.02146	0.04958
	B2	0.01303	0.01449	0.04326

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01173	0.01205	0.02497
	A1_N	0.00886	0.00916	0.02205
	A2_N	0.01006	0.01055	0.02942
	A2_N	0.00796	0.00846	0.02723
	B1	0.00452	0.00475	0.01682
	B1	0.00924	0.00945	0.02147
	B2	0.00428	0.00442	0.01774
	B2	0.00802	0.00816	0.02137
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01432	0.01479	0.02733
	A1_N	0.01125	0.01171	0.02419
	A2_N	0.01269	0.01333	0.03201
	A2_N	0.01049	0.01107	0.02967
	B1	0.00706	0.00732	0.01948
	B1	0.01183	0.01208	0.02401
	B2	0.00662	0.00687	0.01938
	B2	0.01057	0.01079	0.02332
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.02437	0.02539	0.04099
	A1_N	0.02195	0.02292	0.03822
	A2_N	0.02235	0.02363	0.04494
	A2_N	0.02079	0.02202	0.04271
	B1	0.01490	0.01545	0.04036
	B1	0.02376	0.02424	0.04716
	B2	0.01367	0.01422	0.04193
	B2	0.02080	0.02134	0.04602

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)	0.00146	0.00125	0.00121
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00130	-0.00153	-0.00155
	(!A2_N * B1 * B2 * X)	0.00559	0.00581	0.01851
	(!A2_N * B1 * B2 * X)	0.00138	0.00157	0.01431
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00151	0.00129	0.00126
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00138	-0.00162	-0.00164
	(!A2_N * B1 * B2 * X)	0.00573	0.00592	0.01849
	(!A2_N * B1 * B2 * X)	0.00129	0.00146	0.01407
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00165	0.00145	0.00142
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00151	-0.00176	-0.00176
	(!A2_N * B1 * B2 * X)	0.00744	0.00771	0.02216
	(!A2_N * B1 * B2 * X)	0.00244	0.00271	0.01721

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)	-0.00120	-0.00120	-0.00120
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00155	0.00156	0.00156
	(!A2_N * B1 * B2 * X)	0.00150	0.00162	0.01406
	(!A2_N * B1 * B2 * X)	0.00570	0.00584	0.01827
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00125	-0.00125	-0.00124
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00164	0.00164	0.00164
	(!A2_N * B1 * B2 * X)	0.00141	0.00152	0.01383
	(!A2_N * B1 * B2 * X)	0.00582	0.00593	0.01825
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00141	-0.00141	-0.00140
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00176	0.00178	0.00176
	(!A2_N * B1 * B2 * X)	0.00128	0.00132	0.01499
	(!A2_N * B1 * B2 * X)	0.00623	0.00628	0.01995

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)	0.00133	0.00135	0.00133
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00078	-0.00080	-0.00078
	(!A1_N * B1 * B2 * X)	0.00405	0.00441	0.02294
	(!A1_N * B1 * B2 * X)	0.00060	0.00094	0.01950
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00134	0.00137	0.00134
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1_N * B1 * B2 * X)	0.00414	0.00447	0.02297
	(!A1_N * B1 * B2 * X)	0.00058	0.00090	0.01942
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00159	0.00162	0.00159
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00086	-0.00088	-0.00087
	(!A1_N * B1 * B2 * X)	0.00578	0.00611	0.02567
	(!A1_N * B1 * B2 * X)	0.00163	0.00194	0.02154

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)	-0.00128	-0.00129	-0.00132
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00083	0.00083	0.00080
	(!A1_N * B1 * B2 * X)	0.00147	0.00239	0.02109
	(!A1_N * B1 * B2 * X)	0.00491	0.00583	0.02454
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00130	-0.00130	-0.00134
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00083	0.00083	0.00080
	(!A1_N * B1 * B2 * X)	0.00144	0.00235	0.02099
	(!A1_N * B1 * B2 * X)	0.00498	0.00590	0.02453
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00154	-0.00155	-0.00158
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00092	0.00092	0.00089
	(!A1_N * B1 * B2 * X)	0.00125	0.00205	0.02145
	(!A1_N * B1 * B2 * X)	0.00537	0.00616	0.02556

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)	0.00149	0.00150	0.00149
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00162	-0.00163	-0.00162
	(!A1_N * !A2_N * B2 * X)	0.00172	0.00156	0.00154
	(!A1_N * !A2_N * B2 * X)	-0.00142	-0.00161	-0.00161
	(!A1_N * !A2_N * !B2 * X)	0.00149	0.00150	0.00149
	(!A1_N * !A2_N * !B2 * X)	-0.00163	-0.00163	-0.00163
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00143	0.00144	0.00144
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00165	-0.00166	-0.00166
	(!A1_N * !A2_N * B2 * X)	0.00169	0.00153	0.00150
	(!A1_N * !A2_N * B2 * X)	-0.00142	-0.00163	-0.00164
	(!A1_N * !A2_N * !B2 * X)	0.00143	0.00145	0.00143
	(!A1_N * !A2_N * !B2 * X)	-0.00165	-0.00167	-0.00166
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00240	0.00243	0.00242
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00331	-0.00333	-0.00332
	(!A1_N * !A2_N * B2 * X)	0.00295	0.00259	0.00254
	(!A1_N * !A2_N * B2 * X)	-0.00281	-0.00328	-0.00329
	(!A1_N * !A2_N * !B2 * X)	0.00241	0.00245	0.00242
	(!A1_N * !A2_N * !B2 * X)	-0.00331	-0.00334	-0.00332

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)	-0.00141	-0.00149	-0.00149
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00167	0.00165	0.00163
	(!A1_N * !A2_N * B2 * X)	-0.00153	-0.00153	-0.00153
	(!A1_N * !A2_N * B2 * X)	0.00161	0.00162	0.00161
	(!A1_N * !A2_N * !B2 * X)	-0.00145	-0.00148	-0.00149
	(!A1_N * !A2_N * !B2 * X)	0.00163	0.00163	0.00163
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00134	-0.00143	-0.00144
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00172	0.00168	0.00167
	(!A1_N * !A2_N * B2 * X)	-0.00149	-0.00149	-0.00149
	(!A1_N * !A2_N * B2 * X)	0.00163	0.00163	0.00164
	(!A1_N * !A2_N * !B2 * X)	-0.00139	-0.00143	-0.00143
	(!A1_N * !A2_N * !B2 * X)	0.00166	0.00168	0.00167
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00222	-0.00242	-0.00242
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00344	0.00337	0.00333
	(!A1_N * !A2_N * B2 * X)	-0.00253	-0.00253	-0.00252
	(!A1_N * !A2_N * B2 * X)	0.00328	0.00330	0.00329
	(!A1_N * !A2_N * !B2 * X)	-0.00232	-0.00241	-0.00242
	(!A1_N * !A2_N * !B2 * X)	0.00332	0.00334	0.00333

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)	0.00056	0.00056	0.00054
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00184	-0.00185	-0.00187
	(!A1_N * !A2_N * B1 * X)	0.00139	0.00122	0.00119
	(!A1_N * !A2_N * B1 * X)	-0.00154	-0.00175	-0.00176
	(!A1_N * !A2_N * !B1 * X)	0.00114	0.00115	0.00114
	(!A1_N * !A2_N * !B1 * X)	-0.00178	-0.00178	-0.00177
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00055	0.00055	0.00053
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00200	-0.00201	-0.00203
	(!A1_N * !A2_N * B1 * X)	0.00168	0.00151	0.00147
	(!A1_N * !A2_N * B1 * X)	-0.00149	-0.00173	-0.00174
	(!A1_N * !A2_N * !B1 * X)	0.00140	0.00140	0.00140
	(!A1_N * !A2_N * !B1 * X)	-0.00176	-0.00177	-0.00176
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00093	0.00094	0.00090
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00371	-0.00374	-0.00380
	(!A1_N * !A2_N * B1 * X)	0.00293	0.00259	0.00254
	(!A1_N * !A2_N * B1 * X)	-0.00282	-0.00328	-0.00328
	(!A1_N * !A2_N * !B1 * X)	0.00242	0.00241	0.00242
	(!A1_N * !A2_N * !B1 * X)	-0.00331	-0.00331	-0.00331

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)	-0.00053	-0.00054	-0.00053
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00187	0.00191	0.00188
	(!A1_N * !A2_N * B1 * X)	-0.00119	-0.00119	-0.00118
	(!A1_N * !A2_N * B1 * X)	0.00175	0.00176	0.00176
	(!A1_N * !A2_N * !B1 * X)	-0.00111	-0.00114	-0.00114
	(!A1_N * !A2_N * !B1 * X)	0.00178	0.00178	0.00178
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00053	-0.00053	-0.00052
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00204	0.00207	0.00203
	(!A1_N * !A2_N * B1 * X)	-0.00147	-0.00148	-0.00147
	(!A1_N * !A2_N * B1 * X)	0.00173	0.00175	0.00174
	(!A1_N * !A2_N * !B1 * X)	-0.00136	-0.00140	-0.00140
	(!A1_N * !A2_N * !B1 * X)	0.00176	0.00178	0.00177
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00088	-0.00089	-0.00087
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00383	0.00387	0.00382
	(!A1_N * !A2_N * B1 * X)	-0.00253	-0.00253	-0.00252
	(!A1_N * !A2_N * B1 * X)	0.00328	0.00330	0.00328
	(!A1_N * !A2_N * !B1 * X)	-0.00230	-0.00241	-0.00242
	(!A1_N * !A2_N * !B1 * X)	0.00331	0.00334	0.00333

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00287	0.00291	0.00283	0.00299	0.00285	0.32784
sky130_fd_sc_hs__a311oi_2	0.00544	0.00523	0.00504	0.00434	0.00423	0.61533
sky130_fd_sc_hs__a311oi_4	0.01052	0.01020	0.01021	0.00815	0.00828	1.12091

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	0.02215	0.05642
sky130_fd_sc_hs__a311oi_2	0.00000	0.04160	0.11284
sky130_fd_sc_hs__a311oi_4	0.00000	0.08319	0.22568

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)	0.16725	1.12703	10.07350
	A2->Y (FR)	0.20770	1.19727	10.36540
	A3->Y (FR)	0.22540	1.19997	10.19980
	B1->Y (FR)	0.18031	1.19515	10.95120
	C1->Y (FR)	0.13933	1.14959	10.87700
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.14188	0.95254	9.97031
	A2->Y (FR)	0.17613	0.99215	10.06000
	A3->Y (FR)	0.20847	1.02910	10.10290
	B1->Y (FR)	0.17839	1.02942	10.75500
	C1->Y (FR)	0.12843	0.97266	10.68940
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.13345	0.80938	9.68193
	A2->Y (FR)	0.17278	0.85771	9.86608
	A3->Y (FR)	0.21084	0.90925	10.04110
	B1->Y (FR)	0.17812	0.91051	10.77910
	C1->Y (FR)	0.12833	0.86176	10.76150

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.04442	0.44176	4.05632
	A2->Y (RF)	0.05199	0.42422	3.79365
	A3->Y (RF)	0.05505	0.38373	3.28876
	B1->Y (RF)	0.02504	0.29941	2.73928
	C1->Y (RF)	0.02188	0.29058	2.73690
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.04000	0.42710	4.50418
	A2->Y (RF)	0.04750	0.38085	3.89766
	A3->Y (RF)	0.05264	0.34581	3.35865
	B1->Y (RF)	0.03253	0.38010	4.16184
	C1->Y (RF)	0.02451	0.36112	4.13420
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.03977	0.38280	4.54118
	A2->Y (RF)	0.04818	0.33991	3.89938
	A3->Y (RF)	0.05297	0.29563	3.21776
	B1->Y (RF)	0.02959	0.31946	3.95244
	C1->Y (RF)	0.02351	0.31743	4.20136

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00059	0.00036	0.00251
	A1	0.00751	0.00726	0.00943
	A2	0.00120	0.00094	0.00309
	A2	0.00908	0.00883	0.01099
	A3	0.00145	0.00127	0.00342
	A3	0.01031	0.01012	0.01229
	B1	0.00040	0.00026	0.00354
	B1	0.00924	0.00901	0.01190
	C1	0.00029	0.00053	0.00699
	C1	0.00686	0.00702	0.01336
sky130_fd_sc_hs__a311oi_2	A1	0.00009	-0.00029	0.00374
	A1	0.01292	0.01255	0.01659
	A2	0.00130	0.00089	0.00490
	A2	0.01587	0.01550	0.01947
	A3	0.00264	0.00228	0.00630
	A3	0.01893	0.01861	0.02259
	B1	0.00080	0.00069	0.00435
	B1	0.01621	0.01601	0.01921
	C1	0.00065	0.00108	0.00924
	C1	0.01406	0.01455	0.02166

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00042	-0.00117	0.00721
	A1	0.02459	0.02391	0.03225
	A2	0.00204	0.00114	0.00935
	A2	0.03070	0.02983	0.03801
	A3	0.00437	0.00366	0.01187
	A3	0.03684	0.03611	0.04430
	B1	0.00100	0.00083	0.00851
	B1	0.03113	0.03075	0.03746
	C1	0.00071	0.00172	0.01734
	C1	0.02716	0.02759	0.04181

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00919	0.00914	0.01155
	A1	0.00240	0.00233	0.00477
	A2	0.01019	0.01004	0.01203
	A2	0.00238	0.00217	0.00416
	A3	0.01118	0.01099	0.01306
	A3	0.00234	0.00213	0.00420
	B1	0.00864	0.00868	0.01166
	B1	0.00086	0.00084	0.00411
	C1	0.00581	0.00596	0.00906
	C1	-0.00011	-0.00001	0.00318

sky130_fd_sc_hs__a311oi_2	**A1**	0.01718	0.01695	0.02179
	A1	0.00471	0.00438	0.00905
	A2	0.01908	0.01868	0.02286
	A2	0.00474	0.00435	0.00825
	A3	0.02096	0.02058	0.02471
	A3	0.00472	0.00431	0.00835
	B1	0.01429	0.01419	0.01828
	B1	0.00142	0.00123	0.00536
	C1	0.00764	0.00791	0.01223
	C1	-0.00124	-0.00074	0.00306
sky130_fd_sc_hs__a311oi_4	**A1**	0.03316	0.03252	0.04213
	A1	0.00877	0.00815	0.01739
	A2	0.03700	0.03624	0.04413
	A2	0.00874	0.00791	0.01577
	A3	0.04107	0.04025	0.04890
	A3	0.00867	0.00784	0.01619
	B1	0.02763	0.02749	0.03567
	B1	0.00225	0.00190	0.01046
	C1	0.01486	0.01535	0.02358
	C1	-0.00258	-0.00169	0.00600

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)**	0.00150	0.00150	0.00148
	(A2 * A3 * B1 * C1 * !Y)	-0.00164	-0.00173	-0.00172
	(A2 * A3 * B1 * !C1 * !Y)	0.00150	0.00150	0.00148
	(A2 * A3 * B1 * !C1 * !Y)	-0.00163	-0.00173	-0.00172
	(A2 * A3 * !B1 * C1 * !Y)	0.00151	0.00150	0.00148
	(A2 * A3 * !B1 * C1 * !Y)	-0.00153	-0.00168	-0.00167
	(A2 * !A3 * B1 * C1 * !Y)	0.00138	0.00139	0.00138
	(A2 * !A3 * B1 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(A2 * !A3 * B1 * !C1 * !Y)	0.00139	0.00140	0.00139
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00176	-0.00177	-0.00176
	(A2 * !A3 * !B1 * C1 * !Y)	0.00139	0.00139	0.00139
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(A2 * !A3 * !B1 * !C1 * Y)	0.00046	0.00046	0.00043
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00207	-0.00208	-0.00214
	(!A2 * B1 * C1 * !Y)	0.00142	0.00143	0.00142
	(!A2 * B1 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(!A2 * B1 * !C1 * !Y)	0.00141	0.00143	0.00142
	(!A2 * B1 * !C1 * !Y)	-0.00176	-0.00177	-0.00176
	(!A2 * !B1 * C1 * !Y)	0.00142	0.00143	0.00142
	(!A2 * !B1 * C1 * !Y)	-0.00177	-0.00177	-0.00176
	(!A2 * !B1 * !C1 * Y)	0.00047	0.00047	0.00045
	(!A2 * !B1 * !C1 * Y)	-0.00211	-0.00212	-0.00214

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00289	0.00293	0.00290
	(A2 * A3 * B1 * C1 * !Y)	-0.00341	-0.00360	-0.00357
	(A2 * A3 * B1 * !C1 * !Y)	0.00290	0.00293	0.00290
	(A2 * A3 * B1 * !C1 * !Y)	-0.00339	-0.00359	-0.00357
	(A2 * A3 * !B1 * C1 * !Y)	0.00293	0.00293	0.00290
	(A2 * A3 * !B1 * C1 * !Y)	-0.00322	-0.00350	-0.00347
	(A2 * !A3 * B1 * C1 * !Y)	0.00273	0.00274	0.00272
	(A2 * !A3 * B1 * C1 * !Y)	-0.00369	-0.00369	-0.00368
	(A2 * !A3 * B1 * !C1 * !Y)	0.00273	0.00274	0.00273
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00368	-0.00369	-0.00368
	(A2 * !A3 * !B1 * C1 * !Y)	0.00273	0.00275	0.00273
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00368	-0.00370	-0.00368
	(A2 * !A3 * !B1 * !C1 * Y)	0.00101	0.00101	0.00093
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00412	-0.00415	-0.00431
	(!A2 * B1 * C1 * !Y)	0.00276	0.00278	0.00278
	(!A2 * B1 * C1 * !Y)	-0.00366	-0.00368	-0.00368
	(!A2 * B1 * !C1 * !Y)	0.00279	0.00280	0.00279
	(!A2 * B1 * !C1 * !Y)	-0.00369	-0.00368	-0.00368
	(!A2 * !B1 * C1 * !Y)	0.00277	0.00280	0.00279
	(!A2 * !B1 * C1 * !Y)	-0.00366	-0.00369	-0.00368
	(!A2 * !B1 * !C1 * Y)	0.00099	0.00100	0.00096
	(!A2 * !B1 * !C1 * Y)	-0.00424	-0.00427	-0.00433

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00570	0.00574	0.00567
	(A2 * A3 * B1 * C1 * !Y)	-0.00682	-0.00716	-0.00709
	(A2 * A3 * B1 * !C1 * !Y)	0.00570	0.00574	0.00567
	(A2 * A3 * B1 * !C1 * !Y)	-0.00675	-0.00712	-0.00709
	(A2 * A3 * !B1 * C1 * !Y)	0.00576	0.00575	0.00568
	(A2 * A3 * !B1 * C1 * !Y)	-0.00638	-0.00688	-0.00688
	(A2 * !A3 * B1 * C1 * !Y)	0.00531	0.00537	0.00534
	(A2 * !A3 * B1 * C1 * !Y)	-0.00725	-0.00731	-0.00728
	(A2 * !A3 * B1 * !C1 * !Y)	0.00532	0.00537	0.00534
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00727	-0.00731	-0.00728
	(A2 * !A3 * !B1 * C1 * !Y)	0.00522	0.00526	0.00524
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00727	-0.00730	-0.00728
	(A2 * !A3 * !B1 * !C1 * Y)	0.00191	0.00191	0.00175
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00817	-0.00822	-0.00850
	(!A2 * B1 * C1 * !Y)	0.00537	0.00546	0.00541
	(!A2 * B1 * C1 * !Y)	-0.00724	-0.00732	-0.00728
	(!A2 * B1 * !C1 * !Y)	0.00541	0.00545	0.00541
	(!A2 * B1 * !C1 * !Y)	-0.00727	-0.00731	-0.00728
	(!A2 * !B1 * C1 * !Y)	0.00538	0.00542	0.00540
	(!A2 * !B1 * C1 * !Y)	-0.00727	-0.00730	-0.00728
	(!A2 * !B1 * !C1 * Y)	0.00191	0.00191	0.00183
	(!A2 * !B1 * !C1 * Y)	-0.00840	-0.00845	-0.00854

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)**	-0.00149	-0.00149	-0.00148
	(A2 * A3 * B1 * C1 * !Y)	0.00172	0.00173	0.00172
	(A2 * A3 * B1 * !C1 * !Y)	-0.00148	-0.00149	-0.00148
	(A2 * A3 * B1 * !C1 * !Y)	0.00171	0.00173	0.00172
	(A2 * A3 * !B1 * C1 * !Y)	-0.00149	-0.00149	-0.00148
	(A2 * A3 * !B1 * C1 * !Y)	0.00168	0.00168	0.00167
	(A2 * !A3 * B1 * C1 * !Y)	-0.00128	-0.00139	-0.00138
	(A2 * !A3 * B1 * C1 * !Y)	0.00176	0.00178	0.00177
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00127	-0.00140	-0.00139
	(A2 * !A3 * B1 * !C1 * !Y)	0.00176	0.00179	0.00177
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00126	-0.00139	-0.00139
	(A2 * !A3 * !B1 * C1 * !Y)	0.00176	0.00178	0.00177
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00043	-0.00044	-0.00043
	(A2 * !A3 * !B1 * !C1 * Y)	0.00214	0.00218	0.00215
	(!A2 * B1 * C1 * !Y)	-0.00138	-0.00143	-0.00142
	(!A2 * B1 * C1 * !Y)	0.00176	0.00179	0.00177
	(!A2 * B1 * !C1 * !Y)	-0.00138	-0.00143	-0.00142
	(!A2 * B1 * !C1 * !Y)	0.00177	0.00179	0.00177
	(!A2 * !B1 * C1 * !Y)	-0.00138	-0.00143	-0.00142
	(!A2 * !B1 * C1 * !Y)	0.00177	0.00178	0.00177
	(!A2 * !B1 * !C1 * Y)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * !C1 * Y)	0.00214	0.00218	0.00215

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00289	-0.00290	-0.00289
	(A2 * A3 * B1 * C1 * !Y)	0.00356	0.00360	0.00357
	(A2 * A3 * B1 * !C1 * !Y)	-0.00289	-0.00290	-0.00289
	(A2 * A3 * B1 * !C1 * !Y)	0.00356	0.00359	0.00357
	(A2 * A3 * !B1 * C1 * !Y)	-0.00289	-0.00291	-0.00290
	(A2 * A3 * !B1 * C1 * !Y)	0.00346	0.00350	0.00347
	(A2 * !A3 * B1 * C1 * !Y)	-0.00249	-0.00273	-0.00272
	(A2 * !A3 * B1 * C1 * !Y)	0.00369	0.00371	0.00369
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00244	-0.00274	-0.00273
	(A2 * !A3 * B1 * !C1 * !Y)	0.00368	0.00372	0.00369
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00242	-0.00275	-0.00273
	(A2 * !A3 * !B1 * C1 * !Y)	0.00368	0.00372	0.00369
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00091	-0.00093	-0.00091
	(A2 * !A3 * !B1 * !C1 * Y)	0.00432	0.00440	0.00433
	(!A2 * B1 * C1 * !Y)	-0.00268	-0.00278	-0.00278
	(!A2 * B1 * C1 * !Y)	0.00367	0.00370	0.00369
	(!A2 * B1 * !C1 * !Y)	-0.00269	-0.00280	-0.00279
	(!A2 * B1 * !C1 * !Y)	0.00369	0.00372	0.00369
	(!A2 * !B1 * C1 * !Y)	-0.00269	-0.00280	-0.00279
	(!A2 * !B1 * C1 * !Y)	0.00369	0.00372	0.00369
	(!A2 * !B1 * !C1 * Y)	-0.00094	-0.00095	-0.00093
	(!A2 * !B1 * !C1 * Y)	0.00434	0.00440	0.00433

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00567	-0.00569	-0.00566
	(A2 * A3 * B1 * C1 * !Y)	0.00710	0.00716	0.00709
	(A2 * A3 * B1 * !C1 * !Y)	-0.00567	-0.00568	-0.00566
	(A2 * A3 * B1 * !C1 * !Y)	0.00709	0.00712	0.00709
	(A2 * A3 * !B1 * C1 * !Y)	-0.00566	-0.00567	-0.00567
	(A2 * A3 * !B1 * C1 * !Y)	0.00686	0.00688	0.00688
	(A2 * !A3 * B1 * C1 * !Y)	-0.00474	-0.00537	-0.00534
	(A2 * !A3 * B1 * C1 * !Y)	0.00725	0.00736	0.00730
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00471	-0.00537	-0.00534
	(A2 * !A3 * B1 * !C1 * !Y)	0.00731	0.00737	0.00730
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00462	-0.00526	-0.00524
	(A2 * !A3 * !B1 * C1 * !Y)	0.00728	0.00738	0.00730
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00174	-0.00174	-0.00172
	(A2 * !A3 * !B1 * !C1 * Y)	0.00855	0.00856	0.00855
	(!A2 * B1 * C1 * !Y)	-0.00524	-0.00546	-0.00541
	(!A2 * B1 * C1 * !Y)	0.00728	0.00737	0.00730
	(!A2 * B1 * !C1 * !Y)	-0.00522	-0.00545	-0.00541
	(!A2 * B1 * !C1 * !Y)	0.00727	0.00737	0.00730
	(!A2 * !B1 * C1 * !Y)	-0.00525	-0.00542	-0.00540
	(!A2 * !B1 * C1 * !Y)	0.00731	0.00735	0.00730
	(!A2 * !B1 * !C1 * Y)	-0.00179	-0.00179	-0.00178
	(!A2 * !B1 * !C1 * Y)	0.00856	0.00858	0.00855

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)**	0.00156	0.00157	0.00155
	(A1 * A3 * B1 * C1 * !Y)	-0.00163	-0.00173	-0.00172
	(A1 * A3 * B1 * !C1 * !Y)	0.00156	0.00157	0.00155
	(A1 * A3 * B1 * !C1 * !Y)	-0.00163	-0.00173	-0.00172
	(A1 * A3 * !B1 * C1 * !Y)	0.00157	0.00156	0.00155
	(A1 * A3 * !B1 * C1 * !Y)	-0.00154	-0.00168	-0.00167
	(A1 * !A3 * B1 * C1 * !Y)	0.00148	0.00150	0.00148
	(A1 * !A3 * B1 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(A1 * !A3 * B1 * !C1 * !Y)	0.00148	0.00149	0.00148
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00176	-0.00177	-0.00176
	(A1 * !A3 * !B1 * C1 * !Y)	0.00148	0.00149	0.00148
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(A1 * !A3 * !B1 * !C1 * Y)	0.00056	0.00055	0.00056
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00195	-0.00196	-0.00195
	(!A1 * A3 * B1 * !Y)	0.00148	0.00149	0.00149
	(!A1 * A3 * B1 * !Y)	-0.00176	-0.00176	-0.00176
	(!A1 * A3 * !B1 * C1 * !Y)	0.00148	0.00150	0.00149
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00175	-0.00177	-0.00176
	(!A1 * A3 * !B1 * !C1 * Y)	0.00129	0.00132	0.00130
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00194	-0.00196	-0.00195
	(!A1 * !A3 * B1 * !Y)	0.00090	0.00091	0.00090
	(!A1 * !A3 * B1 * !Y)	-0.00176	-0.00177	-0.00176
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00090	0.00091	0.00090
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00176	-0.00177	-0.00176
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00065	0.00066	0.00065
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00195	-0.00196	-0.00196

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00285	0.00289	0.00285
	(A1 * A3 * B1 * C1 * !Y)	-0.00337	-0.00356	-0.00354
	(A1 * A3 * B1 * !C1 * !Y)	0.00286	0.00289	0.00286
	(A1 * A3 * B1 * !C1 * !Y)	-0.00336	-0.00356	-0.00354
	(A1 * A3 * !B1 * C1 * !Y)	0.00289	0.00289	0.00286
	(A1 * A3 * !B1 * C1 * !Y)	-0.00319	-0.00346	-0.00344
	(A1 * !A3 * B1 * C1 * !Y)	0.00274	0.00276	0.00274
	(A1 * !A3 * B1 * C1 * !Y)	-0.00365	-0.00366	-0.00364
	(A1 * !A3 * B1 * !C1 * !Y)	0.00273	0.00274	0.00273
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00365	-0.00365	-0.00364
	(A1 * !A3 * !B1 * C1 * !Y)	0.00272	0.00274	0.00273
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00364	-0.00365	-0.00364
	(A1 * !A3 * !B1 * !C1 * Y)	0.00123	0.00124	0.00124
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00364	-0.00366	-0.00364
	(!A1 * A3 * B1 * !Y)	0.00272	0.00274	0.00273
	(!A1 * A3 * B1 * !Y)	-0.00362	-0.00365	-0.00364
	(!A1 * A3 * !B1 * C1 * !Y)	0.00272	0.00274	0.00273
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00363	-0.00365	-0.00364
	(!A1 * A3 * !B1 * !C1 * Y)	0.00272	0.00275	0.00273
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00364	-0.00366	-0.00364
	(!A1 * !A3 * B1 * !Y)	0.00159	0.00159	0.00159
	(!A1 * !A3 * B1 * !Y)	-0.00363	-0.00364	-0.00364
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00159	0.00160	0.00159
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00364	-0.00365	-0.00364
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00146	0.00146	0.00146
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00367	-0.00367	-0.00368

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00568	0.00575	0.00569
	(A1 * A3 * B1 * C1 * !Y)	-0.00672	-0.00707	-0.00703
	(A1 * A3 * B1 * !C1 * !Y)	0.00570	0.00575	0.00569
	(A1 * A3 * B1 * !C1 * !Y)	-0.00668	-0.00709	-0.00704
	(A1 * A3 * !B1 * C1 * !Y)	0.00577	0.00576	0.00570
	(A1 * A3 * !B1 * C1 * !Y)	-0.00634	-0.00689	-0.00683
	(A1 * !A3 * B1 * C1 * !Y)	0.00541	0.00544	0.00542
	(A1 * !A3 * B1 * C1 * !Y)	-0.00724	-0.00725	-0.00723
	(A1 * !A3 * B1 * !C1 * !Y)	0.00534	0.00537	0.00536
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00722	-0.00724	-0.00723
	(A1 * !A3 * !B1 * C1 * !Y)	0.00534	0.00537	0.00536
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00722	-0.00725	-0.00722
	(A1 * !A3 * !B1 * !C1 * Y)	0.00236	0.00238	0.00238
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00721	-0.00725	-0.00721
	(!A1 * A3 * B1 * !Y)	0.00546	0.00550	0.00548
	(!A1 * A3 * B1 * !Y)	-0.00721	-0.00725	-0.00723
	(!A1 * A3 * !B1 * C1 * !Y)	0.00546	0.00551	0.00548
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00721	-0.00725	-0.00722
	(!A1 * A3 * !B1 * !C1 * Y)	0.00546	0.00550	0.00548
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00721	-0.00724	-0.00722
	(!A1 * !A3 * B1 * !Y)	0.00303	0.00304	0.00304
	(!A1 * !A3 * B1 * !Y)	-0.00720	-0.00723	-0.00723
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00303	0.00305	0.00304
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00720	-0.00724	-0.00723
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00279	0.00280	0.00279
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00727	-0.00728	-0.00728

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)**	-0.00155	-0.00156	-0.00155
	(A1 * A3 * B1 * C1 * !Y)	0.00172	0.00173	0.00172
	(A1 * A3 * B1 * !C1 * !Y)	-0.00155	-0.00155	-0.00155
	(A1 * A3 * B1 * !C1 * !Y)	0.00172	0.00173	0.00172
	(A1 * A3 * !B1 * C1 * !Y)	-0.00154	-0.00155	-0.00155
	(A1 * A3 * !B1 * C1 * !Y)	0.00166	0.00168	0.00167
	(A1 * !A3 * B1 * C1 * !Y)	-0.00144	-0.00149	-0.00148
	(A1 * !A3 * B1 * C1 * !Y)	0.00176	0.00178	0.00177
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00144	-0.00149	-0.00148
	(A1 * !A3 * B1 * !C1 * !Y)	0.00176	0.00178	0.00177
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00144	-0.00149	-0.00148
	(A1 * !A3 * !B1 * C1 * !Y)	0.00177	0.00178	0.00177
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00052	-0.00053	-0.00054
	(A1 * !A3 * !B1 * !C1 * Y)	0.00199	0.00203	0.00197
	(!A1 * A3 * B1 * !Y)	-0.00144	-0.00149	-0.00149
	(!A1 * A3 * B1 * !Y)	0.00176	0.00178	0.00177
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00144	-0.00150	-0.00149
	(!A1 * A3 * !B1 * C1 * !Y)	0.00176	0.00178	0.00177
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00119	-0.00130	-0.00130
	(!A1 * A3 * !B1 * !C1 * Y)	0.00202	0.00197	0.00196
	(!A1 * !A3 * B1 * !Y)	-0.00090	-0.00091	-0.00090
	(!A1 * !A3 * B1 * !Y)	0.00177	0.00179	0.00177
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00090	-0.00091	-0.00090
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00177	0.00179	0.00177
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00065	-0.00066	-0.00065
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00204	0.00206	0.00198

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00284	-0.00286	-0.00285
	(A1 * A3 * B1 * C1 * !Y)	0.00352	0.00356	0.00354
	(A1 * A3 * B1 * !C1 * !Y)	-0.00284	-0.00286	-0.00285
	(A1 * A3 * B1 * !C1 * !Y)	0.00352	0.00356	0.00354
	(A1 * A3 * !B1 * C1 * !Y)	-0.00285	-0.00286	-0.00285
	(A1 * A3 * !B1 * C1 * !Y)	0.00342	0.00346	0.00344
	(A1 * !A3 * B1 * C1 * !Y)	-0.00261	-0.00276	-0.00274
	(A1 * !A3 * B1 * C1 * !Y)	0.00365	0.00369	0.00365
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00261	-0.00274	-0.00273
	(A1 * !A3 * B1 * !C1 * !Y)	0.00365	0.00369	0.00365
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00260	-0.00273	-0.00273
	(A1 * !A3 * !B1 * C1 * !Y)	0.00364	0.00367	0.00365
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00118	-0.00119	-0.00120
	(A1 * !A3 * !B1 * !C1 * Y)	0.00376	0.00381	0.00368
	(!A1 * A3 * B1 * !Y)	-0.00263	-0.00274	-0.00273
	(!A1 * A3 * B1 * !Y)	0.00362	0.00368	0.00365
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00265	-0.00274	-0.00273
	(!A1 * A3 * !B1 * C1 * !Y)	0.00366	0.00368	0.00365
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00251	-0.00275	-0.00273
	(!A1 * A3 * !B1 * !C1 * Y)	0.00383	0.00369	0.00366
	(!A1 * !A3 * B1 * !Y)	-0.00159	-0.00159	-0.00159
	(!A1 * !A3 * B1 * !Y)	0.00366	0.00369	0.00365
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00159	-0.00160	-0.00159
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00367	0.00369	0.00365
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00146	-0.00146	-0.00146
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00388	0.00390	0.00372

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00567	-0.00570	-0.00568
	(A1 * A3 * B1 * C1 * !Y)	0.00701	0.00707	0.00703
	(A1 * A3 * B1 * !C1 * !Y)	-0.00567	-0.00570	-0.00568
	(A1 * A3 * B1 * !C1 * !Y)	0.00701	0.00709	0.00704
	(A1 * A3 * !B1 * C1 * !Y)	-0.00568	-0.00571	-0.00568
	(A1 * A3 * !B1 * C1 * !Y)	0.00681	0.00689	0.00683
	(A1 * !A3 * B1 * C1 * !Y)	-0.00519	-0.00542	-0.00542
	(A1 * !A3 * B1 * C1 * !Y)	0.00726	0.00729	0.00725
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00517	-0.00537	-0.00536
	(A1 * !A3 * B1 * !C1 * !Y)	0.00723	0.00730	0.00725
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00517	-0.00537	-0.00536
	(A1 * !A3 * !B1 * C1 * !Y)	0.00723	0.00725	0.00725
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00226	-0.00228	-0.00230
	(A1 * !A3 * !B1 * !C1 * Y)	0.00745	0.00754	0.00730
	(!A1 * A3 * B1 * !Y)	-0.00524	-0.00550	-0.00548
	(!A1 * A3 * B1 * !Y)	0.00721	0.00731	0.00725
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00524	-0.00551	-0.00548
	(!A1 * A3 * !B1 * C1 * !Y)	0.00721	0.00731	0.00725
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00491	-0.00550	-0.00548
	(!A1 * A3 * !B1 * !C1 * Y)	0.00761	0.00732	0.00725
	(!A1 * !A3 * B1 * !Y)	-0.00303	-0.00304	-0.00304
	(!A1 * !A3 * B1 * !Y)	0.00720	0.00733	0.00725
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00303	-0.00305	-0.00304
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00720	0.00733	0.00725
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00279	-0.00280	-0.00279
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00760	0.00772	0.00738

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)**	0.00166	0.00166	0.00164
	(A1 * A2 * B1 * C1 * !Y)	-0.00165	-0.00174	-0.00173
	(A1 * A2 * B1 * !C1 * !Y)	0.00166	0.00166	0.00164
	(A1 * A2 * B1 * !C1 * !Y)	-0.00165	-0.00174	-0.00173
	(A1 * A2 * !B1 * C1 * !Y)	0.00167	0.00165	0.00164
	(A1 * A2 * !B1 * C1 * !Y)	-0.00157	-0.00169	-0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	0.00142	0.00144	0.00143
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00191	-0.00193	-0.00192
	(!A2 * B1 * !Y)	0.00156	0.00158	0.00157
	(!A2 * B1 * !Y)	-0.00177	-0.00178	-0.00177
	(!A2 * !B1 * C1 * !Y)	0.00156	0.00157	0.00156
	(!A2 * !B1 * C1 * !Y)	-0.00177	-0.00178	-0.00177
	(!A1 * A2 * B1 * !Y)	0.00153	0.00155	0.00154
	(!A1 * A2 * B1 * !Y)	-0.00176	-0.00178	-0.00177
	(!A1 * A2 * !B1 * C1 * !Y)	0.00153	0.00155	0.00154
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00176	-0.00178	-0.00177
	(!A1 * A2 * !B1 * !C1 * Y)	0.00140	0.00141	0.00140
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00191	-0.00192	-0.00192
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00142	0.00143	0.00142
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00192	-0.00192	-0.00192

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00280	0.00283	0.00280
	(A1 * A2 * B1 * C1 * !Y)	-0.00331	-0.00349	-0.00347
	(A1 * A2 * B1 * !C1 * !Y)	0.00281	0.00283	0.00280
	(A1 * A2 * B1 * !C1 * !Y)	-0.00330	-0.00348	-0.00347
	(A1 * A2 * !B1 * C1 * !Y)	0.00284	0.00283	0.00280
	(A1 * A2 * !B1 * C1 * !Y)	-0.00315	-0.00339	-0.00337
	(A1 * !A2 * !B1 * !C1 * Y)	0.00267	0.00270	0.00268
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00355	-0.00357	-0.00356
	(!A2 * B1 * !Y)	0.00268	0.00272	0.00268
	(!A2 * B1 * !Y)	-0.00355	-0.00358	-0.00356
	(!A2 * !B1 * C1 * !Y)	0.00268	0.00272	0.00268
	(!A2 * !B1 * C1 * !Y)	-0.00355	-0.00358	-0.00356
	(!A1 * A2 * B1 * !Y)	0.00263	0.00265	0.00262
	(!A1 * A2 * B1 * !Y)	-0.00356	-0.00357	-0.00356
	(!A1 * A2 * !B1 * C1 * !Y)	0.00261	0.00264	0.00262
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00354	-0.00357	-0.00356
	(!A1 * A2 * !B1 * !C1 * Y)	0.00260	0.00263	0.00262
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00354	-0.00356	-0.00356
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00267	0.00271	0.00268
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00355	-0.00358	-0.00356

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00568	0.00574	0.00567
	(A1 * A2 * B1 * C1 * !Y)	-0.00670	-0.00705	-0.00701
	(A1 * A2 * B1 * !C1 * !Y)	0.00570	0.00574	0.00567
	(A1 * A2 * B1 * !C1 * !Y)	-0.00667	-0.00704	-0.00701
	(A1 * A2 * !B1 * C1 * !Y)	0.00577	0.00575	0.00568
	(A1 * A2 * !B1 * C1 * !Y)	-0.00636	-0.00682	-0.00681
	(A1 * !A2 * !B1 * !C1 * Y)	0.00538	0.00542	0.00540
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00718	-0.00721	-0.00719
	(!A2 * B1 * !Y)	0.00536	0.00540	0.00537
	(!A2 * B1 * !Y)	-0.00719	-0.00722	-0.00719
	(!A2 * !B1 * C1 * !Y)	0.00538	0.00540	0.00540
	(!A2 * !B1 * C1 * !Y)	-0.00718	-0.00719	-0.00719
	(!A1 * A2 * B1 * !Y)	0.00522	0.00526	0.00525
	(!A1 * A2 * B1 * !Y)	-0.00716	-0.00720	-0.00719
	(!A1 * A2 * !B1 * C1 * !Y)	0.00523	0.00529	0.00525
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00718	-0.00722	-0.00719
	(!A1 * A2 * !B1 * !C1 * Y)	0.00523	0.00528	0.00525
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00718	-0.00722	-0.00719
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00538	0.00541	0.00539
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00719	-0.00720	-0.00719

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)**	-0.00164	-0.00164	-0.00164
	(A1 * A2 * B1 * C1 * !Y)	0.00173	0.00174	0.00173
	(A1 * A2 * B1 * !C1 * !Y)	-0.00164	-0.00164	-0.00164
	(A1 * A2 * B1 * !C1 * !Y)	0.00173	0.00174	0.00173
	(A1 * A2 * !B1 * C1 * !Y)	-0.00163	-0.00164	-0.00164
	(A1 * A2 * !B1 * C1 * !Y)	0.00168	0.00169	0.00169
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00137	-0.00143	-0.00143
	(A1 * !A2 * !B1 * !C1 * Y)	0.00192	0.00194	0.00193
	(!A2 * B1 * !Y)	-0.00153	-0.00157	-0.00157
	(!A2 * B1 * !Y)	0.00177	0.00179	0.00178
	(!A2 * !B1 * C1 * !Y)	-0.00153	-0.00157	-0.00156
	(!A2 * !B1 * C1 * !Y)	0.00177	0.00179	0.00178
	(!A1 * A2 * B1 * !Y)	-0.00146	-0.00155	-0.00154
	(!A1 * A2 * B1 * !Y)	0.00177	0.00179	0.00178
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00146	-0.00155	-0.00154
	(!A1 * A2 * !B1 * C1 * !Y)	0.00177	0.00180	0.00178
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00131	-0.00141	-0.00140
	(!A1 * A2 * !B1 * !C1 * Y)	0.00192	0.00194	0.00192
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00138	-0.00143	-0.00142
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00192	0.00194	0.00193

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00279	-0.00280	-0.00279
	(A1 * A2 * B1 * C1 * !Y)	0.00345	0.00349	0.00347
	(A1 * A2 * B1 * !C1 * !Y)	-0.00279	-0.00280	-0.00279
	(A1 * A2 * B1 * !C1 * !Y)	0.00345	0.00348	0.00347
	(A1 * A2 * !B1 * C1 * !Y)	-0.00279	-0.00280	-0.00279
	(A1 * A2 * !B1 * C1 * !Y)	0.00336	0.00339	0.00337
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00254	-0.00269	-0.00268
	(A1 * !A2 * !B1 * !C1 * Y)	0.00356	0.00360	0.00357
	(!A2 * B1 * !Y)	-0.00257	-0.00268	-0.00268
	(!A2 * B1 * !Y)	0.00355	0.00358	0.00357
	(!A2 * !B1 * C1 * !Y)	-0.00257	-0.00268	-0.00268
	(!A2 * !B1 * C1 * !Y)	0.00355	0.00358	0.00357
	(!A1 * A2 * B1 * !Y)	-0.00242	-0.00262	-0.00262
	(!A1 * A2 * B1 * !Y)	0.00356	0.00357	0.00357
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00242	-0.00262	-0.00262
	(!A1 * A2 * !B1 * C1 * !Y)	0.00356	0.00357	0.00357
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00241	-0.00262	-0.00262
	(!A1 * A2 * !B1 * !C1 * Y)	0.00357	0.00356	0.00357
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00256	-0.00269	-0.00268
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00356	0.00360	0.00357

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00565	-0.00568	-0.00566
	(A1 * A2 * B1 * C1 * !Y)	0.00698	0.00705	0.00701
	(A1 * A2 * B1 * !C1 * !Y)	-0.00565	-0.00568	-0.00566
	(A1 * A2 * B1 * !C1 * !Y)	0.00698	0.00704	0.00701
	(A1 * A2 * !B1 * C1 * !Y)	-0.00566	-0.00568	-0.00567
	(A1 * A2 * !B1 * C1 * !Y)	0.00679	0.00682	0.00681
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00511	-0.00542	-0.00540
	(A1 * !A2 * !B1 * !C1 * Y)	0.00719	0.00728	0.00721
	(!A2 * B1 * !Y)	-0.00519	-0.00539	-0.00537
	(!A2 * B1 * !Y)	0.00719	0.00723	0.00721
	(!A2 * !B1 * C1 * !Y)	-0.00518	-0.00539	-0.00540
	(!A2 * !B1 * C1 * !Y)	0.00719	0.00722	0.00721
	(!A1 * A2 * B1 * !Y)	-0.00489	-0.00526	-0.00525
	(!A1 * A2 * B1 * !Y)	0.00723	0.00730	0.00721
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00489	-0.00529	-0.00525
	(!A1 * A2 * !B1 * C1 * !Y)	0.00723	0.00730	0.00721
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00487	-0.00528	-0.00525
	(!A1 * A2 * !B1 * !C1 * Y)	0.00725	0.00730	0.00721
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00515	-0.00541	-0.00539
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00719	0.00728	0.00721

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)**	0.00179	0.00175	0.00165
	(A1 * A2 * A3 * C1 * !Y)	-0.00122	-0.00122	-0.00121
	(A1 * A2 * A3 * !C1 * !Y)	0.00160	0.00163	0.00159
	(A1 * A2 * A3 * !C1 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * A2 * !A3 * C1 * !Y)	0.00187	0.00159	0.00157
	(A1 * A2 * !A3 * C1 * !Y)	-0.00140	-0.00172	-0.00173
	(A1 * !A2 * C1 * !Y)	0.00187	0.00159	0.00157
	(A1 * !A2 * C1 * !Y)	-0.00140	-0.00172	-0.00173
	(!A1 * C1 * !Y)	0.00186	0.00158	0.00157
	(!A1 * C1 * !Y)	-0.00142	-0.00171	-0.00173
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00192	0.00184	0.00168
	(A1 * A2 * A3 * C1 * !Y)	-0.00253	-0.00254	-0.00252
	(A1 * A2 * A3 * !C1 * !Y)	0.00163	0.00166	0.00161
	(A1 * A2 * A3 * !C1 * !Y)	-0.00197	-0.00200	-0.00199
	(A1 * A2 * !A3 * C1 * !Y)	0.00224	0.00162	0.00159
	(A1 * A2 * !A3 * C1 * !Y)	-0.00291	-0.00357	-0.00357
	(A1 * !A2 * C1 * !Y)	0.00224	0.00162	0.00159
	(A1 * !A2 * C1 * !Y)	-0.00292	-0.00357	-0.00357
	(!A1 * C1 * !Y)	0.00223	0.00162	0.00159
	(!A1 * C1 * !Y)	-0.00292	-0.00357	-0.00357
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00378	0.00358	0.00325
	(A1 * A2 * A3 * C1 * !Y)	-0.00494	-0.00494	-0.00492
	(A1 * A2 * A3 * !C1 * !Y)	0.00313	0.00318	0.00308
	(A1 * A2 * A3 * !C1 * !Y)	-0.00385	-0.00391	-0.00388
	(A1 * A2 * !A3 * C1 * !Y)	0.00438	0.00313	0.00305
	(A1 * A2 * !A3 * C1 * !Y)	-0.00563	-0.00703	-0.00704
	(A1 * !A2 * C1 * !Y)	0.00436	0.00312	0.00305
	(A1 * !A2 * C1 * !Y)	-0.00565	-0.00703	-0.00704
	(!A1 * C1 * !Y)	0.00433	0.00312	0.00305
	(!A1 * C1 * !Y)	-0.00566	-0.00703	-0.00705

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)	-0.00160	-0.00161	-0.00160
	(A1 * A2 * A3 * C1 * !Y)	0.00122	0.00122	0.00121
	(A1 * A2 * A3 * !C1 * !Y)	-0.00154	-0.00155	-0.00156
	(A1 * A2 * A3 * !C1 * !Y)	0.00099	0.00100	0.00098
	(A1 * A2 * !A3 * C1 * !Y)	-0.00157	-0.00157	-0.00156
	(A1 * A2 * !A3 * C1 * !Y)	0.00172	0.00173	0.00173
	(A1 * !A2 * C1 * !Y)	-0.00157	-0.00157	-0.00156
	(A1 * !A2 * C1 * !Y)	0.00172	0.00173	0.00173
	(!A1 * C1 * !Y)	-0.00156	-0.00157	-0.00156
	(!A1 * C1 * !Y)	0.00171	0.00173	0.00173
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00162	-0.00162	-0.00162
	(A1 * A2 * A3 * C1 * !Y)	0.00253	0.00254	0.00252
	(A1 * A2 * A3 * !C1 * !Y)	-0.00151	-0.00152	-0.00153
	(A1 * A2 * A3 * !C1 * !Y)	0.00208	0.00209	0.00207
	(A1 * A2 * !A3 * C1 * !Y)	-0.00159	-0.00159	-0.00158
	(A1 * A2 * !A3 * C1 * !Y)	0.00356	0.00358	0.00357
	(A1 * !A2 * C1 * !Y)	-0.00159	-0.00159	-0.00158
	(A1 * !A2 * C1 * !Y)	0.00356	0.00358	0.00357
	(!A1 * C1 * !Y)	-0.00159	-0.00159	-0.00158
	(!A1 * C1 * !Y)	0.00356	0.00358	0.00357

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00310	-0.00311	-0.00310
	(A1 * A2 * A3 * C1 * !Y)	0.00494	0.00494	0.00492
	(A1 * A2 * A3 * !C1 * !Y)	-0.00286	-0.00290	-0.00295
	(A1 * A2 * A3 * !C1 * !Y)	0.00403	0.00409	0.00404
	(A1 * A2 * !A3 * C1 * !Y)	-0.00304	-0.00306	-0.00302
	(A1 * A2 * !A3 * C1 * !Y)	0.00699	0.00708	0.00704
	(A1 * !A2 * C1 * !Y)	-0.00304	-0.00306	-0.00303
	(A1 * !A2 * C1 * !Y)	0.00699	0.00708	0.00704
	(!A1 * C1 * !Y)	-0.00304	-0.00306	-0.00303
	(!A1 * C1 * !Y)	0.00700	0.00708	0.00705

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)	0.00167	0.00170	0.00167
	(A1 * A2 * B1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * A3 * !B1 * !Y)	0.00168	0.00170	0.00167
	(A1 * A2 * A3 * !B1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * !A2 * B1 * !Y)	0.00167	0.00170	0.00167
	(A1 * !A2 * B1 * !Y)	-0.00089	-0.00091	-0.00089
	(!A1 * B1 * !Y)	0.00167	0.00170	0.00167
	(!A1 * B1 * !Y)	-0.00089	-0.00091	-0.00089
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00188	0.00191	0.00188
	(A1 * A2 * B1 * !Y)	-0.00174	-0.00176	-0.00173
	(A1 * A2 * A3 * !B1 * !Y)	0.00188	0.00191	0.00188
	(A1 * A2 * A3 * !B1 * !Y)	-0.00173	-0.00176	-0.00173
	(A1 * !A2 * B1 * !Y)	0.00188	0.00191	0.00188
	(A1 * !A2 * B1 * !Y)	-0.00174	-0.00177	-0.00174
	(!A1 * B1 * !Y)	0.00189	0.00191	0.00188
	(!A1 * B1 * !Y)	-0.00175	-0.00177	-0.00174
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00373	0.00379	0.00373
	(A1 * A2 * B1 * !Y)	-0.00345	-0.00350	-0.00344
	(A1 * A2 * A3 * !B1 * !Y)	0.00375	0.00380	0.00373
	(A1 * A2 * A3 * !B1 * !Y)	-0.00346	-0.00349	-0.00343
	(A1 * !A2 * B1 * !Y)	0.00373	0.00380	0.00374
	(A1 * !A2 * B1 * !Y)	-0.00345	-0.00350	-0.00345
	(!A1 * B1 * !Y)	0.00374	0.00380	0.00374
	(!A1 * B1 * !Y)	-0.00345	-0.00350	-0.00345

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)	-0.00161	-0.00163	-0.00166
	(A1 * A2 * B1 * !Y)	0.00094	0.00095	0.00091
	(A1 * A2 * A3 * !B1 * !Y)	-0.00147	-0.00148	-0.00164
	(A1 * A2 * A3 * !B1 * !Y)	0.00103	0.00104	0.00092
	(A1 * !A2 * B1 * !Y)	-0.00161	-0.00163	-0.00166
	(A1 * !A2 * B1 * !Y)	0.00094	0.00095	0.00091
	(!A1 * B1 * !Y)	-0.00161	-0.00163	-0.00166
	(!A1 * B1 * !Y)	0.00094	0.00095	0.00091
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00171	-0.00172	-0.00186
	(A1 * A2 * B1 * !Y)	0.00190	0.00190	0.00177
	(A1 * A2 * A3 * !B1 * !Y)	-0.00137	-0.00140	-0.00179
	(A1 * A2 * A3 * !B1 * !Y)	0.00208	0.00209	0.00181
	(A1 * !A2 * B1 * !Y)	-0.00171	-0.00172	-0.00186
	(A1 * !A2 * B1 * !Y)	0.00190	0.00190	0.00178
	(!A1 * B1 * !Y)	-0.00170	-0.00173	-0.00186
	(!A1 * B1 * !Y)	0.00189	0.00190	0.00178
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00341	-0.00347	-0.00371
	(A1 * A2 * B1 * !Y)	0.00369	0.00373	0.00352
	(A1 * A2 * A3 * !B1 * !Y)	-0.00279	-0.00284	-0.00356
	(A1 * A2 * A3 * !B1 * !Y)	0.00409	0.00411	0.00358
	(A1 * !A2 * B1 * !Y)	-0.00341	-0.00347	-0.00371
	(A1 * !A2 * B1 * !Y)	0.00370	0.00374	0.00352
	(!A1 * B1 * !Y)	-0.00342	-0.00347	-0.00371
	(!A1 * B1 * !Y)	0.00372	0.00374	0.00352

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00261	0.00247	0.00248	0.00256	0.00265	1.06621
sky130_fd_sc_hs__a311o_2	0.00270	0.00269	0.00285	0.00289	0.00274	1.82835
sky130_fd_sc_hs__a311o_4	0.00493	0.00458	0.00485	0.00474	0.00474	3.21439

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	0.06645	0.14086
sky130_fd_sc_hs__a311o_2	0.00000	0.08170	0.14705
sky130_fd_sc_hs__a311o_4	0.00000	0.16572	0.29409

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)	0.10159	0.66086	6.39938
	A2->X (RR)	0.10821	0.66606	6.42883
	A3->X (RR)	0.11249	0.65224	6.34684
	B1->X (RR)	0.06886	0.59963	6.16884
	C1->X (RR)	0.06463	0.58337	6.16676
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.10987	0.60472	6.33593
	A2->X (RR)	0.11687	0.60446	6.34789
	A3->X (RR)	0.12161	0.58620	6.24432
	B1->X (RR)	0.07206	0.53404	6.07845
	C1->X (RR)	0.06791	0.52063	6.05612
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.13397	0.57644	6.34219
	A2->X (RR)	0.14511	0.58427	6.37347
	A3->X (RR)	0.14944	0.53912	6.16112
	B1->X (RR)	0.06999	0.44541	5.88762
	C1->X (RR)	0.06493	0.42800	5.86759

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.21109	0.67784	4.76602
	A2->X (FF)	0.24320	0.72010	4.87721
	A3->X (FF)	0.26699	0.75082	4.96482
	B1->X (FF)	0.24186	0.74404	5.16481
	C1->X (FF)	0.20853	0.71835	5.07855
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.28254	0.73574	4.67266
	A2->X (FF)	0.32464	0.78821	4.78210
	A3->X (FF)	0.35392	0.82433	4.87262
	B1->X (FF)	0.32903	0.82272	5.09631
	C1->X (FF)	0.28974	0.79189	5.00195
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.29627	0.69758	4.40984
	A2->X (FF)	0.33652	0.74740	4.51263
	A3->X (FF)	0.37012	0.79316	4.63350
	B1->X (FF)	0.34342	0.79521	4.91627
	C1->X (FF)	0.28846	0.75152	4.83369

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.01116	0.01116	0.02298
	A1	0.00519	0.00519	0.01719
	A2	0.01182	0.01160	0.02132
	A2	0.00517	0.00494	0.01483
	A3	0.01270	0.01235	0.02047
	A3	0.00515	0.00489	0.01313
	B1	0.01037	0.01078	0.02237
	B1	0.00378	0.00426	0.01851
	C1	0.00816	0.00875	0.02662
	C1	0.00300	0.00371	0.02306
sky130_fd_sc_hs__a311o_2	A1	0.01433	0.01444	0.02570
	A1	0.00792	0.00805	0.01969
	A2	0.01528	0.01525	0.02467
	A2	0.00792	0.00790	0.01773
	A3	0.01641	0.01626	0.02278
	A3	0.00793	0.00777	0.01489
	B1	0.01402	0.01468	0.02405
	B1	0.00650	0.00725	0.02014
	C1	0.01235	0.01312	0.02480
	C1	0.00567	0.00650	0.02387

sky130_fd_sc_hs__a311o_4	**A1**	0.02821	0.02863	0.05166
	A1	0.01690	0.01767	0.04115
	A2	0.02975	0.03008	0.04880
	A2	0.01678	0.01713	0.03664
	A3	0.03181	0.03206	0.04837
	A3	0.01693	0.01721	0.03471
	B1	0.02637	0.02737	0.04761
	B1	0.01352	0.01456	0.03823
	C1	0.02210	0.02375	0.05108
	C1	0.01090	0.01268	0.04725

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00322	0.00320	0.01267
	A1	0.00927	0.00927	0.01818
	A2	0.00388	0.00386	0.01311
	A2	0.01057	0.01058	0.01929
	A3	0.00422	0.00405	0.01306
	A3	0.01172	0.01156	0.02010
	B1	0.00310	0.00349	0.01694
	B1	0.01057	0.01057	0.02107
	C1	0.00288	0.00402	0.02400
	C1	0.00851	0.00950	0.02755

sky130_fd_sc_hs__a311o_2	**A1**	0.00650	0.00621	0.01614
	A1	0.01299	0.01274	0.02176
	A2	0.00725	0.00687	0.01621
	A2	0.01461	0.01424	0.02314
	A3	0.00755	0.00664	0.01483
	A3	0.01597	0.01505	0.02316
	B1	0.00603	0.00621	0.01867
	B1	0.01498	0.01421	0.02344
	C1	0.00593	0.00688	0.02563
	C1	0.01406	0.01406	0.02870
sky130_fd_sc_hs__a311o_4	**A1**	0.01344	0.01260	0.03111
	A1	0.02494	0.02420	0.04210
	A2	0.01568	0.01392	0.03362
	A2	0.02871	0.02762	0.04474
	A3	0.01612	0.01443	0.03257
	A3	0.03091	0.02948	0.04611
	B1	0.01467	0.01413	0.03544
	B1	0.02891	0.02745	0.04510
	C1	0.01457	0.01569	0.04867
	C1	0.02715	0.02705	0.05569

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)**	0.00140	0.00141	0.00139
	(A2 * A3 * B1 * C1 * X)	-0.00150	-0.00157	-0.00157
	(A2 * A3 * B1 * !C1 * X)	0.00141	0.00141	0.00139
	(A2 * A3 * B1 * !C1 * X)	-0.00149	-0.00157	-0.00157
	(A2 * A3 * !B1 * C1 * X)	0.00143	0.00141	0.00139
	(A2 * A3 * !B1 * C1 * X)	-0.00140	-0.00154	-0.00153
	(A2 * !A3 * B1 * C1 * X)	0.00130	0.00131	0.00131
	(A2 * !A3 * B1 * C1 * X)	-0.00160	-0.00161	-0.00161
	(A2 * !A3 * B1 * !C1 * X)	0.00130	0.00131	0.00131
	(A2 * !A3 * B1 * !C1 * X)	-0.00160	-0.00161	-0.00161
	(A2 * !A3 * !B1 * C1 * X)	0.00131	0.00131	0.00131
	(A2 * !A3 * !B1 * C1 * X)	-0.00161	-0.00161	-0.00161
	(A2 * !A3 * !B1 * !C1 * !X)	0.00056	0.00056	0.00053
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00183	-0.00184	-0.00189
	(!A2 * B1 * C1 * X)	0.00133	0.00135	0.00133
	(!A2 * B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * B1 * !C1 * X)	0.00133	0.00135	0.00133
	(!A2 * B1 * !C1 * X)	-0.00160	-0.00162	-0.00161
	(!A2 * !B1 * C1 * X)	0.00133	0.00134	0.00133
	(!A2 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * !B1 * !C1 * !X)	0.00056	0.00056	0.00054
	(!A2 * !B1 * !C1 * !X)	-0.00187	-0.00188	-0.00189

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00148	0.00149	0.00147
	(A2 * A3 * B1 * C1 * X)	-0.00148	-0.00156	-0.00156
	(A2 * A3 * B1 * !C1 * X)	0.00149	0.00149	0.00147
	(A2 * A3 * B1 * !C1 * X)	-0.00147	-0.00156	-0.00156
	(A2 * A3 * !B1 * C1 * X)	0.00151	0.00148	0.00147
	(A2 * A3 * !B1 * C1 * X)	-0.00138	-0.00152	-0.00152
	(A2 * !A3 * B1 * C1 * X)	0.00137	0.00138	0.00137
	(A2 * !A3 * B1 * C1 * X)	-0.00160	-0.00160	-0.00160
	(A2 * !A3 * B1 * !C1 * X)	0.00137	0.00138	0.00137
	(A2 * !A3 * B1 * !C1 * X)	-0.00160	-0.00160	-0.00160
	(A2 * !A3 * !B1 * C1 * X)	0.00137	0.00137	0.00137
	(A2 * !A3 * !B1 * C1 * X)	-0.00159	-0.00160	-0.00159
	(A2 * !A3 * !B1 * !C1 * !X)	0.00047	0.00047	0.00044
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00188	-0.00188	-0.00195
	(!A2 * B1 * C1 * X)	0.00140	0.00142	0.00141
	(!A2 * B1 * C1 * X)	-0.00159	-0.00160	-0.00160
	(!A2 * B1 * !C1 * X)	0.00140	0.00142	0.00141
	(!A2 * B1 * !C1 * X)	-0.00159	-0.00160	-0.00160
	(!A2 * !B1 * C1 * X)	0.00140	0.00142	0.00141
	(!A2 * !B1 * C1 * X)	-0.00159	-0.00160	-0.00159
	(!A2 * !B1 * !C1 * !X)	0.00048	0.00048	0.00046
	(!A2 * !B1 * !C1 * !X)	-0.00192	-0.00193	-0.00196

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00255	0.00257	0.00253
	(A2 * A3 * B1 * C1 * X)	-0.00311	-0.00327	-0.00325
	(A2 * A3 * B1 * !C1 * X)	0.00255	0.00256	0.00253
	(A2 * A3 * B1 * !C1 * X)	-0.00309	-0.00326	-0.00325
	(A2 * A3 * !B1 * C1 * X)	0.00259	0.00256	0.00253
	(A2 * A3 * !B1 * C1 * X)	-0.00293	-0.00319	-0.00317
	(A2 * !A3 * B1 * C1 * X)	0.00237	0.00240	0.00238
	(A2 * !A3 * B1 * C1 * X)	-0.00334	-0.00336	-0.00334
	(A2 * !A3 * B1 * !C1 * X)	0.00237	0.00238	0.00238
	(A2 * !A3 * B1 * !C1 * X)	-0.00333	-0.00335	-0.00334
	(A2 * !A3 * !B1 * C1 * X)	0.00237	0.00239	0.00238
	(A2 * !A3 * !B1 * C1 * X)	-0.00334	-0.00336	-0.00334
	(A2 * !A3 * !B1 * !C1 * !X)	0.00089	0.00090	0.00081
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00369	-0.00373	-0.00388
	(!A2 * B1 * C1 * X)	0.00244	0.00245	0.00244
	(!A2 * B1 * C1 * X)	-0.00333	-0.00335	-0.00334
	(!A2 * B1 * !C1 * X)	0.00243	0.00246	0.00244
	(!A2 * B1 * !C1 * X)	-0.00332	-0.00336	-0.00334
	(!A2 * !B1 * C1 * X)	0.00243	0.00246	0.00244
	(!A2 * !B1 * C1 * X)	-0.00333	-0.00336	-0.00334
	(!A2 * !B1 * !C1 * !X)	0.00096	0.00096	0.00090
	(!A2 * !B1 * !C1 * !X)	-0.00377	-0.00380	-0.00388

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)**	-0.00140	-0.00140	-0.00139
	(A2 * A3 * B1 * C1 * X)	0.00157	0.00157	0.00157
	(A2 * A3 * B1 * !C1 * X)	-0.00140	-0.00140	-0.00139
	(A2 * A3 * B1 * !C1 * X)	0.00157	0.00157	0.00157
	(A2 * A3 * !B1 * C1 * X)	-0.00139	-0.00140	-0.00139
	(A2 * A3 * !B1 * C1 * X)	0.00152	0.00154	0.00153
	(A2 * !A3 * B1 * C1 * X)	-0.00123	-0.00131	-0.00131
	(A2 * !A3 * B1 * C1 * X)	0.00161	0.00164	0.00161
	(A2 * !A3 * B1 * !C1 * X)	-0.00122	-0.00131	-0.00131
	(A2 * !A3 * B1 * !C1 * X)	0.00161	0.00164	0.00161
	(A2 * !A3 * !B1 * C1 * X)	-0.00121	-0.00131	-0.00131
	(A2 * !A3 * !B1 * C1 * X)	0.00161	0.00163	0.00161
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00052	-0.00053	-0.00052
	(A2 * !A3 * !B1 * !C1 * !X)	0.00189	0.00190	0.00190
	(!A2 * B1 * C1 * X)	-0.00130	-0.00134	-0.00133
	(!A2 * B1 * C1 * X)	0.00161	0.00162	0.00161
	(!A2 * B1 * !C1 * X)	-0.00130	-0.00134	-0.00133
	(!A2 * B1 * !C1 * X)	0.00160	0.00162	0.00161
	(!A2 * !B1 * C1 * X)	-0.00130	-0.00134	-0.00133
	(!A2 * !B1 * C1 * X)	0.00161	0.00162	0.00161
	(!A2 * !B1 * !C1 * !X)	-0.00053	-0.00054	-0.00053
	(!A2 * !B1 * !C1 * !X)	0.00189	0.00190	0.00190

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00148	-0.00148	-0.00147
	(A2 * A3 * B1 * C1 * X)	0.00156	0.00156	0.00156
	(A2 * A3 * B1 * !C1 * X)	-0.00148	-0.00148	-0.00147
	(A2 * A3 * B1 * !C1 * X)	0.00156	0.00156	0.00156
	(A2 * A3 * !B1 * C1 * X)	-0.00147	-0.00147	-0.00147
	(A2 * A3 * !B1 * C1 * X)	0.00153	0.00152	0.00152
	(A2 * !A3 * B1 * C1 * X)	-0.00127	-0.00138	-0.00137
	(A2 * !A3 * B1 * C1 * X)	0.00160	0.00162	0.00160
	(A2 * !A3 * B1 * !C1 * X)	-0.00126	-0.00138	-0.00137
	(A2 * !A3 * B1 * !C1 * X)	0.00160	0.00161	0.00160
	(A2 * !A3 * !B1 * C1 * X)	-0.00126	-0.00137	-0.00137
	(A2 * !A3 * !B1 * C1 * X)	0.00160	0.00162	0.00160
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00044	-0.00045	-0.00044
	(A2 * !A3 * !B1 * !C1 * !X)	0.00196	0.00199	0.00196
	(!A2 * B1 * C1 * X)	-0.00136	-0.00141	-0.00141
	(!A2 * B1 * C1 * X)	0.00159	0.00160	0.00160
	(!A2 * B1 * !C1 * X)	-0.00136	-0.00141	-0.00141
	(!A2 * B1 * !C1 * X)	0.00159	0.00160	0.00160
	(!A2 * !B1 * C1 * X)	-0.00137	-0.00142	-0.00141
	(!A2 * !B1 * C1 * X)	0.00161	0.00162	0.00160
	(!A2 * !B1 * !C1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * !C1 * !X)	0.00196	0.00199	0.00196

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00253	-0.00254	-0.00253
	(A2 * A3 * B1 * C1 * X)	0.00324	0.00327	0.00325
	(A2 * A3 * B1 * !C1 * X)	-0.00254	-0.00254	-0.00253
	(A2 * A3 * B1 * !C1 * X)	0.00325	0.00326	0.00325
	(A2 * A3 * !B1 * C1 * X)	-0.00252	-0.00253	-0.00252
	(A2 * A3 * !B1 * C1 * X)	0.00315	0.00319	0.00317
	(A2 * !A3 * B1 * C1 * X)	-0.00213	-0.00238	-0.00238
	(A2 * !A3 * B1 * C1 * X)	0.00334	0.00337	0.00335
	(A2 * !A3 * B1 * !C1 * X)	-0.00212	-0.00238	-0.00238
	(A2 * !A3 * B1 * !C1 * X)	0.00334	0.00337	0.00335
	(A2 * !A3 * !B1 * C1 * X)	-0.00212	-0.00239	-0.00238
	(A2 * !A3 * !B1 * C1 * X)	0.00334	0.00337	0.00335
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00080	-0.00082	-0.00081
	(A2 * !A3 * !B1 * !C1 * !X)	0.00388	0.00396	0.00390
	(!A2 * B1 * C1 * X)	-0.00232	-0.00245	-0.00244
	(!A2 * B1 * C1 * X)	0.00333	0.00338	0.00335
	(!A2 * B1 * !C1 * X)	-0.00233	-0.00244	-0.00244
	(!A2 * B1 * !C1 * X)	0.00336	0.00336	0.00335
	(!A2 * !B1 * C1 * X)	-0.00233	-0.00245	-0.00244
	(!A2 * !B1 * C1 * X)	0.00336	0.00338	0.00335
	(!A2 * !B1 * !C1 * !X)	-0.00086	-0.00089	-0.00087
	(!A2 * !B1 * !C1 * !X)	0.00388	0.00396	0.00390

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)**	0.00122	0.00122	0.00121
	(A1 * A3 * B1 * C1 * X)	-0.00154	-0.00161	-0.00161
	(A1 * A3 * B1 * !C1 * X)	0.00123	0.00122	0.00121
	(A1 * A3 * B1 * !C1 * X)	-0.00152	-0.00161	-0.00161
	(A1 * A3 * !B1 * C1 * X)	0.00125	0.00122	0.00121
	(A1 * A3 * !B1 * C1 * X)	-0.00143	-0.00157	-0.00156
	(A1 * !A3 * B1 * C1 * X)	0.00115	0.00116	0.00115
	(A1 * !A3 * B1 * C1 * X)	-0.00166	-0.00166	-0.00165
	(A1 * !A3 * B1 * !C1 * X)	0.00115	0.00116	0.00115
	(A1 * !A3 * B1 * !C1 * X)	-0.00166	-0.00166	-0.00165
	(A1 * !A3 * !B1 * C1 * X)	0.00115	0.00116	0.00115
	(A1 * !A3 * !B1 * C1 * X)	-0.00166	-0.00166	-0.00165
	(A1 * !A3 * !B1 * !C1 * !X)	0.00047	0.00047	0.00046
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00173	-0.00173	-0.00172
	(!A1 * A3 * B1 * X)	0.00115	0.00116	0.00115
	(!A1 * A3 * B1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * A3 * !B1 * C1 * X)	0.00115	0.00116	0.00115
	(!A1 * A3 * !B1 * C1 * X)	-0.00165	-0.00165	-0.00165
	(!A1 * A3 * !B1 * !C1 * !X)	0.00108	0.00109	0.00109
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00171	-0.00173	-0.00172
	(!A1 * !A3 * B1 * X)	0.00067	0.00068	0.00067
	(!A1 * !A3 * B1 * X)	-0.00166	-0.00167	-0.00165
	(!A1 * !A3 * !B1 * C1 * X)	0.00068	0.00068	0.00067
	(!A1 * !A3 * !B1 * C1 * X)	-0.00166	-0.00166	-0.00165
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00055	0.00056	0.00055
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00172	-0.00174	-0.00173

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00148	0.00148	0.00146
	(A1 * A3 * B1 * C1 * X)	-0.00149	-0.00156	-0.00156
	(A1 * A3 * B1 * !C1 * X)	0.00147	0.00148	0.00146
	(A1 * A3 * B1 * !C1 * X)	-0.00146	-0.00156	-0.00156
	(A1 * A3 * !B1 * C1 * X)	0.00149	0.00147	0.00146
	(A1 * A3 * !B1 * C1 * X)	-0.00138	-0.00152	-0.00152
	(A1 * !A3 * B1 * C1 * X)	0.00138	0.00139	0.00138
	(A1 * !A3 * B1 * C1 * X)	-0.00159	-0.00160	-0.00160
	(A1 * !A3 * B1 * !C1 * X)	0.00138	0.00139	0.00139
	(A1 * !A3 * B1 * !C1 * X)	-0.00159	-0.00160	-0.00160
	(A1 * !A3 * !B1 * C1 * X)	0.00138	0.00139	0.00139
	(A1 * !A3 * !B1 * C1 * X)	-0.00159	-0.00160	-0.00159
	(A1 * !A3 * !B1 * !C1 * !X)	0.00056	0.00056	0.00056
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00170	-0.00171	-0.00169
	(!A1 * A3 * B1 * X)	0.00141	0.00141	0.00141
	(!A1 * A3 * B1 * X)	-0.00159	-0.00160	-0.00160
	(!A1 * A3 * !B1 * C1 * X)	0.00140	0.00140	0.00140
	(!A1 * A3 * !B1 * C1 * X)	-0.00160	-0.00159	-0.00159
	(!A1 * A3 * !B1 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A3 * B1 * X)	0.00081	0.00082	0.00082
	(!A1 * !A3 * B1 * X)	-0.00159	-0.00161	-0.00160
	(!A1 * !A3 * !B1 * C1 * X)	0.00081	0.00083	0.00082
	(!A1 * !A3 * !B1 * C1 * X)	-0.00159	-0.00161	-0.00159
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00066	0.00066	0.00066
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00171	-0.00172	-0.00170

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00244	0.00245	0.00243
	(A1 * A3 * B1 * C1 * X)	-0.00308	-0.00321	-0.00321
	(A1 * A3 * B1 * !C1 * X)	0.00244	0.00245	0.00243
	(A1 * A3 * B1 * !C1 * X)	-0.00307	-0.00324	-0.00321
	(A1 * A3 * !B1 * C1 * X)	0.00246	0.00245	0.00243
	(A1 * A3 * !B1 * C1 * X)	-0.00293	-0.00317	-0.00314
	(A1 * !A3 * B1 * C1 * X)	0.00230	0.00232	0.00231
	(A1 * !A3 * B1 * C1 * X)	-0.00328	-0.00330	-0.00328
	(A1 * !A3 * B1 * !C1 * X)	0.00230	0.00232	0.00231
	(A1 * !A3 * B1 * !C1 * X)	-0.00328	-0.00329	-0.00328
	(A1 * !A3 * !B1 * C1 * X)	0.00231	0.00232	0.00231
	(A1 * !A3 * !B1 * C1 * X)	-0.00327	-0.00330	-0.00328
	(A1 * !A3 * !B1 * !C1 * !X)	0.00108	0.00109	0.00109
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00329	-0.00331	-0.00327
	(!A1 * A3 * B1 * X)	0.00231	0.00232	0.00232
	(!A1 * A3 * B1 * X)	-0.00328	-0.00329	-0.00328
	(!A1 * A3 * !B1 * C1 * X)	0.00231	0.00233	0.00232
	(!A1 * A3 * !B1 * C1 * X)	-0.00327	-0.00329	-0.00328
	(!A1 * A3 * !B1 * !C1 * !X)	0.00231	0.00234	0.00232
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00327	-0.00329	-0.00328
	(!A1 * !A3 * B1 * X)	0.00142	0.00144	0.00142
	(!A1 * !A3 * B1 * X)	-0.00328	-0.00331	-0.00328
	(!A1 * !A3 * !B1 * C1 * X)	0.00143	0.00144	0.00143
	(!A1 * !A3 * !B1 * C1 * X)	-0.00329	-0.00330	-0.00328
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00130	0.00130	0.00130
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00331	-0.00330	-0.00330

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)**	-0.00121	-0.00121	-0.00121
	(A1 * A3 * B1 * C1 * X)	0.00160	0.00161	0.00161
	(A1 * A3 * B1 * !C1 * X)	-0.00121	-0.00121	-0.00121
	(A1 * A3 * B1 * !C1 * X)	0.00160	0.00161	0.00161
	(A1 * A3 * !B1 * C1 * X)	-0.00120	-0.00121	-0.00120
	(A1 * A3 * !B1 * C1 * X)	0.00156	0.00157	0.00156
	(A1 * !A3 * B1 * C1 * X)	-0.00112	-0.00116	-0.00115
	(A1 * !A3 * B1 * C1 * X)	0.00166	0.00167	0.00166
	(A1 * !A3 * B1 * !C1 * X)	-0.00112	-0.00116	-0.00115
	(A1 * !A3 * B1 * !C1 * X)	0.00166	0.00166	0.00166
	(A1 * !A3 * !B1 * C1 * X)	-0.00112	-0.00116	-0.00115
	(A1 * !A3 * !B1 * C1 * X)	0.00166	0.00167	0.00166
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00044	-0.00044	-0.00045
	(A1 * !A3 * !B1 * !C1 * !X)	0.00176	0.00179	0.00173
	(!A1 * A3 * B1 * X)	-0.00112	-0.00116	-0.00115
	(!A1 * A3 * B1 * X)	0.00165	0.00166	0.00166
	(!A1 * A3 * !B1 * C1 * X)	-0.00112	-0.00116	-0.00115
	(!A1 * A3 * !B1 * C1 * X)	0.00165	0.00166	0.00166
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00099	-0.00109	-0.00109
	(!A1 * A3 * !B1 * !C1 * !X)	0.00180	0.00174	0.00173
	(!A1 * !A3 * B1 * X)	-0.00067	-0.00068	-0.00067
	(!A1 * !A3 * B1 * X)	0.00166	0.00168	0.00166
	(!A1 * !A3 * !B1 * C1 * X)	-0.00068	-0.00068	-0.00067
	(!A1 * !A3 * !B1 * C1 * X)	0.00166	0.00168	0.00166
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00055	-0.00056	-0.00055
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00181	0.00183	0.00175

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00147	-0.00147	-0.00146
	(A1 * A3 * B1 * C1 * X)	0.00156	0.00156	0.00156
	(A1 * A3 * B1 * !C1 * X)	-0.00147	-0.00147	-0.00146
	(A1 * A3 * B1 * !C1 * X)	0.00156	0.00156	0.00156
	(A1 * A3 * !B1 * C1 * X)	-0.00145	-0.00146	-0.00146
	(A1 * A3 * !B1 * C1 * X)	0.00151	0.00152	0.00152
	(A1 * !A3 * B1 * C1 * X)	-0.00135	-0.00139	-0.00138
	(A1 * !A3 * B1 * C1 * X)	0.00159	0.00161	0.00160
	(A1 * !A3 * B1 * !C1 * X)	-0.00135	-0.00139	-0.00139
	(A1 * !A3 * B1 * !C1 * X)	0.00159	0.00161	0.00160
	(A1 * !A3 * !B1 * C1 * X)	-0.00135	-0.00139	-0.00139
	(A1 * !A3 * !B1 * C1 * X)	0.00160	0.00161	0.00160
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00053	-0.00054	-0.00054
	(A1 * !A3 * !B1 * !C1 * !X)	0.00174	0.00177	0.00171
	(!A1 * A3 * B1 * X)	-0.00135	-0.00141	-0.00141
	(!A1 * A3 * B1 * X)	0.00159	0.00161	0.00160
	(!A1 * A3 * !B1 * C1 * X)	-0.00135	-0.00140	-0.00140
	(!A1 * A3 * !B1 * C1 * X)	0.00160	0.00161	0.00160
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00119	-0.00131	-0.00130
	(!A1 * A3 * !B1 * !C1 * !X)	0.00177	0.00171	0.00170
	(!A1 * !A3 * B1 * X)	-0.00081	-0.00082	-0.00082
	(!A1 * !A3 * B1 * X)	0.00161	0.00162	0.00160
	(!A1 * !A3 * !B1 * C1 * X)	-0.00081	-0.00083	-0.00082
	(!A1 * !A3 * !B1 * C1 * X)	0.00161	0.00162	0.00160
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00066	-0.00066	-0.00066
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00179	0.00181	0.00173

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00242	-0.00242	-0.00243
	(A1 * A3 * B1 * C1 * X)	0.00320	0.00321	0.00321
	(A1 * A3 * B1 * !C1 * X)	-0.00242	-0.00244	-0.00243
	(A1 * A3 * B1 * !C1 * X)	0.00320	0.00327	0.00321
	(A1 * A3 * !B1 * C1 * X)	-0.00241	-0.00243	-0.00241
	(A1 * A3 * !B1 * C1 * X)	0.00313	0.00317	0.00314
	(A1 * !A3 * B1 * C1 * X)	-0.00224	-0.00232	-0.00231
	(A1 * !A3 * B1 * C1 * X)	0.00330	0.00332	0.00329
	(A1 * !A3 * B1 * !C1 * X)	-0.00223	-0.00232	-0.00231
	(A1 * !A3 * B1 * !C1 * X)	0.00330	0.00332	0.00329
	(A1 * !A3 * !B1 * C1 * X)	-0.00223	-0.00232	-0.00231
	(A1 * !A3 * !B1 * C1 * X)	0.00330	0.00333	0.00330
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00099	-0.00102	-0.00104
	(A1 * !A3 * !B1 * !C1 * !X)	0.00338	0.00345	0.00333
	(!A1 * A3 * B1 * X)	-0.00222	-0.00232	-0.00232
	(!A1 * A3 * B1 * X)	0.00330	0.00332	0.00329
	(!A1 * A3 * !B1 * C1 * X)	-0.00222	-0.00233	-0.00232
	(!A1 * A3 * !B1 * C1 * X)	0.00330	0.00332	0.00330
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00208	-0.00234	-0.00232
	(!A1 * A3 * !B1 * !C1 * !X)	0.00346	0.00332	0.00329
	(!A1 * !A3 * B1 * X)	-0.00142	-0.00144	-0.00142
	(!A1 * !A3 * B1 * X)	0.00330	0.00333	0.00329
	(!A1 * !A3 * !B1 * C1 * X)	-0.00143	-0.00144	-0.00143
	(!A1 * !A3 * !B1 * C1 * X)	0.00329	0.00333	0.00330
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00130
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00344	0.00350	0.00335

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)**	0.00133	0.00134	0.00133
	(A1 * A2 * B1 * C1 * X)	-0.00150	-0.00158	-0.00158
	(A1 * A2 * B1 * !C1 * X)	0.00133	0.00134	0.00133
	(A1 * A2 * B1 * !C1 * X)	-0.00149	-0.00159	-0.00158
	(A1 * A2 * !B1 * C1 * X)	0.00136	0.00134	0.00133
	(A1 * A2 * !B1 * C1 * X)	-0.00141	-0.00155	-0.00154
	(A1 * !A2 * !B1 * !C1 * !X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00178	-0.00180	-0.00179
	(!A2 * B1 * X)	0.00128	0.00129	0.00128
	(!A2 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * C1 * X)	0.00127	0.00128	0.00128
	(!A2 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00162
	(!A1 * A2 * B1 * X)	0.00125	0.00125	0.00125
	(!A1 * A2 * B1 * X)	-0.00162	-0.00162	-0.00162
	(!A1 * A2 * !B1 * C1 * X)	0.00125	0.00125	0.00125
	(!A1 * A2 * !B1 * C1 * X)	-0.00162	-0.00162	-0.00162
	(!A1 * A2 * !B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00179	-0.00179	-0.00179
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00110	0.00112	0.00111
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00178	-0.00180	-0.00179

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00168	0.00169	0.00167
	(A1 * A2 * B1 * C1 * X)	-0.00148	-0.00155	-0.00155
	(A1 * A2 * B1 * !C1 * X)	0.00168	0.00169	0.00167
	(A1 * A2 * B1 * !C1 * X)	-0.00146	-0.00156	-0.00155
	(A1 * A2 * !B1 * C1 * X)	0.00170	0.00168	0.00167
	(A1 * A2 * !B1 * C1 * X)	-0.00138	-0.00151	-0.00151
	(A1 * !A2 * !B1 * !C1 * !X)	0.00131	0.00132	0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(!A2 * B1 * X)	0.00159	0.00160	0.00159
	(!A2 * B1 * X)	-0.00158	-0.00159	-0.00158
	(!A2 * !B1 * C1 * X)	0.00159	0.00160	0.00160
	(!A2 * !B1 * C1 * X)	-0.00158	-0.00159	-0.00158
	(!A1 * A2 * B1 * X)	0.00158	0.00158	0.00158
	(!A1 * A2 * B1 * X)	-0.00159	-0.00159	-0.00158
	(!A1 * A2 * !B1 * C1 * X)	0.00157	0.00158	0.00157
	(!A1 * A2 * !B1 * C1 * X)	-0.00159	-0.00159	-0.00158
	(!A1 * A2 * !B1 * !C1 * !X)	0.00128	0.00128	0.00128
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00187	-0.00187	-0.00187
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00132	0.00131
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00186	-0.00187	-0.00187

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00279	0.00281	0.00277
	(A1 * A2 * B1 * C1 * X)	-0.00298	-0.00313	-0.00312
	(A1 * A2 * B1 * !C1 * X)	0.00279	0.00281	0.00277
	(A1 * A2 * B1 * !C1 * X)	-0.00297	-0.00313	-0.00312
	(A1 * A2 * !B1 * C1 * X)	0.00283	0.00281	0.00277
	(A1 * A2 * !B1 * C1 * X)	-0.00284	-0.00306	-0.00304
	(A1 * !A2 * !B1 * !C1 * !X)	0.00237	0.00240	0.00237
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00348	-0.00350	-0.00348
	(!A2 * B1 * X)	0.00267	0.00269	0.00267
	(!A2 * B1 * X)	-0.00318	-0.00320	-0.00319
	(!A2 * !B1 * C1 * X)	0.00267	0.00269	0.00268
	(!A2 * !B1 * C1 * X)	-0.00318	-0.00320	-0.00319
	(!A1 * A2 * B1 * X)	0.00265	0.00266	0.00264
	(!A1 * A2 * B1 * X)	-0.00319	-0.00320	-0.00319
	(!A1 * A2 * !B1 * C1 * X)	0.00265	0.00267	0.00265
	(!A1 * A2 * !B1 * C1 * X)	-0.00319	-0.00320	-0.00319
	(!A1 * A2 * !B1 * !C1 * !X)	0.00236	0.00236	0.00235
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00349	-0.00348	-0.00348
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00237	0.00239	0.00237
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00348	-0.00350	-0.00348

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)**	-0.00133	-0.00133	-0.00133
	(A1 * A2 * B1 * C1 * X)	0.00157	0.00158	0.00158
	(A1 * A2 * B1 * !C1 * X)	-0.00133	-0.00133	-0.00133
	(A1 * A2 * B1 * !C1 * X)	0.00158	0.00159	0.00158
	(A1 * A2 * !B1 * C1 * X)	-0.00132	-0.00133	-0.00132
	(A1 * A2 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00106	-0.00111	-0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	0.00178	0.00181	0.00180
	(!A2 * B1 * X)	-0.00124	-0.00128	-0.00128
	(!A2 * B1 * X)	0.00162	0.00163	0.00162
	(!A2 * !B1 * C1 * X)	-0.00124	-0.00128	-0.00128
	(!A2 * !B1 * C1 * X)	0.00162	0.00163	0.00163
	(!A1 * A2 * B1 * X)	-0.00118	-0.00125	-0.00125
	(!A1 * A2 * B1 * X)	0.00162	0.00164	0.00162
	(!A1 * A2 * !B1 * C1 * X)	-0.00118	-0.00125	-0.00125
	(!A1 * A2 * !B1 * C1 * X)	0.00162	0.00164	0.00163
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00101	-0.00109	-0.00108
	(!A1 * A2 * !B1 * !C1 * !X)	0.00179	0.00181	0.00179
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00106	-0.00111	-0.00111
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00178	0.00181	0.00180

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00167	-0.00167	-0.00167
	(A1 * A2 * B1 * C1 * X)	0.00154	0.00155	0.00155
	(A1 * A2 * B1 * !C1 * X)	-0.00167	-0.00167	-0.00167
	(A1 * A2 * B1 * !C1 * X)	0.00154	0.00156	0.00155
	(A1 * A2 * !B1 * C1 * X)	-0.00166	-0.00167	-0.00166
	(A1 * A2 * !B1 * C1 * X)	0.00150	0.00151	0.00151
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00125	-0.00132	-0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	0.00187	0.00189	0.00188
	(!A2 * B1 * X)	-0.00156	-0.00160	-0.00159
	(!A2 * B1 * X)	0.00158	0.00160	0.00159
	(!A2 * !B1 * C1 * X)	-0.00156	-0.00160	-0.00160
	(!A2 * !B1 * C1 * X)	0.00158	0.00160	0.00159
	(!A1 * A2 * B1 * X)	-0.00149	-0.00158	-0.00158
	(!A1 * A2 * B1 * X)	0.00159	0.00161	0.00159
	(!A1 * A2 * !B1 * C1 * X)	-0.00149	-0.00158	-0.00157
	(!A1 * A2 * !B1 * C1 * X)	0.00159	0.00161	0.00159
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00120	-0.00128	-0.00128
	(!A1 * A2 * !B1 * !C1 * !X)	0.00187	0.00189	0.00188
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00126	-0.00132	-0.00131
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00187	0.00189	0.00188

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00278	-0.00278	-0.00277
	(A1 * A2 * B1 * C1 * X)	0.00312	0.00313	0.00312
	(A1 * A2 * B1 * !C1 * X)	-0.00277	-0.00278	-0.00277
	(A1 * A2 * B1 * !C1 * X)	0.00310	0.00313	0.00312
	(A1 * A2 * !B1 * C1 * X)	-0.00276	-0.00278	-0.00276
	(A1 * A2 * !B1 * C1 * X)	0.00303	0.00306	0.00304
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00227	-0.00237	-0.00237
	(A1 * !A2 * !B1 * !C1 * !X)	0.00348	0.00353	0.00350
	(!A2 * B1 * X)	-0.00259	-0.00267	-0.00267
	(!A2 * B1 * X)	0.00319	0.00321	0.00320
	(!A2 * !B1 * C1 * X)	-0.00259	-0.00267	-0.00268
	(!A2 * !B1 * C1 * X)	0.00319	0.00321	0.00320
	(!A1 * A2 * B1 * X)	-0.00249	-0.00265	-0.00264
	(!A1 * A2 * B1 * X)	0.00319	0.00324	0.00320
	(!A1 * A2 * !B1 * C1 * X)	-0.00249	-0.00265	-0.00265
	(!A1 * A2 * !B1 * C1 * X)	0.00319	0.00324	0.00320
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00219	-0.00235	-0.00235
	(!A1 * A2 * !B1 * !C1 * !X)	0.00349	0.00353	0.00349
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00227	-0.00238	-0.00237
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00349	0.00353	0.00350

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)**	0.00157	0.00149	0.00142
	(A1 * A2 * A3 * C1 * X)	-0.00110	-0.00112	-0.00111
	(A1 * A2 * A3 * !C1 * X)	0.00138	0.00141	0.00137
	(A1 * A2 * A3 * !C1 * X)	-0.00085	-0.00088	-0.00087
	(A1 * A2 * !A3 * C1 * X)	0.00167	0.00139	0.00136
	(A1 * A2 * !A3 * C1 * X)	-0.00126	-0.00155	-0.00157
	(A1 * !A2 * C1 * X)	0.00167	0.00139	0.00136
	(A1 * !A2 * C1 * X)	-0.00126	-0.00155	-0.00157
	(!A1 * C1 * X)	0.00166	0.00139	0.00136
	(!A1 * C1 * X)	-0.00127	-0.00155	-0.00157
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00180	0.00176	0.00167
	(A1 * A2 * A3 * C1 * X)	-0.00109	-0.00112	-0.00111
	(A1 * A2 * A3 * !C1 * X)	0.00161	0.00164	0.00160
	(A1 * A2 * A3 * !C1 * X)	-0.00086	-0.00087	-0.00087
	(A1 * A2 * !A3 * C1 * X)	0.00188	0.00160	0.00158
	(A1 * A2 * !A3 * C1 * X)	-0.00125	-0.00155	-0.00157
	(A1 * !A2 * C1 * X)	0.00188	0.00161	0.00158
	(A1 * !A2 * C1 * X)	-0.00125	-0.00155	-0.00157
	(!A1 * C1 * X)	0.00187	0.00159	0.00158
	(!A1 * C1 * X)	-0.00126	-0.00154	-0.00157
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00286	0.00278	0.00262
	(A1 * A2 * A3 * C1 * X)	-0.00242	-0.00244	-0.00242
	(A1 * A2 * A3 * !C1 * X)	0.00256	0.00260	0.00254
	(A1 * A2 * A3 * !C1 * X)	-0.00188	-0.00190	-0.00189
	(A1 * A2 * !A3 * C1 * X)	0.00315	0.00257	0.00252
	(A1 * A2 * !A3 * C1 * X)	-0.00258	-0.00324	-0.00327
	(A1 * !A2 * C1 * X)	0.00315	0.00257	0.00252
	(A1 * !A2 * C1 * X)	-0.00258	-0.00324	-0.00327
	(!A1 * C1 * X)	0.00315	0.00257	0.00252
	(!A1 * C1 * X)	-0.00258	-0.00324	-0.00327

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)	-0.00136	-0.00137	-0.00137
	(A1 * A2 * A3 * C1 * X)	0.00111	0.00112	0.00111
	(A1 * A2 * A3 * !C1 * X)	-0.00132	-0.00133	-0.00135
	(A1 * A2 * A3 * !C1 * X)	0.00092	0.00092	0.00090
	(A1 * A2 * !A3 * C1 * X)	-0.00135	-0.00135	-0.00134
	(A1 * A2 * !A3 * C1 * X)	0.00157	0.00157	0.00157
	(A1 * !A2 * C1 * X)	-0.00135	-0.00135	-0.00134
	(A1 * !A2 * C1 * X)	0.00157	0.00157	0.00157
	(!A1 * C1 * X)	-0.00135	-0.00135	-0.00134
	(!A1 * C1 * X)	0.00157	0.00157	0.00157
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * A2 * A3 * C1 * X)	0.00112	0.00112	0.00111
	(A1 * A2 * A3 * !C1 * X)	-0.00156	-0.00157	-0.00158
	(A1 * A2 * A3 * !C1 * X)	0.00092	0.00092	0.00090
	(A1 * A2 * !A3 * C1 * X)	-0.00157	-0.00158	-0.00157
	(A1 * A2 * !A3 * C1 * X)	0.00156	0.00158	0.00157
	(A1 * !A2 * C1 * X)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * C1 * X)	0.00156	0.00158	0.00157
	(!A1 * C1 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * C1 * X)	0.00156	0.00158	0.00157

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00255	-0.00255	-0.00254
	(A1 * A2 * A3 * C1 * X)	0.00243	0.00244	0.00242
	(A1 * A2 * A3 * !C1 * X)	-0.00245	-0.00246	-0.00247
	(A1 * A2 * A3 * !C1 * X)	0.00198	0.00199	0.00197
	(A1 * A2 * !A3 * C1 * X)	-0.00250	-0.00251	-0.00249
	(A1 * A2 * !A3 * C1 * X)	0.00324	0.00327	0.00327
	(A1 * !A2 * C1 * X)	-0.00250	-0.00251	-0.00249
	(A1 * !A2 * C1 * X)	0.00324	0.00327	0.00327
	(!A1 * C1 * X)	-0.00250	-0.00251	-0.00249
	(!A1 * C1 * X)	0.00324	0.00327	0.00327

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)	0.00164	0.00168	0.00165
	(A1 * A2 * B1 * X)	-0.00079	-0.00081	-0.00080
	(A1 * A2 * A3 * !B1 * X)	0.00165	0.00165	0.00166
	(A1 * A2 * A3 * !B1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * B1 * X)	0.00165	0.00168	0.00165
	(A1 * !A2 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * B1 * X)	0.00165	0.00168	0.00165
	(!A1 * B1 * X)	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00163	0.00166	0.00164
	(A1 * A2 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A1 * A2 * A3 * !B1 * X)	0.00164	0.00166	0.00164
	(A1 * A2 * A3 * !B1 * X)	-0.00085	-0.00086	-0.00084
	(A1 * !A2 * B1 * X)	0.00163	0.00166	0.00164
	(A1 * !A2 * B1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * B1 * X)	0.00163	0.00166	0.00164
	(!A1 * B1 * X)	-0.00085	-0.00086	-0.00085
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00269	0.00273	0.00269
	(A1 * A2 * B1 * X)	-0.00181	-0.00183	-0.00180
	(A1 * A2 * A3 * !B1 * X)	0.00269	0.00274	0.00269
	(A1 * A2 * A3 * !B1 * X)	-0.00180	-0.00183	-0.00180
	(A1 * !A2 * B1 * X)	0.00269	0.00273	0.00269
	(A1 * !A2 * B1 * X)	-0.00181	-0.00184	-0.00181
	(!A1 * B1 * X)	0.00269	0.00273	0.00269
	(!A1 * B1 * X)	-0.00181	-0.00184	-0.00181

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)	-0.00160	-0.00161	-0.00165
	(A1 * A2 * B1 * X)	0.00084	0.00084	0.00081
	(A1 * A2 * A3 * !B1 * X)	-0.00147	-0.00148	-0.00162
	(A1 * A2 * A3 * !B1 * X)	0.00093	0.00093	0.00083
	(A1 * !A2 * B1 * X)	-0.00160	-0.00161	-0.00165
	(A1 * !A2 * B1 * X)	0.00084	0.00084	0.00081
	(!A1 * B1 * X)	-0.00161	-0.00161	-0.00165
	(!A1 * B1 * X)	0.00084	0.00084	0.00081
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00159	-0.00160	-0.00163
	(A1 * A2 * B1 * X)	0.00089	0.00090	0.00086
	(A1 * A2 * A3 * !B1 * X)	-0.00146	-0.00147	-0.00161
	(A1 * A2 * A3 * !B1 * X)	0.00098	0.00098	0.00087
	(A1 * !A2 * B1 * X)	-0.00159	-0.00160	-0.00163
	(A1 * !A2 * B1 * X)	0.00089	0.00090	0.00086
	(!A1 * B1 * X)	-0.00159	-0.00160	-0.00163
	(!A1 * B1 * X)	0.00090	0.00090	0.00086
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00254	-0.00256	-0.00267
	(A1 * A2 * B1 * X)	0.00196	0.00196	0.00184
	(A1 * A2 * A3 * !B1 * X)	-0.00224	-0.00227	-0.00261
	(A1 * A2 * A3 * !B1 * X)	0.00213	0.00215	0.00187
	(A1 * !A2 * B1 * X)	-0.00254	-0.00256	-0.00267
	(A1 * !A2 * B1 * X)	0.00196	0.00196	0.00184
	(!A1 * B1 * X)	-0.00252	-0.00256	-0.00267
	(!A1 * B1 * X)	0.00194	0.00196	0.00184

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00282	0.00290	0.00279	0.00286	0.50725
sky130_fd_sc_hs__a31oi_2	0.00538	0.00523	0.00557	0.00428	0.97087
sky130_fd_sc_hs__a31oi_4	0.01089	0.01031	0.01029	0.00863	1.65698

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.03113	0.06245
sky130_fd_sc_hs__a31oi_2	0.00000	0.05955	0.12491
sky130_fd_sc_hs__a31oi_4	0.00000	0.11909	0.24981

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)	0.09072	0.97318	10.55020
	A2->Y (FR)	0.11564	1.01902	10.79480
	A3->Y (FR)	0.12792	1.02551	10.71080
	B1->Y (FR)	0.08603	0.99810	11.00560
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.08212	0.84455	10.68620
	A2->Y (FR)	0.09994	0.85953	10.65250
	A3->Y (FR)	0.11483	0.86107	10.45330
	B1->Y (FR)	0.06620	0.83885	10.88370
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.08246	0.73488	10.36660
	A2->Y (FR)	0.10458	0.74900	10.24060
	A3->Y (FR)	0.12809	0.78458	10.41910
	B1->Y (FR)	0.09332	0.77506	10.82160

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.03933	0.49600	5.36550
	A2->Y (RF)	0.04702	0.47265	5.00008
	A3->Y (RF)	0.04982	0.42983	4.40307
	B1->Y (RF)	0.01949	0.33030	3.62987
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.03807	0.46886	5.89261
	A2->Y (RF)	0.04358	0.40840	5.01927
	A3->Y (RF)	0.04828	0.37716	4.49740
	B1->Y (RF)	0.02374	0.43183	5.65914
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.04027	0.42588	5.96772
	A2->Y (RF)	0.04854	0.37443	5.11788
	A3->Y (RF)	0.05303	0.32761	4.35244
	B1->Y (RF)	0.02189	0.34371	5.04672

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00005	-0.00009	0.00196
	A1	0.00555	0.00541	0.00751
	A2	0.00069	0.00049	0.00252
	A2	0.00719	0.00700	0.00907
	A3	0.00097	0.00083	0.00289
	A3	0.00845	0.00832	0.01036
	B1	-0.00034	-0.00003	0.00597
	B1	0.00417	0.00449	0.01056
sky130_fd_sc_hs__a31oi_2	A1	0.00011	-0.00014	0.00375
	A1	0.01047	0.01022	0.01422
	A2	0.00125	0.00096	0.00493
	A2	0.01336	0.01309	0.01716
	A3	0.00222	0.00194	0.00589
	A3	0.01641	0.01597	0.02013
	B1	0.00065	0.00148	0.00823
	B1	0.01040	0.01048	0.01754
sky130_fd_sc_hs__a31oi_4	A1	-0.00126	-0.00171	0.00642
	A1	0.01998	0.01923	0.02766
	A2	0.00189	0.00114	0.00939
	A2	0.02668	0.02591	0.03425
	A3	0.00418	0.00356	0.01175
	A3	0.03280	0.03223	0.04038
	B1	-0.00009	0.00112	0.01582
	B1	0.02060	0.02142	0.03533

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00707	0.00700	0.00916
	A1	0.00165	0.00157	0.00370
	A2	0.00812	0.00801	0.00993
	A2	0.00165	0.00149	0.00314
	A3	0.00909	0.00896	0.01076
	A3	0.00157	0.00141	0.00314
	B1	0.00445	0.00456	0.00740
	B1	-0.00007	0.00002	0.00279
sky130_fd_sc_hs__a31oi_2	A1	0.01298	0.01277	0.01661
	A1	0.00281	0.00257	0.00647
	A2	0.01483	0.01454	0.01864
	A2	0.00276	0.00246	0.00578
	A3	0.01707	0.01677	0.02014
	A3	0.00279	0.00243	0.00590
	B1	0.00507	0.00528	0.00902
	B1	-0.00139	-0.00129	0.00218
sky130_fd_sc_hs__a31oi_4	A1	0.02624	0.02574	0.03414
	A1	0.00538	0.00477	0.01253
	A2	0.02992	0.02919	0.03684
	A2	0.00521	0.00445	0.01109
	A3	0.03402	0.03328	0.04125
	A3	0.00514	0.00435	0.01145
	B1	0.01077	0.01105	0.01995
	B1	-0.00286	-0.00261	0.00486

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)**	0.00158	0.00148	0.00146
	(A2 * A3 * B1 * !Y)	-0.00155	-0.00173	-0.00172
	(A2 * !A3 * B1 * !Y)	0.00136	0.00137	0.00136
	(A2 * !A3 * B1 * !Y)	-0.00176	-0.00177	-0.00176
	(A2 * !A3 * !B1 * Y)	0.00048	0.00048	0.00044
	(A2 * !A3 * !B1 * Y)	-0.00203	-0.00204	-0.00210
	(!A2 * B1 * !Y)	0.00140	0.00141	0.00140
	(!A2 * B1 * !Y)	-0.00177	-0.00177	-0.00176
	(!A2 * !B1 * Y)	0.00049	0.00049	0.00047
	(!A2 * !B1 * Y)	-0.00207	-0.00208	-0.00211
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00315	0.00298	0.00294
	(A2 * A3 * B1 * !Y)	-0.00318	-0.00353	-0.00352
	(A2 * !A3 * B1 * !Y)	0.00278	0.00280	0.00278
	(A2 * !A3 * B1 * !Y)	-0.00360	-0.00361	-0.00360
	(A2 * !A3 * !B1 * Y)	0.00094	0.00094	0.00086
	(A2 * !A3 * !B1 * Y)	-0.00416	-0.00419	-0.00433
	(!A2 * B1 * !Y)	0.00279	0.00280	0.00280
	(!A2 * B1 * !Y)	-0.00359	-0.00360	-0.00360
	(!A2 * !B1 * Y)	0.00091	0.00091	0.00087
	(!A2 * !B1 * Y)	-0.00428	-0.00431	-0.00436
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00658	0.00618	0.00609
	(A2 * A3 * B1 * !Y)	-0.00624	-0.00696	-0.00693
	(A2 * !A3 * B1 * !Y)	0.00570	0.00579	0.00574
	(A2 * !A3 * B1 * !Y)	-0.00706	-0.00714	-0.00709
	(A2 * !A3 * !B1 * Y)	0.00198	0.00199	0.00181
	(A2 * !A3 * !B1 * Y)	-0.00831	-0.00837	-0.00866
	(!A2 * B1 * !Y)	0.00580	0.00585	0.00583
	(!A2 * B1 * !Y)	-0.00707	-0.00712	-0.00709
	(!A2 * !B1 * Y)	0.00202	0.00202	0.00192
	(!A2 * !B1 * Y)	-0.00854	-0.00860	-0.00870

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)	-0.00146	-0.00146	-0.00146
	(A2 * A3 * B1 * !Y)	0.00171	0.00173	0.00172
	(A2 * !A3 * B1 * !Y)	-0.00125	-0.00137	-0.00136
	(A2 * !A3 * B1 * !Y)	0.00176	0.00179	0.00177
	(A2 * !A3 * !B1 * Y)	-0.00044	-0.00044	-0.00044
	(A2 * !A3 * !B1 * Y)	0.00210	0.00211	0.00211
	(!A2 * B1 * !Y)	-0.00136	-0.00141	-0.00140
	(!A2 * B1 * !Y)	0.00177	0.00180	0.00177
	(!A2 * !B1 * Y)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * Y)	0.00210	0.00212	0.00211
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00293	-0.00294	-0.00293
	(A2 * A3 * B1 * !Y)	0.00350	0.00353	0.00352
	(A2 * !A3 * B1 * !Y)	-0.00247	-0.00280	-0.00278
	(A2 * !A3 * B1 * !Y)	0.00361	0.00364	0.00361
	(A2 * !A3 * !B1 * Y)	-0.00084	-0.00084	-0.00083
	(A2 * !A3 * !B1 * Y)	0.00436	0.00437	0.00436
	(!A2 * B1 * !Y)	-0.00270	-0.00280	-0.00280
	(!A2 * B1 * !Y)	0.00361	0.00364	0.00361
	(!A2 * !B1 * Y)	-0.00086	-0.00085	-0.00085
	(!A2 * !B1 * Y)	0.00437	0.00438	0.00436

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00609	-0.00610	-0.00607
	(A2 * A3 * B1 * !Y)	0.00693	0.00696	0.00693
	(A2 * !A3 * B1 * !Y)	-0.00510	-0.00579	-0.00574
	(A2 * !A3 * B1 * !Y)	0.00713	0.00719	0.00712
	(A2 * !A3 * !B1 * Y)	-0.00179	-0.00181	-0.00180
	(A2 * !A3 * !B1 * Y)	0.00867	0.00875	0.00872
	(!A2 * B1 * !Y)	-0.00560	-0.00585	-0.00583
	(!A2 * B1 * !Y)	0.00707	0.00718	0.00712
	(!A2 * !B1 * Y)	-0.00186	-0.00187	-0.00186
	(!A2 * !B1 * Y)	0.00868	0.00876	0.00872

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)**	0.00167	0.00158	0.00156
	(A1 * A3 * B1 * !Y)	-0.00155	-0.00173	-0.00172
	(A1 * !A3 * B1 * !Y)	0.00148	0.00149	0.00149
	(A1 * !A3 * B1 * !Y)	-0.00176	-0.00177	-0.00176
	(A1 * !A3 * !B1 * Y)	0.00057	0.00057	0.00057
	(A1 * !A3 * !B1 * Y)	-0.00195	-0.00195	-0.00195
	(!A1 * A3 * B1 * !Y)	0.00149	0.00151	0.00149
	(!A1 * A3 * B1 * !Y)	-0.00176	-0.00177	-0.00176
	(!A1 * A3 * !B1 * Y)	0.00130	0.00131	0.00131
	(!A1 * A3 * !B1 * Y)	-0.00194	-0.00195	-0.00195
	(!A1 * !A3 * B1 * !Y)	0.00092	0.00093	0.00092
	(!A1 * !A3 * B1 * !Y)	-0.00176	-0.00177	-0.00176
	(!A1 * !A3 * !B1 * Y)	0.00067	0.00067	0.00067
	(!A1 * !A3 * !B1 * Y)	-0.00196	-0.00197	-0.00196

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00293	0.00276	0.00273
	(A1 * A3 * B1 * !Y)	-0.00321	-0.00355	-0.00354
	(A1 * !A3 * B1 * !Y)	0.00258	0.00260	0.00259
	(A1 * !A3 * B1 * !Y)	-0.00360	-0.00363	-0.00362
	(A1 * !A3 * !B1 * Y)	0.00111	0.00112	0.00111
	(A1 * !A3 * !B1 * Y)	-0.00362	-0.00364	-0.00362
	(!A1 * A3 * B1 * !Y)	0.00258	0.00262	0.00260
	(!A1 * A3 * B1 * !Y)	-0.00360	-0.00364	-0.00362
	(!A1 * A3 * !B1 * Y)	0.00258	0.00259	0.00259
	(!A1 * A3 * !B1 * Y)	-0.00362	-0.00363	-0.00362
	(!A1 * !A3 * B1 * !Y)	0.00146	0.00146	0.00146
	(!A1 * !A3 * B1 * !Y)	-0.00361	-0.00362	-0.00362
	(!A1 * !A3 * !B1 * Y)	0.00131	0.00132	0.00131
	(!A1 * !A3 * !B1 * Y)	-0.00366	-0.00368	-0.00366
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00628	0.00587	0.00578
	(A1 * A3 * B1 * !Y)	-0.00636	-0.00711	-0.00709
	(A1 * !A3 * B1 * !Y)	0.00541	0.00546	0.00543
	(A1 * !A3 * B1 * !Y)	-0.00725	-0.00725	-0.00726
	(A1 * !A3 * !B1 * Y)	0.00241	0.00243	0.00245
	(A1 * !A3 * !B1 * Y)	-0.00730	-0.00734	-0.00730
	(!A1 * A3 * B1 * !Y)	0.00555	0.00560	0.00558
	(!A1 * A3 * B1 * !Y)	-0.00724	-0.00728	-0.00726
	(!A1 * A3 * !B1 * Y)	0.00550	0.00555	0.00552
	(!A1 * A3 * !B1 * Y)	-0.00728	-0.00733	-0.00731
	(!A1 * !A3 * B1 * !Y)	0.00321	0.00322	0.00321
	(!A1 * !A3 * B1 * !Y)	-0.00725	-0.00728	-0.00726
	(!A1 * !A3 * !B1 * Y)	0.00290	0.00290	0.00289
	(!A1 * !A3 * !B1 * Y)	-0.00739	-0.00739	-0.00737

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)	-0.00156	-0.00156	-0.00156
	(A1 * A3 * B1 * !Y)	0.00172	0.00173	0.00172
	(A1 * !A3 * B1 * !Y)	-0.00145	-0.00149	-0.00149
	(A1 * !A3 * B1 * !Y)	0.00177	0.00179	0.00177
	(A1 * !A3 * !B1 * Y)	-0.00053	-0.00055	-0.00055
	(A1 * !A3 * !B1 * Y)	0.00199	0.00203	0.00197
	(!A1 * A3 * B1 * !Y)	-0.00145	-0.00150	-0.00149
	(!A1 * A3 * B1 * !Y)	0.00176	0.00178	0.00177
	(!A1 * A3 * !B1 * Y)	-0.00120	-0.00131	-0.00131
	(!A1 * A3 * !B1 * Y)	0.00202	0.00197	0.00195
	(!A1 * !A3 * B1 * !Y)	-0.00092	-0.00093	-0.00092
	(!A1 * !A3 * B1 * !Y)	0.00176	0.00179	0.00177
	(!A1 * !A3 * !B1 * Y)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * !B1 * Y)	0.00204	0.00206	0.00198
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00271	-0.00272	-0.00271
	(A1 * A3 * B1 * !Y)	0.00352	0.00355	0.00354
	(A1 * !A3 * B1 * !Y)	-0.00250	-0.00260	-0.00259
	(A1 * !A3 * B1 * !Y)	0.00364	0.00365	0.00363
	(A1 * !A3 * !B1 * Y)	-0.00105	-0.00107	-0.00107
	(A1 * !A3 * !B1 * Y)	0.00375	0.00379	0.00367
	(!A1 * A3 * B1 * !Y)	-0.00249	-0.00261	-0.00260
	(!A1 * A3 * B1 * !Y)	0.00362	0.00365	0.00363
	(!A1 * A3 * !B1 * Y)	-0.00237	-0.00259	-0.00259
	(!A1 * A3 * !B1 * Y)	0.00377	0.00367	0.00364
	(!A1 * !A3 * B1 * !Y)	-0.00146	-0.00146	-0.00146
	(!A1 * !A3 * B1 * !Y)	0.00361	0.00367	0.00363
	(!A1 * !A3 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(!A1 * !A3 * !B1 * Y)	0.00381	0.00388	0.00371

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00576	-0.00578	-0.00576
	(A1 * A3 * B1 * !Y)	0.00706	0.00711	0.00709
	(A1 * !A3 * B1 * !Y)	-0.00523	-0.00545	-0.00543
	(A1 * !A3 * B1 * !Y)	0.00727	0.00725	0.00728
	(A1 * !A3 * !B1 * Y)	-0.00230	-0.00233	-0.00236
	(A1 * !A3 * !B1 * Y)	0.00756	0.00765	0.00739
	(!A1 * A3 * B1 * !Y)	-0.00534	-0.00560	-0.00558
	(!A1 * A3 * B1 * !Y)	0.00730	0.00735	0.00728
	(!A1 * A3 * !B1 * Y)	-0.00499	-0.00555	-0.00552
	(!A1 * A3 * !B1 * Y)	0.00770	0.00740	0.00733
	(!A1 * !A3 * B1 * !Y)	-0.00321	-0.00322	-0.00321
	(!A1 * !A3 * B1 * !Y)	0.00732	0.00737	0.00729
	(!A1 * !A3 * !B1 * Y)	-0.00290	-0.00290	-0.00289
	(!A1 * !A3 * !B1 * Y)	0.00775	0.00781	0.00747

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)**	0.00173	0.00164	0.00161
	(A1 * A2 * B1 * !Y)	-0.00162	-0.00179	-0.00178
	(A1 * !A2 * !B1 * Y)	0.00143	0.00144	0.00143
	(A1 * !A2 * !B1 * Y)	-0.00192	-0.00194	-0.00193
	(!A2 * B1 * !Y)	0.00155	0.00155	0.00154
	(!A2 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * A2 * B1 * !Y)	0.00152	0.00153	0.00151
	(!A1 * A2 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * A2 * !B1 * Y)	0.00141	0.00140	0.00140
	(!A1 * A2 * !B1 * Y)	-0.00193	-0.00192	-0.00193
	(!A1 * !A2 * !B1 * Y)	0.00143	0.00144	0.00143
	(!A1 * !A2 * !B1 * Y)	-0.00192	-0.00194	-0.00193

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00322	0.00305	0.00301
	(A1 * A2 * B1 * !Y)	-0.00318	-0.00352	-0.00351
	(A1 * !A2 * !B1 * Y)	0.00281	0.00282	0.00282
	(A1 * !A2 * !B1 * Y)	-0.00358	-0.00359	-0.00359
	(!A2 * B1 * !Y)	0.00288	0.00289	0.00288
	(!A2 * B1 * !Y)	-0.00357	-0.00359	-0.00358
	(!A1 * A2 * B1 * !Y)	0.00280	0.00281	0.00279
	(!A1 * A2 * B1 * !Y)	-0.00358	-0.00359	-0.00358
	(!A1 * A2 * !B1 * Y)	0.00276	0.00281	0.00278
	(!A1 * A2 * !B1 * Y)	-0.00357	-0.00359	-0.00359
	(!A1 * !A2 * !B1 * Y)	0.00282	0.00286	0.00283
	(!A1 * !A2 * !B1 * Y)	-0.00358	-0.00361	-0.00359
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00623	0.00583	0.00574
	(A1 * A2 * B1 * !Y)	-0.00640	-0.00708	-0.00707
	(A1 * !A2 * !B1 * Y)	0.00541	0.00544	0.00543
	(A1 * !A2 * !B1 * Y)	-0.00722	-0.00724	-0.00724
	(!A2 * B1 * !Y)	0.00546	0.00548	0.00546
	(!A2 * B1 * !Y)	-0.00723	-0.00725	-0.00723
	(!A1 * A2 * B1 * !Y)	0.00534	0.00535	0.00533
	(!A1 * A2 * B1 * !Y)	-0.00725	-0.00725	-0.00723
	(!A1 * A2 * !B1 * Y)	0.00529	0.00537	0.00532
	(!A1 * A2 * !B1 * Y)	-0.00721	-0.00727	-0.00724
	(!A1 * !A2 * !B1 * Y)	0.00541	0.00543	0.00542
	(!A1 * !A2 * !B1 * Y)	-0.00723	-0.00725	-0.00724

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)**	-0.00161	-0.00162	-0.00161
	(A1 * A2 * B1 * !Y)	0.00177	0.00179	0.00178
	(A1 * !A2 * !B1 * Y)	-0.00138	-0.00144	-0.00143
	(A1 * !A2 * !B1 * Y)	0.00192	0.00195	0.00193
	(!A2 * B1 * !Y)	-0.00150	-0.00155	-0.00154
	(!A2 * B1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * A2 * B1 * !Y)	-0.00144	-0.00153	-0.00151
	(!A1 * A2 * B1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * A2 * !B1 * Y)	-0.00132	-0.00140	-0.00140
	(!A1 * A2 * !B1 * Y)	0.00193	0.00195	0.00193
	(!A1 * !A2 * !B1 * Y)	-0.00138	-0.00144	-0.00143
	(!A1 * !A2 * !B1 * Y)	0.00192	0.00195	0.00193
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00300	-0.00301	-0.00300
	(A1 * A2 * B1 * !Y)	0.00351	0.00352	0.00351
	(A1 * !A2 * !B1 * Y)	-0.00269	-0.00282	-0.00282
	(A1 * !A2 * !B1 * Y)	0.00359	0.00363	0.00360
	(!A2 * B1 * !Y)	-0.00279	-0.00288	-0.00288
	(!A2 * B1 * !Y)	0.00358	0.00361	0.00359
	(!A1 * A2 * B1 * !Y)	-0.00260	-0.00281	-0.00279
	(!A1 * A2 * B1 * !Y)	0.00358	0.00362	0.00359
	(!A1 * A2 * !B1 * Y)	-0.00259	-0.00280	-0.00278
	(!A1 * A2 * !B1 * Y)	0.00361	0.00359	0.00360
	(!A1 * !A2 * !B1 * Y)	-0.00272	-0.00284	-0.00283
	(!A1 * !A2 * !B1 * Y)	0.00359	0.00363	0.00360

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00572	-0.00573	-0.00572
	(A1 * A2 * B1 * !Y)	0.00704	0.00708	0.00707
	(A1 * !A2 * !B1 * Y)	-0.00516	-0.00544	-0.00543
	(A1 * !A2 * !B1 * Y)	0.00723	0.00733	0.00726
	(!A2 * B1 * !Y)	-0.00523	-0.00544	-0.00546
	(!A2 * B1 * !Y)	0.00723	0.00728	0.00725
	(!A1 * A2 * B1 * !Y)	-0.00496	-0.00535	-0.00533
	(!A1 * A2 * B1 * !Y)	0.00727	0.00731	0.00725
	(!A1 * A2 * !B1 * Y)	-0.00494	-0.00537	-0.00532
	(!A1 * A2 * !B1 * Y)	0.00729	0.00734	0.00726
	(!A1 * !A2 * !B1 * Y)	-0.00519	-0.00543	-0.00542
	(!A1 * !A2 * !B1 * Y)	0.00723	0.00733	0.00726

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)**	0.00178	0.00180	0.00177
	(A1 * A2 * A3 * !Y)	-0.00086	-0.00087	-0.00085
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00188	0.00192	0.00189
	(A1 * A2 * A3 * !Y)	-0.00169	-0.00172	-0.00169
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00394	0.00399	0.00393
	(A1 * A2 * A3 * !Y)	-0.00350	-0.00353	-0.00346

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)	-0.00165	-0.00166	-0.00176
	(A1 * A2 * A3 * !Y)	0.00097	0.00097	0.00088
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00159	-0.00161	-0.00185
	(A1 * A2 * A3 * !Y)	0.00195	0.00195	0.00175
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00335	-0.00340	-0.00386
	(A1 * A2 * A3 * !Y)	0.00394	0.00396	0.00358

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00251	0.00248	0.00249	0.00270	1.06521
sky130_fd_sc_hs__a31o_2	0.00279	0.00270	0.00271	0.00263	2.09283
sky130_fd_sc_hs__a31o_4	0.00494	0.00479	0.00477	0.00492	4.06447

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	0.09985	0.14703
sky130_fd_sc_hs__a31o_2	0.00000	0.12514	0.15322
sky130_fd_sc_hs__a31o_4	0.00000	0.25294	0.30644

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)	0.09256	0.63121	6.34912
	A2->X (RR)	0.09921	0.63946	6.37682
	A3->X (RR)	0.10296	0.62682	6.29517
	B1->X (RR)	0.06235	0.57681	6.21115
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.09589	0.55837	6.40928
	A2->X (RR)	0.10223	0.56032	6.42144
	A3->X (RR)	0.10590	0.54420	6.33881
	B1->X (RR)	0.05951	0.49192	6.23334
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.11018	0.51574	6.52025
	A2->X (RR)	0.11736	0.50949	6.49876
	A3->X (RR)	0.12225	0.49202	6.41380
	B1->X (RR)	0.05942	0.41963	6.27299

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.13346	0.57532	4.53856
	A2->X (FF)	0.15647	0.61158	4.63412
	A3->X (FF)	0.16993	0.63438	4.70936
	B1->X (FF)	0.14545	0.61568	4.73628
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.17608	0.62049	4.75915
	A2->X (FF)	0.20497	0.66073	4.87129
	A3->X (FF)	0.21430	0.67560	4.92389
	B1->X (FF)	0.18773	0.66772	4.94434
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.17337	0.58466	4.80480
	A2->X (FF)	0.19570	0.61946	4.90059
	A3->X (FF)	0.21696	0.65088	4.99302
	B1->X (FF)	0.18435	0.62930	4.99336

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00917	0.00944	0.02300
	A1	0.00433	0.00461	0.01836
	A2	0.00996	0.00998	0.02140
	A2	0.00433	0.00434	0.01596
	A3	0.01084	0.01075	0.02033
	A3	0.00432	0.00422	0.01405
	B1	0.00708	0.00782	0.03039
	B1	0.00290	0.00365	0.02652
sky130_fd_sc_hs__a31o_2	A1	0.01213	0.01251	0.02546
	A1	0.00688	0.00725	0.02056
	A2	0.01302	0.01321	0.02426
	A2	0.00687	0.00706	0.01846
	A3	0.01401	0.01415	0.02353
	A3	0.00683	0.00699	0.01677
	B1	0.01064	0.01147	0.03132
	B1	0.00539	0.00628	0.02842
sky130_fd_sc_hs__a31o_4	A1	0.02354	0.02446	0.05090
	A1	0.01385	0.01477	0.04170
	A2	0.02523	0.02585	0.04823
	A2	0.01382	0.01445	0.03737
	A3	0.02706	0.02763	0.04959
	A3	0.01379	0.01443	0.03708
	B1	0.01726	0.01916	0.06495
	B1	0.00971	0.01166	0.05865

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00318	0.00328	0.01459
	A1	0.00806	0.00813	0.01945
	A2	0.00368	0.00379	0.01473
	A2	0.00931	0.00942	0.02013
	A3	0.00391	0.00392	0.01502
	A3	0.01038	0.01037	0.02083
	B1	0.00262	0.00415	0.02721
	B1	0.00679	0.00822	0.03113
sky130_fd_sc_hs__a31o_2	A1	0.00561	0.00573	0.01794
	A1	0.01093	0.01103	0.02212
	A2	0.00628	0.00637	0.01888
	A2	0.01242	0.01250	0.02333
	A3	0.00665	0.00657	0.01889
	A3	0.01372	0.01366	0.02432
	B1	0.00518	0.00664	0.02960
	B1	0.01106	0.01224	0.03311
sky130_fd_sc_hs__a31o_4	A1	0.01152	0.01181	0.03689
	A1	0.02135	0.02157	0.04490
	A2	0.01264	0.01290	0.03610
	A2	0.02407	0.02427	0.04618
	A3	0.01383	0.01420	0.03728
	A3	0.02694	0.02730	0.04895
	B1	0.01078	0.01365	0.05998
	B1	0.02130	0.02385	0.06561

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)**	0.00139	0.00125	0.00122
	(A2 * A3 * B1 * X)	-0.00141	-0.00161	-0.00161
	(A2 * !A3 * B1 * X)	0.00113	0.00113	0.00113
	(A2 * !A3 * B1 * X)	-0.00165	-0.00165	-0.00165
	(A2 * !A3 * !B1 * !X)	0.00038	0.00038	0.00035
	(A2 * !A3 * !B1 * !X)	-0.00188	-0.00189	-0.00194
	(!A2 * B1 * X)	0.00116	0.00118	0.00117
	(!A2 * B1 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * !B1 * !X)	0.00039	0.00039	0.00037
	(!A2 * !B1 * !X)	-0.00192	-0.00192	-0.00195
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00170	0.00157	0.00154
	(A2 * A3 * B1 * X)	-0.00136	-0.00156	-0.00156
	(A2 * !A3 * B1 * X)	0.00144	0.00145	0.00144
	(A2 * !A3 * B1 * X)	-0.00160	-0.00160	-0.00159
	(A2 * !A3 * !B1 * !X)	0.00049	0.00049	0.00045
	(A2 * !A3 * !B1 * !X)	-0.00193	-0.00194	-0.00200
	(!A2 * B1 * X)	0.00147	0.00148	0.00148
	(!A2 * B1 * X)	-0.00159	-0.00159	-0.00159
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00048
	(!A2 * !B1 * !X)	-0.00198	-0.00198	-0.00201
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00289	0.00265	0.00261
	(A2 * A3 * B1 * X)	-0.00284	-0.00324	-0.00324
	(A2 * !A3 * B1 * X)	0.00243	0.00246	0.00243
	(A2 * !A3 * B1 * X)	-0.00332	-0.00334	-0.00332
	(A2 * !A3 * !B1 * !X)	0.00091	0.00091	0.00083
	(A2 * !A3 * !B1 * !X)	-0.00379	-0.00380	-0.00395
	(!A2 * B1 * X)	0.00249	0.00253	0.00251
	(!A2 * B1 * X)	-0.00331	-0.00333	-0.00332
	(!A2 * !B1 * !X)	0.00090	0.00090	0.00086
	(!A2 * !B1 * !X)	-0.00390	-0.00390	-0.00396

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)	-0.00122	-0.00122	-0.00121
	(A2 * A3 * B1 * X)	0.00160	0.00162	0.00161
	(A2 * !A3 * B1 * X)	-0.00105	-0.00113	-0.00113
	(A2 * !A3 * B1 * X)	0.00167	0.00167	0.00166
	(A2 * !A3 * !B1 * !X)	-0.00035	-0.00036	-0.00035
	(A2 * !A3 * !B1 * !X)	0.00194	0.00198	0.00195
	(!A2 * B1 * X)	-0.00113	-0.00117	-0.00117
	(!A2 * B1 * X)	0.00166	0.00166	0.00166
	(!A2 * !B1 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * !X)	0.00194	0.00198	0.00195
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00153	-0.00154	-0.00153
	(A2 * A3 * B1 * X)	0.00155	0.00156	0.00156
	(A2 * !A3 * B1 * X)	-0.00134	-0.00145	-0.00144
	(A2 * !A3 * B1 * X)	0.00160	0.00160	0.00160
	(A2 * !A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * !B1 * !X)	0.00201	0.00204	0.00201
	(!A2 * B1 * X)	-0.00144	-0.00148	-0.00148
	(!A2 * B1 * X)	0.00160	0.00160	0.00160
	(!A2 * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !X)	0.00201	0.00204	0.00201

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00260	-0.00261	-0.00259
	(A2 * A3 * B1 * X)	0.00324	0.00326	0.00324
	(A2 * !A3 * B1 * X)	-0.00224	-0.00245	-0.00243
	(A2 * !A3 * B1 * X)	0.00332	0.00334	0.00333
	(A2 * !A3 * !B1 * !X)	-0.00081	-0.00083	-0.00081
	(A2 * !A3 * !B1 * !X)	0.00396	0.00403	0.00397
	(!A2 * B1 * X)	-0.00242	-0.00250	-0.00251
	(!A2 * B1 * X)	0.00334	0.00333	0.00333
	(!A2 * !B1 * !X)	-0.00083	-0.00085	-0.00083
	(!A2 * !B1 * !X)	0.00396	0.00404	0.00397

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)**	0.00137	0.00123	0.00120
	(A1 * A3 * B1 * X)	-0.00140	-0.00161	-0.00161
	(A1 * !A3 * B1 * X)	0.00114	0.00115	0.00114
	(A1 * !A3 * B1 * X)	-0.00165	-0.00165	-0.00165
	(A1 * !A3 * !B1 * !X)	0.00046	0.00046	0.00046
	(A1 * !A3 * !B1 * !X)	-0.00171	-0.00170	-0.00170
	(!A1 * A3 * B1 * X)	0.00115	0.00115	0.00115
	(!A1 * A3 * B1 * X)	-0.00165	-0.00165	-0.00165
	(!A1 * A3 * !B1 * !X)	0.00110	0.00110	0.00110
	(!A1 * A3 * !B1 * !X)	-0.00171	-0.00170	-0.00170
	(!A1 * !A3 * B1 * X)	0.00065	0.00066	0.00065
	(!A1 * !A3 * B1 * X)	-0.00164	-0.00166	-0.00165
	(!A1 * !A3 * !B1 * !X)	0.00054	0.00055	0.00054
	(!A1 * !A3 * !B1 * !X)	-0.00171	-0.00171	-0.00171

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00164	0.00151	0.00148
	(A1 * A3 * B1 * X)	-0.00135	-0.00156	-0.00156
	(A1 * !A3 * B1 * X)	0.00141	0.00142	0.00141
	(A1 * !A3 * B1 * X)	-0.00159	-0.00159	-0.00159
	(A1 * !A3 * !B1 * !X)	0.00057	0.00057	0.00057
	(A1 * !A3 * !B1 * !X)	-0.00171	-0.00171	-0.00170
	(!A1 * A3 * B1 * X)	0.00141	0.00143	0.00142
	(!A1 * A3 * B1 * X)	-0.00158	-0.00160	-0.00159
	(!A1 * A3 * !B1 * !X)	0.00131	0.00133	0.00131
	(!A1 * A3 * !B1 * !X)	-0.00171	-0.00171	-0.00170
	(!A1 * !A3 * B1 * X)	0.00085	0.00086	0.00085
	(!A1 * !A3 * B1 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * !A3 * !B1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * !B1 * !X)	-0.00171	-0.00172	-0.00172
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00287	0.00262	0.00258
	(A1 * A3 * B1 * X)	-0.00285	-0.00327	-0.00326
	(A1 * !A3 * B1 * X)	0.00245	0.00248	0.00246
	(A1 * !A3 * B1 * X)	-0.00336	-0.00337	-0.00335
	(A1 * !A3 * !B1 * !X)	0.00116	0.00115	0.00116
	(A1 * !A3 * !B1 * !X)	-0.00338	-0.00337	-0.00336
	(!A1 * A3 * B1 * X)	0.00247	0.00251	0.00247
	(!A1 * A3 * B1 * X)	-0.00334	-0.00337	-0.00335
	(!A1 * A3 * !B1 * !X)	0.00247	0.00250	0.00248
	(!A1 * A3 * !B1 * !X)	-0.00334	-0.00337	-0.00335
	(!A1 * !A3 * B1 * X)	0.00149	0.00150	0.00148
	(!A1 * !A3 * B1 * X)	-0.00336	-0.00338	-0.00335
	(!A1 * !A3 * !B1 * !X)	0.00135	0.00137	0.00135
	(!A1 * !A3 * !B1 * !X)	-0.00338	-0.00342	-0.00339

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)	-0.00120	-0.00120	-0.00119
	(A1 * A3 * B1 * X)	0.00160	0.00161	0.00161
	(A1 * !A3 * B1 * X)	-0.00111	-0.00115	-0.00114
	(A1 * !A3 * B1 * X)	0.00166	0.00166	0.00165
	(A1 * !A3 * !B1 * !X)	-0.00043	-0.00044	-0.00045
	(A1 * !A3 * !B1 * !X)	0.00174	0.00177	0.00172
	(!A1 * A3 * B1 * X)	-0.00111	-0.00115	-0.00115
	(!A1 * A3 * B1 * X)	0.00165	0.00166	0.00165
	(!A1 * A3 * !B1 * !X)	-0.00100	-0.00109	-0.00110
	(!A1 * A3 * !B1 * !X)	0.00177	0.00172	0.00171
	(!A1 * !A3 * B1 * X)	-0.00065	-0.00066	-0.00065
	(!A1 * !A3 * B1 * X)	0.00165	0.00167	0.00165
	(!A1 * !A3 * !B1 * !X)	-0.00054	-0.00055	-0.00054
	(!A1 * !A3 * !B1 * !X)	0.00177	0.00180	0.00173
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00148	-0.00148	-0.00148
	(A1 * A3 * B1 * X)	0.00155	0.00156	0.00156
	(A1 * !A3 * B1 * X)	-0.00138	-0.00142	-0.00141
	(A1 * !A3 * B1 * X)	0.00160	0.00160	0.00160
	(A1 * !A3 * !B1 * !X)	-0.00054	-0.00055	-0.00055
	(A1 * !A3 * !B1 * !X)	0.00175	0.00178	0.00172
	(!A1 * A3 * B1 * X)	-0.00137	-0.00143	-0.00142
	(!A1 * A3 * B1 * X)	0.00159	0.00160	0.00160
	(!A1 * A3 * !B1 * !X)	-0.00120	-0.00131	-0.00131
	(!A1 * A3 * !B1 * !X)	0.00177	0.00173	0.00171
	(!A1 * !A3 * B1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * !A3 * B1 * X)	0.00159	0.00161	0.00160
	(!A1 * !A3 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * !B1 * !X)	0.00179	0.00182	0.00174

sky130_fd_sc_hs__a31o_4	(A1 * A3 * B1 * X)	-0.00256	-0.00257	-0.00256
	(A1 * A3 * B1 * X)	0.00325	0.00327	0.00326
	(A1 * !A3 * B1 * X)	-0.00235	-0.00248	-0.00246
	(A1 * !A3 * B1 * X)	0.00337	0.00339	0.00336
	(A1 * !A3 * !B1 * !X)	-0.00108	-0.00110	-0.00111
	(A1 * !A3 * !B1 * !X)	0.00346	0.00351	0.00340
	(!A1 * A3 * B1 * X)	-0.00238	-0.00249	-0.00247
	(!A1 * A3 * B1 * X)	0.00335	0.00338	0.00336
	(!A1 * A3 * !B1 * !X)	-0.00225	-0.00248	-0.00248
	(!A1 * A3 * !B1 * !X)	0.00352	0.00340	0.00336
	(!A1 * !A3 * B1 * X)	-0.00149	-0.00150	-0.00148
	(!A1 * !A3 * B1 * X)	0.00338	0.00340	0.00337
	(!A1 * !A3 * !B1 * !X)	-0.00135	-0.00137	-0.00135
	(!A1 * !A3 * !B1 * !X)	0.00359	0.00360	0.00345

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)	0.00146	0.00135	0.00132
	(A1 * A2 * B1 * X)	-0.00139	-0.00159	-0.00159
	(A1 * !A2 * !B1 * !X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !B1 * !X)	-0.00177	-0.00178	-0.00177
	(!A2 * B1 * X)	0.00126	0.00127	0.00126
	(!A2 * B1 * X)	-0.00162	-0.00163	-0.00162
	(!A1 * A2 * B1 * X)	0.00124	0.00124	0.00124
	(!A1 * A2 * B1 * X)	-0.00162	-0.00162	-0.00162
	(!A1 * A2 * !B1 * !X)	0.00109	0.00110	0.00109
	(!A1 * A2 * !B1 * !X)	-0.00178	-0.00178	-0.00177
	(!A1 * !A2 * !B1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !A2 * !B1 * !X)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00173	0.00162	0.00159
	(A1 * A2 * B1 * X)	-0.00136	-0.00154	-0.00154
	(A1 * !A2 * !B1 * !X)	0.00131	0.00131	0.00131
	(A1 * !A2 * !B1 * !X)	-0.00178	-0.00178	-0.00178
	(!A2 * B1 * X)	0.00152	0.00153	0.00152
	(!A2 * B1 * X)	-0.00156	-0.00158	-0.00157
	(!A1 * A2 * B1 * X)	0.00151	0.00151	0.00151
	(!A1 * A2 * B1 * X)	-0.00157	-0.00157	-0.00157
	(!A1 * A2 * !B1 * !X)	0.00130	0.00130	0.00129
	(!A1 * A2 * !B1 * !X)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * !B1 * !X)	0.00130	0.00131	0.00131
	(!A1 * !A2 * !B1 * !X)	-0.00178	-0.00178	-0.00178
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00283	0.00260	0.00255
	(A1 * A2 * B1 * X)	-0.00287	-0.00327	-0.00328
	(A1 * !A2 * !B1 * !X)	0.00241	0.00244	0.00243
	(A1 * !A2 * !B1 * !X)	-0.00334	-0.00338	-0.00336
	(!A2 * B1 * X)	0.00243	0.00244	0.00242
	(!A2 * B1 * X)	-0.00336	-0.00337	-0.00336
	(!A1 * A2 * B1 * X)	0.00237	0.00239	0.00236
	(!A1 * A2 * B1 * X)	-0.00337	-0.00338	-0.00336
	(!A1 * A2 * !B1 * !X)	0.00237	0.00237	0.00236
	(!A1 * A2 * !B1 * !X)	-0.00337	-0.00337	-0.00336
	(!A1 * !A2 * !B1 * !X)	0.00241	0.00244	0.00242
	(!A1 * !A2 * !B1 * !X)	-0.00335	-0.00338	-0.00336

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)**	-0.00132	-0.00132	-0.00132
	(A1 * A2 * B1 * X)	0.00158	0.00159	0.00159
	(A1 * !A2 * !B1 * !X)	-0.00106	-0.00112	-0.00111
	(A1 * !A2 * !B1 * !X)	0.00177	0.00180	0.00178
	(!A2 * B1 * X)	-0.00123	-0.00126	-0.00126
	(!A2 * B1 * X)	0.00162	0.00164	0.00163
	(!A1 * A2 * B1 * X)	-0.00117	-0.00124	-0.00124
	(!A1 * A2 * B1 * X)	0.00162	0.00164	0.00163
	(!A1 * A2 * !B1 * !X)	-0.00102	-0.00110	-0.00109
	(!A1 * A2 * !B1 * !X)	0.00178	0.00180	0.00178
	(!A1 * !A2 * !B1 * !X)	-0.00108	-0.00112	-0.00111
	(!A1 * !A2 * !B1 * !X)	0.00179	0.00179	0.00178
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00158	-0.00159	-0.00158
	(A1 * A2 * B1 * X)	0.00153	0.00154	0.00154
	(A1 * !A2 * !B1 * !X)	-0.00127	-0.00131	-0.00131
	(A1 * !A2 * !B1 * !X)	0.00179	0.00181	0.00179
	(!A2 * B1 * X)	-0.00148	-0.00152	-0.00152
	(!A2 * B1 * X)	0.00156	0.00158	0.00158
	(!A1 * A2 * B1 * X)	-0.00141	-0.00151	-0.00151
	(!A1 * A2 * B1 * X)	0.00157	0.00159	0.00158
	(!A1 * A2 * !B1 * !X)	-0.00120	-0.00130	-0.00129
	(!A1 * A2 * !B1 * !X)	0.00178	0.00182	0.00179
	(!A1 * !A2 * !B1 * !X)	-0.00127	-0.00131	-0.00131
	(!A1 * !A2 * !B1 * !X)	0.00179	0.00181	0.00179

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00255	-0.00254	-0.00254
	(A1 * A2 * B1 * X)	0.00328	0.00327	0.00328
	(A1 * !A2 * !B1 * !X)	-0.00230	-0.00243	-0.00243
	(A1 * !A2 * !B1 * !X)	0.00337	0.00340	0.00338
	(!A2 * B1 * X)	-0.00233	-0.00242	-0.00242
	(!A2 * B1 * X)	0.00336	0.00338	0.00337
	(!A1 * A2 * B1 * X)	-0.00221	-0.00239	-0.00236
	(!A1 * A2 * B1 * X)	0.00337	0.00340	0.00337
	(!A1 * A2 * !B1 * !X)	-0.00219	-0.00237	-0.00236
	(!A1 * A2 * !B1 * !X)	0.00338	0.00341	0.00337
	(!A1 * !A2 * !B1 * !X)	-0.00231	-0.00243	-0.00242
	(!A1 * !A2 * !B1 * !X)	0.00337	0.00340	0.00338

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)**	0.00175	0.00179	0.00176
	(A1 * A2 * A3 * X)	-0.00080	-0.00082	-0.00080
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00166	0.00170	0.00167
	(A1 * A2 * A3 * X)	-0.00078	-0.00080	-0.00078
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00289	0.00294	0.00290
	(A1 * A2 * A3 * X)	-0.00170	-0.00173	-0.00170

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)	-0.00164	-0.00165	-0.00175
	(A1 * A2 * A3 * X)	0.00089	0.00089	0.00082
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00156	-0.00157	-0.00166
	(A1 * A2 * A3 * X)	0.00088	0.00088	0.00081
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00260	-0.00263	-0.00286
	(A1 * A2 * A3 * X)	0.00194	0.00194	0.00175

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00287	0.00287	0.00259	0.00293	0.00271	0.50251
sky130_fd_sc_hs__a32oi_2	0.00541	0.00526	0.00517	0.00546	0.00532	0.92942
sky130_fd_sc_hs__a32oi_4	0.01070	0.01037	0.01032	0.01090	0.01053	1.54496

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.03374	0.10576
sky130_fd_sc_hs__a32oi_2	0.00000	0.06749	0.21153
sky130_fd_sc_hs__a32oi_4	0.00000	0.13497	0.42305

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)	0.12797	1.03309	10.77160
	A2->Y (FR)	0.14605	1.05078	10.78060
	A3->Y (FR)	0.16011	1.06231	10.72560
	B1->Y (FR)	0.09082	1.00241	10.99460
	B2->Y (FR)	0.10655	1.01826	10.99630
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.11499	0.86056	10.32470
	A2->Y (FR)	0.14751	0.91785	10.71790
	A3->Y (FR)	0.16144	0.92922	10.61710
	B1->Y (FR)	0.07864	0.85190	10.83190
	B2->Y (FR)	0.10498	0.88353	10.95980
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.13048	0.78713	10.30180
	A2->Y (FR)	0.15506	0.80779	10.25420
	A3->Y (FR)	0.17507	0.83080	10.25760
	B1->Y (FR)	0.10649	0.77348	10.46930
	B2->Y (FR)	0.13874	0.82194	10.77340

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.05113	0.50771	5.32900
	A2->Y (RF)	0.05731	0.48450	4.98401
	A3->Y (RF)	0.06040	0.44002	4.36583
	B1->Y (RF)	0.02682	0.40952	4.48570
	B2->Y (RF)	0.03000	0.37779	4.07452
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.05252	0.48004	5.75855
	A2->Y (RF)	0.06291	0.45890	5.35333
	A3->Y (RF)	0.06610	0.39042	4.38095
	B1->Y (RF)	0.02347	0.36371	4.66676
	B2->Y (RF)	0.02965	0.33345	4.16134
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.05416	0.42297	5.52522
	A2->Y (RF)	0.06344	0.39437	5.00431
	A3->Y (RF)	0.06674	0.32605	4.00668
	B1->Y (RF)	0.02429	0.30926	4.44214
	B2->Y (RF)	0.02958	0.26675	3.71511

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00039	0.00020	0.00227
	A1	0.00692	0.00673	0.00881
	A2	0.00083	0.00063	0.00270
	A2	0.00904	0.00883	0.01086
	A3	0.00138	0.00126	0.00333
	A3	0.01037	0.01026	0.01228
	B1	0.00025	0.00045	0.00616
	B1	0.00477	0.00497	0.01076
	B2	0.00067	0.00089	0.00662
	B2	0.00754	0.00750	0.01321
sky130_fd_sc_hs__a32oi_2	A1	-0.00067	-0.00094	0.00311
	A1	0.01441	0.01398	0.01788
	A2	0.00294	0.00245	0.00610
	A2	0.01808	0.01756	0.02129
	A3	0.00363	0.00340	0.00713
	A3	0.02062	0.02038	0.02418
	B1	-0.00097	-0.00028	0.01032
	B1	0.01143	0.01162	0.02203
	B2	0.00073	0.00120	0.01182
	B2	0.01490	0.01523	0.02542

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00115	-0.00185	0.00684
	A1	0.02877	0.02778	0.03597
	A2	0.00480	0.00377	0.01212
	A2	0.03511	0.03411	0.04243
	A3	0.00636	0.00585	0.01440
	A3	0.04050	0.03998	0.04850
	B1	-0.00182	0.00028	0.02100
	B1	0.02257	0.02404	0.04403
	B2	0.00117	0.00221	0.02360
	B2	0.02895	0.02976	0.05006

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00934	0.00926	0.01181
	A1	0.00292	0.00283	0.00508
	A2	0.01036	0.01026	0.01197
	A2	0.00291	0.00277	0.00453
	A3	0.01118	0.01106	0.01290
	A3	0.00288	0.00273	0.00456
	B1	0.00450	0.00459	0.00733
	B1	-0.00001	0.00007	0.00260
	B2	0.00643	0.00646	0.00859
	B2	-0.00002	-0.00004	0.00203

sky130_fd_sc_hs__a32oi_2	**A1**	0.01819	0.01801	0.02224
	A1	0.00562	0.00540	0.00963
	A2	0.02025	0.01990	0.02374
	A2	0.00562	0.00527	0.00848
	A3	0.02224	0.02198	0.02552
	A3	0.00560	0.00524	0.00884
	B1	0.00818	0.00838	0.01377
	B1	-0.00034	-0.00017	0.00478
	B2	0.01038	0.01034	0.01462
	B2	-0.00029	-0.00034	0.00365
sky130_fd_sc_hs__a32oi_4	**A1**	0.03558	0.03509	0.04453
	A1	0.01042	0.00979	0.01830
	A2	0.03948	0.03868	0.04650
	A2	0.01028	0.00948	0.01633
	A3	0.04346	0.04275	0.05063
	A3	0.01010	0.00932	0.01705
	B1	0.01661	0.01689	0.02767
	B1	-0.00073	-0.00053	0.00972
	B2	0.02093	0.02074	0.02969
	B2	-0.00049	-0.00072	0.00787

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)**	0.00162	0.00154	0.00152
	(A2 * A3 * B1 * B2 * !Y)	-0.00158	-0.00173	-0.00172
	(A2 * !A3 * B1 * B2 * !Y)	0.00141	0.00143	0.00142
	(A2 * !A3 * B1 * B2 * !Y)	-0.00176	-0.00177	-0.00176
	(A2 * !A3 * B1 * !B2 * Y)	0.00050	0.00050	0.00047
	(A2 * !A3 * B1 * !B2 * Y)	-0.00206	-0.00207	-0.00213
	(A2 * !A3 * !B1 * Y)	0.00050	0.00050	0.00047
	(A2 * !A3 * !B1 * Y)	-0.00206	-0.00207	-0.00213
	(!A2 * B1 * B2 * !Y)	0.00144	0.00145	0.00145
	(!A2 * B1 * B2 * !Y)	-0.00176	-0.00177	-0.00176
	(!A2 * B1 * !B2 * Y)	0.00049	0.00049	0.00047
	(!A2 * B1 * !B2 * Y)	-0.00211	-0.00212	-0.00214
	(!A2 * !B1 * Y)	0.00049	0.00049	0.00047
	(!A2 * !B1 * Y)	-0.00211	-0.00212	-0.00214
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00318	0.00304	0.00301
	(A2 * A3 * B1 * B2 * !Y)	-0.00313	-0.00344	-0.00344
	(A2 * !A3 * B1 * B2 * !Y)	0.00282	0.00283	0.00282
	(A2 * !A3 * B1 * B2 * !Y)	-0.00352	-0.00353	-0.00352
	(A2 * !A3 * B1 * !B2 * Y)	0.00105	0.00105	0.00095
	(A2 * !A3 * B1 * !B2 * Y)	-0.00404	-0.00407	-0.00423
	(A2 * !A3 * !B1 * Y)	0.00105	0.00105	0.00096
	(A2 * !A3 * !B1 * Y)	-0.00404	-0.00407	-0.00423
	(!A2 * B1 * B2 * !Y)	0.00287	0.00291	0.00288
	(!A2 * B1 * B2 * !Y)	-0.00350	-0.00354	-0.00351
	(!A2 * B1 * !B2 * Y)	0.00107	0.00107	0.00101
	(!A2 * B1 * !B2 * Y)	-0.00415	-0.00417	-0.00424
	(!A2 * !B1 * Y)	0.00108	0.00108	0.00102
	(!A2 * !B1 * Y)	-0.00415	-0.00417	-0.00424

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00644	0.00603	0.00594
	(A2 * A3 * B1 * B2 * !Y)	-0.00614	-0.00691	-0.00688
	(A2 * !A3 * B1 * B2 * !Y)	0.00554	0.00559	0.00555
	(A2 * !A3 * B1 * B2 * !Y)	-0.00704	-0.00710	-0.00705
	(A2 * !A3 * B1 * !B2 * Y)	0.00186	0.00188	0.00172
	(A2 * !A3 * B1 * !B2 * Y)	-0.00819	-0.00827	-0.00855
	(A2 * !A3 * !B1 * Y)	0.00187	0.00188	0.00172
	(A2 * !A3 * !B1 * Y)	-0.00819	-0.00827	-0.00855
	(!A2 * B1 * B2 * !Y)	0.00565	0.00571	0.00567
	(!A2 * B1 * B2 * !Y)	-0.00704	-0.00709	-0.00705
	(!A2 * B1 * !B2 * Y)	0.00190	0.00192	0.00183
	(!A2 * B1 * !B2 * Y)	-0.00840	-0.00849	-0.00859
	(!A2 * !B1 * Y)	0.00191	0.00193	0.00183
	(!A2 * !B1 * Y)	-0.00842	-0.00849	-0.00859

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)**	-0.00152	-0.00153	-0.00152
	(A2 * A3 * B1 * B2 * !Y)	0.00173	0.00174	0.00172
	(A2 * !A3 * B1 * B2 * !Y)	-0.00129	-0.00143	-0.00142
	(A2 * !A3 * B1 * B2 * !Y)	0.00177	0.00178	0.00177
	(A2 * !A3 * B1 * !B2 * Y)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * B1 * !B2 * Y)	0.00213	0.00214	0.00214
	(A2 * !A3 * !B1 * Y)	-0.00046	-0.00046	-0.00045
	(A2 * !A3 * !B1 * Y)	0.00213	0.00214	0.00214
	(!A2 * B1 * B2 * !Y)	-0.00141	-0.00145	-0.00145
	(!A2 * B1 * B2 * !Y)	0.00177	0.00177	0.00177
	(!A2 * B1 * !B2 * Y)	-0.00046	-0.00046	-0.00046
	(!A2 * B1 * !B2 * Y)	0.00214	0.00214	0.00214
	(!A2 * !B1 * Y)	-0.00046	-0.00046	-0.00046
	(!A2 * !B1 * Y)	0.00214	0.00214	0.00214
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00299	-0.00300	-0.00299
	(A2 * A3 * B1 * B2 * !Y)	0.00342	0.00344	0.00344
	(A2 * !A3 * B1 * B2 * !Y)	-0.00248	-0.00283	-0.00282
	(A2 * !A3 * B1 * B2 * !Y)	0.00352	0.00357	0.00353
	(A2 * !A3 * B1 * !B2 * Y)	-0.00096	-0.00095	-0.00095
	(A2 * !A3 * B1 * !B2 * Y)	0.00426	0.00427	0.00425
	(A2 * !A3 * !B1 * Y)	-0.00096	-0.00096	-0.00096
	(A2 * !A3 * !B1 * Y)	0.00426	0.00427	0.00425
	(!A2 * B1 * B2 * !Y)	-0.00276	-0.00291	-0.00288
	(!A2 * B1 * B2 * !Y)	0.00352	0.00356	0.00353
	(!A2 * B1 * !B2 * Y)	-0.00099	-0.00099	-0.00098
	(!A2 * B1 * !B2 * Y)	0.00426	0.00427	0.00425
	(!A2 * !B1 * Y)	-0.00099	-0.00099	-0.00099
	(!A2 * !B1 * Y)	0.00426	0.00427	0.00425

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00593	-0.00594	-0.00592
	(A2 * A3 * B1 * B2 * !Y)	0.00688	0.00691	0.00688
	(A2 * !A3 * B1 * B2 * !Y)	-0.00485	-0.00559	-0.00555
	(A2 * !A3 * B1 * B2 * !Y)	0.00704	0.00715	0.00708
	(A2 * !A3 * B1 * !B2 * Y)	-0.00171	-0.00172	-0.00172
	(A2 * !A3 * B1 * !B2 * Y)	0.00855	0.00863	0.00860
	(A2 * !A3 * !B1 * Y)	-0.00171	-0.00173	-0.00172
	(A2 * !A3 * !B1 * Y)	0.00855	0.00862	0.00860
	(!A2 * B1 * B2 * !Y)	-0.00549	-0.00571	-0.00567
	(!A2 * B1 * B2 * !Y)	0.00709	0.00712	0.00708
	(!A2 * B1 * !B2 * Y)	-0.00176	-0.00178	-0.00177
	(!A2 * B1 * !B2 * Y)	0.00856	0.00864	0.00861
	(!A2 * !B1 * Y)	-0.00177	-0.00179	-0.00178
	(!A2 * !B1 * Y)	0.00855	0.00863	0.00861

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)**	0.00166	0.00158	0.00156
	(A1 * A3 * B1 * B2 * !Y)	-0.00158	-0.00173	-0.00172
	(A1 * !A3 * B1 * B2 * !Y)	0.00150	0.00151	0.00150
	(A1 * !A3 * B1 * B2 * !Y)	-0.00177	-0.00177	-0.00176
	(A1 * !A3 * B1 * !B2 * Y)	0.00067	0.00067	0.00067
	(A1 * !A3 * B1 * !B2 * Y)	-0.00186	-0.00186	-0.00185
	(A1 * !A3 * !B1 * Y)	0.00067	0.00067	0.00066
	(A1 * !A3 * !B1 * Y)	-0.00186	-0.00186	-0.00185
	(!A1 * A3 * B1 * B2 * !Y)	0.00148	0.00150	0.00149
	(!A1 * A3 * B1 * B2 * !Y)	-0.00175	-0.00177	-0.00176
	(!A1 * A3 * B1 * !B2 * Y)	0.00140	0.00141	0.00140
	(!A1 * A3 * B1 * !B2 * Y)	-0.00185	-0.00186	-0.00186
	(!A1 * A3 * !B1 * Y)	0.00140	0.00141	0.00140
	(!A1 * A3 * !B1 * Y)	-0.00185	-0.00186	-0.00186
	(!A1 * !A3 * B1 * B2 * !Y)	0.00091	0.00092	0.00091
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00176	-0.00177	-0.00176
	(!A1 * !A3 * B1 * !B2 * Y)	0.00077	0.00077	0.00077
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00186	-0.00186	-0.00186
	(!A1 * !A3 * !B1 * Y)	0.00077	0.00077	0.00077
	(!A1 * !A3 * !B1 * Y)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00313	0.00293	0.00289
	(A1 * A3 * B1 * B2 * !Y)	-0.00318	-0.00357	-0.00356
	(A1 * !A3 * B1 * B2 * !Y)	0.00272	0.00273	0.00273
	(A1 * !A3 * B1 * B2 * !Y)	-0.00365	-0.00366	-0.00365
	(A1 * !A3 * B1 * !B2 * Y)	0.00122	0.00123	0.00125
	(A1 * !A3 * B1 * !B2 * Y)	-0.00369	-0.00371	-0.00369
	(A1 * !A3 * !B1 * Y)	0.00123	0.00124	0.00125
	(A1 * !A3 * !B1 * Y)	-0.00369	-0.00371	-0.00369
	(!A1 * A3 * B1 * B2 * !Y)	0.00279	0.00282	0.00278
	(!A1 * A3 * B1 * B2 * !Y)	-0.00364	-0.00367	-0.00365
	(!A1 * A3 * B1 * !B2 * Y)	0.00274	0.00275	0.00274
	(!A1 * A3 * B1 * !B2 * Y)	-0.00370	-0.00369	-0.00369
	(!A1 * A3 * !B1 * Y)	0.00274	0.00275	0.00274
	(!A1 * A3 * !B1 * Y)	-0.00370	-0.00370	-0.00369
	(!A1 * !A3 * B1 * B2 * !Y)	0.00166	0.00167	0.00166
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00366	-0.00369	-0.00366
	(!A1 * !A3 * B1 * !B2 * Y)	0.00147	0.00148	0.00147
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00372	-0.00373	-0.00372
	(!A1 * !A3 * !B1 * Y)	0.00148	0.00149	0.00148
	(!A1 * !A3 * !B1 * Y)	-0.00372	-0.00373	-0.00372

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00635	0.00588	0.00579
	(A1 * A3 * B1 * B2 * !Y)	-0.00627	-0.00707	-0.00706
	(A1 * !A3 * B1 * B2 * !Y)	0.00541	0.00548	0.00543
	(A1 * !A3 * B1 * B2 * !Y)	-0.00723	-0.00728	-0.00725
	(A1 * !A3 * B1 * !B2 * Y)	0.00235	0.00237	0.00238
	(A1 * !A3 * B1 * !B2 * Y)	-0.00731	-0.00735	-0.00730
	(A1 * !A3 * !B1 * Y)	0.00234	0.00237	0.00238
	(A1 * !A3 * !B1 * Y)	-0.00730	-0.00735	-0.00730
	(!A1 * A3 * B1 * B2 * !Y)	0.00556	0.00559	0.00558
	(!A1 * A3 * B1 * B2 * !Y)	-0.00724	-0.00725	-0.00724
	(!A1 * A3 * B1 * !B2 * Y)	0.00551	0.00554	0.00551
	(!A1 * A3 * B1 * !B2 * Y)	-0.00732	-0.00733	-0.00731
	(!A1 * A3 * !B1 * Y)	0.00551	0.00554	0.00551
	(!A1 * A3 * !B1 * Y)	-0.00732	-0.00733	-0.00731
	(!A1 * !A3 * B1 * B2 * !Y)	0.00313	0.00315	0.00312
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00724	-0.00730	-0.00724
	(!A1 * !A3 * B1 * !B2 * Y)	0.00279	0.00279	0.00278
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00739	-0.00740	-0.00737
	(!A1 * !A3 * !B1 * Y)	0.00279	0.00280	0.00278
	(!A1 * !A3 * !B1 * Y)	-0.00739	-0.00740	-0.00737

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)**	-0.00156	-0.00157	-0.00156
	(A1 * A3 * B1 * B2 * !Y)	0.00171	0.00174	0.00172
	(A1 * !A3 * B1 * B2 * !Y)	-0.00146	-0.00151	-0.00150
	(A1 * !A3 * B1 * B2 * !Y)	0.00177	0.00179	0.00177
	(A1 * !A3 * B1 * !B2 * Y)	-0.00063	-0.00065	-0.00065
	(A1 * !A3 * B1 * !B2 * Y)	0.00189	0.00192	0.00187
	(A1 * !A3 * !B1 * Y)	-0.00063	-0.00065	-0.00065
	(A1 * !A3 * !B1 * Y)	0.00189	0.00192	0.00187
	(!A1 * A3 * B1 * B2 * !Y)	-0.00145	-0.00150	-0.00149
	(!A1 * A3 * B1 * B2 * !Y)	0.00176	0.00178	0.00177
	(!A1 * A3 * B1 * !B2 * Y)	-0.00129	-0.00140	-0.00140
	(!A1 * A3 * B1 * !B2 * Y)	0.00194	0.00187	0.00186
	(!A1 * A3 * !B1 * Y)	-0.00129	-0.00140	-0.00140
	(!A1 * A3 * !B1 * Y)	0.00194	0.00187	0.00186
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00091	-0.00092	-0.00091
	(!A1 * !A3 * B1 * B2 * !Y)	0.00177	0.00179	0.00177
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * B1 * !B2 * Y)	0.00195	0.00197	0.00188
	(!A1 * !A3 * !B1 * Y)	-0.00077	-0.00077	-0.00077
	(!A1 * !A3 * !B1 * Y)	0.00195	0.00197	0.00188

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00287	-0.00290	-0.00287
	(A1 * A3 * B1 * B2 * !Y)	0.00354	0.00362	0.00356
	(A1 * !A3 * B1 * B2 * !Y)	-0.00264	-0.00273	-0.00273
	(A1 * !A3 * B1 * B2 * !Y)	0.00368	0.00370	0.00366
	(A1 * !A3 * B1 * !B2 * Y)	-0.00116	-0.00118	-0.00120
	(A1 * !A3 * B1 * !B2 * Y)	0.00381	0.00387	0.00374
	(A1 * !A3 * !B1 * Y)	-0.00116	-0.00118	-0.00120
	(A1 * !A3 * !B1 * Y)	0.00381	0.00387	0.00374
	(!A1 * A3 * B1 * B2 * !Y)	-0.00264	-0.00279	-0.00278
	(!A1 * A3 * B1 * B2 * !Y)	0.00364	0.00369	0.00366
	(!A1 * A3 * B1 * !B2 * Y)	-0.00245	-0.00275	-0.00274
	(!A1 * A3 * B1 * !B2 * Y)	0.00386	0.00373	0.00370
	(!A1 * A3 * !B1 * Y)	-0.00246	-0.00275	-0.00274
	(!A1 * A3 * !B1 * Y)	0.00386	0.00373	0.00370
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00166	-0.00167	-0.00166
	(!A1 * !A3 * B1 * B2 * !Y)	0.00369	0.00372	0.00368
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00147	-0.00148	-0.00147
	(!A1 * !A3 * B1 * !B2 * Y)	0.00391	0.00394	0.00377
	(!A1 * !A3 * !B1 * Y)	-0.00148	-0.00149	-0.00148
	(!A1 * !A3 * !B1 * Y)	0.00391	0.00394	0.00377

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00577	-0.00578	-0.00576
	(A1 * A3 * B1 * B2 * !Y)	0.00704	0.00707	0.00706
	(A1 * !A3 * B1 * B2 * !Y)	-0.00528	-0.00546	-0.00543
	(A1 * !A3 * B1 * B2 * !Y)	0.00729	0.00728	0.00727
	(A1 * !A3 * B1 * !B2 * Y)	-0.00224	-0.00227	-0.00229
	(A1 * !A3 * B1 * !B2 * Y)	0.00755	0.00764	0.00739
	(A1 * !A3 * !B1 * Y)	-0.00225	-0.00227	-0.00229
	(A1 * !A3 * !B1 * Y)	0.00755	0.00764	0.00739
	(!A1 * A3 * B1 * B2 * !Y)	-0.00532	-0.00559	-0.00558
	(!A1 * A3 * B1 * B2 * !Y)	0.00724	0.00733	0.00727
	(!A1 * A3 * B1 * !B2 * Y)	-0.00489	-0.00554	-0.00551
	(!A1 * A3 * B1 * !B2 * Y)	0.00773	0.00739	0.00733
	(!A1 * A3 * !B1 * Y)	-0.00490	-0.00554	-0.00551
	(!A1 * A3 * !B1 * Y)	0.00773	0.00739	0.00733
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00313	-0.00315	-0.00312
	(!A1 * !A3 * B1 * B2 * !Y)	0.00724	0.00735	0.00727
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00279	-0.00279	-0.00278
	(!A1 * !A3 * B1 * !B2 * Y)	0.00768	0.00781	0.00747
	(!A1 * !A3 * !B1 * Y)	-0.00279	-0.00280	-0.00278
	(!A1 * !A3 * !B1 * Y)	0.00768	0.00781	0.00747

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)**	0.00155	0.00148	0.00147
	(A1 * A2 * B1 * B2 * !Y)	-0.00160	-0.00175	-0.00174
	(A1 * !A2 * B1 * !B2 * Y)	0.00140	0.00142	0.00141
	(A1 * !A2 * B1 * !B2 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !B1 * Y)	0.00140	0.00142	0.00141
	(A1 * !A2 * !B1 * Y)	-0.00178	-0.00179	-0.00178
	(!A2 * B1 * B2 * !Y)	0.00140	0.00142	0.00140
	(!A2 * B1 * B2 * !Y)	-0.00178	-0.00179	-0.00178
	(!A1 * A2 * B1 * B2 * !Y)	0.00139	0.00139	0.00138
	(!A1 * A2 * B1 * B2 * !Y)	-0.00178	-0.00178	-0.00178
	(!A1 * A2 * B1 * !B2 * Y)	0.00138	0.00138	0.00138
	(!A1 * A2 * B1 * !B2 * Y)	-0.00178	-0.00178	-0.00178
	(!A1 * A2 * !B1 * Y)	0.00138	0.00138	0.00138
	(!A1 * A2 * !B1 * Y)	-0.00178	-0.00178	-0.00178
	(!A1 * !A2 * B1 * !B2 * Y)	0.00140	0.00142	0.00140
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00178	-0.00179	-0.00178
	(!A1 * !A2 * !B1 * Y)	0.00140	0.00142	0.00140
	(!A1 * !A2 * !B1 * Y)	-0.00178	-0.00179	-0.00178

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00319	0.00300	0.00295
	(A1 * A2 * B1 * B2 * !Y)	-0.00318	-0.00354	-0.00352
	(A1 * !A2 * B1 * !B2 * Y)	0.00280	0.00283	0.00280
	(A1 * !A2 * B1 * !B2 * Y)	-0.00360	-0.00363	-0.00361
	(A1 * !A2 * !B1 * Y)	0.00280	0.00283	0.00280
	(A1 * !A2 * !B1 * Y)	-0.00360	-0.00363	-0.00361
	(!A2 * B1 * B2 * !Y)	0.00280	0.00282	0.00280
	(!A2 * B1 * B2 * !Y)	-0.00360	-0.00362	-0.00361
	(!A1 * A2 * B1 * B2 * !Y)	0.00281	0.00282	0.00279
	(!A1 * A2 * B1 * B2 * !Y)	-0.00361	-0.00362	-0.00360
	(!A1 * A2 * B1 * !B2 * Y)	0.00277	0.00282	0.00279
	(!A1 * A2 * B1 * !B2 * Y)	-0.00359	-0.00363	-0.00361
	(!A1 * A2 * !B1 * Y)	0.00277	0.00282	0.00279
	(!A1 * A2 * !B1 * Y)	-0.00359	-0.00363	-0.00361
	(!A1 * !A2 * B1 * !B2 * Y)	0.00280	0.00282	0.00280
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00360	-0.00362	-0.00361
	(!A1 * !A2 * !B1 * Y)	0.00280	0.00282	0.00280
	(!A1 * !A2 * !B1 * Y)	-0.00360	-0.00362	-0.00361

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00621	0.00583	0.00573
	(A1 * A2 * B1 * B2 * !Y)	-0.00632	-0.00710	-0.00710
	(A1 * !A2 * B1 * !B2 * Y)	0.00542	0.00548	0.00543
	(A1 * !A2 * B1 * !B2 * Y)	-0.00728	-0.00732	-0.00729
	(A1 * !A2 * !B1 * Y)	0.00542	0.00548	0.00543
	(A1 * !A2 * !B1 * Y)	-0.00728	-0.00732	-0.00729
	(!A2 * B1 * B2 * !Y)	0.00542	0.00547	0.00544
	(!A2 * B1 * B2 * !Y)	-0.00727	-0.00730	-0.00728
	(!A1 * A2 * B1 * B2 * !Y)	0.00534	0.00537	0.00535
	(!A1 * A2 * B1 * B2 * !Y)	-0.00727	-0.00729	-0.00728
	(!A1 * A2 * B1 * !B2 * Y)	0.00532	0.00535	0.00534
	(!A1 * A2 * B1 * !B2 * Y)	-0.00727	-0.00730	-0.00729
	(!A1 * A2 * !B1 * Y)	0.00532	0.00536	0.00534
	(!A1 * A2 * !B1 * Y)	-0.00727	-0.00730	-0.00729
	(!A1 * !A2 * B1 * !B2 * Y)	0.00541	0.00546	0.00543
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00728	-0.00731	-0.00729
	(!A1 * !A2 * !B1 * Y)	0.00543	0.00546	0.00543
	(!A1 * !A2 * !B1 * Y)	-0.00730	-0.00731	-0.00729

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)**	-0.00146	-0.00147	-0.00146
	(A1 * A2 * B1 * B2 * !Y)	0.00174	0.00175	0.00174
	(A1 * !A2 * B1 * !B2 * Y)	-0.00136	-0.00141	-0.00141
	(A1 * !A2 * B1 * !B2 * Y)	0.00179	0.00180	0.00179
	(A1 * !A2 * !B1 * Y)	-0.00136	-0.00141	-0.00141
	(A1 * !A2 * !B1 * Y)	0.00179	0.00180	0.00179
	(!A2 * B1 * B2 * !Y)	-0.00137	-0.00141	-0.00140
	(!A2 * B1 * B2 * !Y)	0.00179	0.00179	0.00179
	(!A1 * A2 * B1 * B2 * !Y)	-0.00129	-0.00139	-0.00138
	(!A1 * A2 * B1 * B2 * !Y)	0.00178	0.00181	0.00179
	(!A1 * A2 * B1 * !B2 * Y)	-0.00129	-0.00138	-0.00138
	(!A1 * A2 * B1 * !B2 * Y)	0.00178	0.00180	0.00179
	(!A1 * A2 * !B1 * Y)	-0.00129	-0.00138	-0.00138
	(!A1 * A2 * !B1 * Y)	0.00178	0.00180	0.00179
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00137	-0.00141	-0.00140
	(!A1 * !A2 * B1 * !B2 * Y)	0.00179	0.00180	0.00179
	(!A1 * !A2 * !B1 * Y)	-0.00137	-0.00141	-0.00140
	(!A1 * !A2 * !B1 * Y)	0.00179	0.00180	0.00179

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00294	-0.00296	-0.00294
	(A1 * A2 * B1 * B2 * !Y)	0.00350	0.00355	0.00352
	(A1 * !A2 * B1 * !B2 * Y)	-0.00270	-0.00283	-0.00280
	(A1 * !A2 * B1 * !B2 * Y)	0.00360	0.00365	0.00362
	(A1 * !A2 * !B1 * Y)	-0.00270	-0.00283	-0.00280
	(A1 * !A2 * !B1 * Y)	0.00360	0.00365	0.00362
	(!A2 * B1 * B2 * !Y)	-0.00272	-0.00282	-0.00280
	(!A2 * B1 * B2 * !Y)	0.00360	0.00367	0.00362
	(!A1 * A2 * B1 * B2 * !Y)	-0.00262	-0.00279	-0.00279
	(!A1 * A2 * B1 * B2 * !Y)	0.00362	0.00365	0.00362
	(!A1 * A2 * B1 * !B2 * Y)	-0.00261	-0.00278	-0.00279
	(!A1 * A2 * B1 * !B2 * Y)	0.00363	0.00363	0.00362
	(!A1 * A2 * !B1 * Y)	-0.00262	-0.00278	-0.00279
	(!A1 * A2 * !B1 * Y)	0.00363	0.00363	0.00362
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00271	-0.00282	-0.00280
	(!A1 * !A2 * B1 * !B2 * Y)	0.00360	0.00365	0.00362
	(!A1 * !A2 * !B1 * Y)	-0.00271	-0.00282	-0.00280
	(!A1 * !A2 * !B1 * Y)	0.00360	0.00365	0.00362

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00570	-0.00571	-0.00570
	(A1 * A2 * B1 * B2 * !Y)	0.00707	0.00710	0.00710
	(A1 * !A2 * B1 * !B2 * Y)	-0.00518	-0.00544	-0.00543
	(A1 * !A2 * B1 * !B2 * Y)	0.00732	0.00737	0.00731
	(A1 * !A2 * !B1 * Y)	-0.00518	-0.00544	-0.00543
	(A1 * !A2 * !B1 * Y)	0.00732	0.00737	0.00731
	(!A2 * B1 * B2 * !Y)	-0.00525	-0.00542	-0.00544
	(!A2 * B1 * B2 * !Y)	0.00731	0.00734	0.00731
	(!A1 * A2 * B1 * B2 * !Y)	-0.00498	-0.00537	-0.00535
	(!A1 * A2 * B1 * B2 * !Y)	0.00730	0.00737	0.00731
	(!A1 * A2 * B1 * !B2 * Y)	-0.00496	-0.00535	-0.00534
	(!A1 * A2 * B1 * !B2 * Y)	0.00732	0.00739	0.00731
	(!A1 * A2 * !B1 * Y)	-0.00496	-0.00536	-0.00534
	(!A1 * A2 * !B1 * Y)	0.00732	0.00739	0.00731
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00521	-0.00545	-0.00543
	(!A1 * !A2 * B1 * !B2 * Y)	0.00732	0.00738	0.00731
	(!A1 * !A2 * !B1 * Y)	-0.00521	-0.00545	-0.00543
	(!A1 * !A2 * !B1 * Y)	0.00731	0.00738	0.00731

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)**	0.00171	0.00174	0.00171
	(A1 * A2 * A3 * B2 * !Y)	-0.00085	-0.00087	-0.00085
	(A1 * A2 * A3 * !B2 * !Y)	0.00164	0.00166	0.00165
	(A1 * A2 * A3 * !B2 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * !A3 * !B2 * Y)	0.00048	0.00049	0.00047
	(A1 * A2 * !A3 * !B2 * Y)	-0.00216	-0.00217	-0.00219
	(A1 * !A2 * !B2 * Y)	0.00048	0.00049	0.00047
	(A1 * !A2 * !B2 * Y)	-0.00216	-0.00217	-0.00219
	(!A1 * !B2 * Y)	0.00048	0.00049	0.00047
	(!A1 * !B2 * Y)	-0.00216	-0.00217	-0.00219
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00326	0.00330	0.00325
	(A1 * A2 * A3 * B2 * !Y)	-0.00172	-0.00174	-0.00170
	(A1 * A2 * A3 * !B2 * !Y)	0.00312	0.00311	0.00312
	(A1 * A2 * A3 * !B2 * !Y)	-0.00170	-0.00170	-0.00170
	(A1 * A2 * !A3 * !B2 * Y)	0.00101	0.00102	0.00096
	(A1 * A2 * !A3 * !B2 * Y)	-0.00416	-0.00419	-0.00425
	(A1 * !A2 * !B2 * Y)	0.00101	0.00102	0.00096
	(A1 * !A2 * !B2 * Y)	-0.00416	-0.00419	-0.00425
	(!A1 * !B2 * Y)	0.00102	0.00102	0.00096
	(!A1 * !B2 * Y)	-0.00416	-0.00419	-0.00425
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00654	0.00657	0.00656
	(A1 * A2 * A3 * B2 * !Y)	-0.00345	-0.00347	-0.00345
	(A1 * A2 * A3 * !B2 * !Y)	0.00628	0.00630	0.00628
	(A1 * A2 * A3 * !B2 * !Y)	-0.00345	-0.00345	-0.00345
	(A1 * A2 * !A3 * !B2 * Y)	0.00193	0.00193	0.00183
	(A1 * A2 * !A3 * !B2 * Y)	-0.00847	-0.00853	-0.00864
	(A1 * !A2 * !B2 * Y)	0.00193	0.00193	0.00183
	(A1 * !A2 * !B2 * Y)	-0.00847	-0.00853	-0.00864
	(!A1 * !B2 * Y)	0.00194	0.00194	0.00184
	(!A1 * !B2 * Y)	-0.00848	-0.00853	-0.00864

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)	-0.00152	-0.00154	-0.00169
	(A1 * A2 * A3 * B2 * !Y)	0.00101	0.00102	0.00089
	(A1 * A2 * A3 * !B2 * !Y)	-0.00161	-0.00166	-0.00165
	(A1 * A2 * A3 * !B2 * !Y)	0.00085	0.00085	0.00085
	(A1 * A2 * !A3 * !B2 * Y)	-0.00046	-0.00046	-0.00046
	(A1 * A2 * !A3 * !B2 * Y)	0.00219	0.00219	0.00219
	(A1 * !A2 * !B2 * Y)	-0.00046	-0.00046	-0.00046
	(A1 * !A2 * !B2 * Y)	0.00219	0.00219	0.00219
	(!A1 * !B2 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !B2 * Y)	0.00219	0.00219	0.00219
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00287	-0.00288	-0.00320
	(A1 * A2 * A3 * B2 * !Y)	0.00202	0.00201	0.00177
	(A1 * A2 * A3 * !B2 * !Y)	-0.00300	-0.00311	-0.00312
	(A1 * A2 * A3 * !B2 * !Y)	0.00170	0.00171	0.00170
	(A1 * A2 * !A3 * !B2 * Y)	-0.00094	-0.00093	-0.00093
	(A1 * A2 * !A3 * !B2 * Y)	0.00427	0.00426	0.00426
	(A1 * !A2 * !B2 * Y)	-0.00094	-0.00093	-0.00093
	(A1 * !A2 * !B2 * Y)	0.00427	0.00426	0.00426
	(!A1 * !B2 * Y)	-0.00094	-0.00094	-0.00093
	(!A1 * !B2 * Y)	0.00427	0.00426	0.00426

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00586	-0.00591	-0.00648
	(A1 * A2 * A3 * B2 * !Y)	0.00402	0.00402	0.00358
	(A1 * A2 * A3 * !B2 * !Y)	-0.00606	-0.00630	-0.00628
	(A1 * A2 * A3 * !B2 * !Y)	0.00345	0.00345	0.00345
	(A1 * A2 * !A3 * !B2 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * A2 * !A3 * !B2 * Y)	0.00862	0.00868	0.00865
	(A1 * !A2 * !B2 * Y)	-0.00178	-0.00179	-0.00178
	(A1 * !A2 * !B2 * Y)	0.00862	0.00868	0.00865
	(!A1 * !B2 * Y)	-0.00178	-0.00180	-0.00179
	(!A1 * !B2 * Y)	0.00862	0.00868	0.00865

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)**	0.00165	0.00167	0.00164
	(A1 * A2 * A3 * B1 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * A3 * !B1 * !Y)	0.00157	0.00159	0.00157
	(A1 * A2 * A3 * !B1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * A2 * !A3 * !B1 * Y)	0.00140	0.00141	0.00140
	(A1 * A2 * !A3 * !B1 * Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !B1 * Y)	0.00140	0.00141	0.00140
	(A1 * !A2 * !B1 * Y)	-0.00184	-0.00184	-0.00184
	(!A1 * !B1 * Y)	0.00140	0.00141	0.00140
	(!A1 * !B1 * Y)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00323	0.00330	0.00324
	(A1 * A2 * A3 * B1 * !Y)	-0.00174	-0.00178	-0.00175
	(A1 * A2 * A3 * !B1 * !Y)	0.00313	0.00317	0.00312
	(A1 * A2 * A3 * !B1 * !Y)	-0.00174	-0.00174	-0.00174
	(A1 * A2 * !A3 * !B1 * Y)	0.00279	0.00280	0.00279
	(A1 * A2 * !A3 * !B1 * Y)	-0.00362	-0.00362	-0.00361
	(A1 * !A2 * !B1 * Y)	0.00279	0.00280	0.00279
	(A1 * !A2 * !B1 * Y)	-0.00362	-0.00362	-0.00361
	(!A1 * !B1 * Y)	0.00279	0.00280	0.00279
	(!A1 * !B1 * Y)	-0.00362	-0.00362	-0.00361
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00640	0.00642	0.00643
	(A1 * A2 * A3 * B1 * !Y)	-0.00347	-0.00347	-0.00347
	(A1 * A2 * A3 * !B1 * !Y)	0.00614	0.00619	0.00616
	(A1 * A2 * A3 * !B1 * !Y)	-0.00345	-0.00348	-0.00347
	(A1 * A2 * !A3 * !B1 * Y)	0.00544	0.00553	0.00548
	(A1 * A2 * !A3 * !B1 * Y)	-0.00720	-0.00726	-0.00722
	(A1 * !A2 * !B1 * Y)	0.00544	0.00553	0.00548
	(A1 * !A2 * !B1 * Y)	-0.00720	-0.00726	-0.00722
	(!A1 * !B1 * Y)	0.00545	0.00553	0.00548
	(!A1 * !B1 * Y)	-0.00720	-0.00726	-0.00722

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)**	-0.00145	-0.00147	-0.00162
	(A1 * A2 * A3 * B1 * !Y)	0.00106	0.00106	0.00093
	(A1 * A2 * A3 * !B1 * !Y)	-0.00155	-0.00159	-0.00157
	(A1 * A2 * A3 * !B1 * !Y)	0.00090	0.00090	0.00089
	(A1 * A2 * !A3 * !B1 * Y)	-0.00133	-0.00140	-0.00140
	(A1 * A2 * !A3 * !B1 * Y)	0.00191	0.00186	0.00185
	(A1 * !A2 * !B1 * Y)	-0.00133	-0.00140	-0.00140
	(A1 * !A2 * !B1 * Y)	0.00191	0.00186	0.00185
	(!A1 * !B1 * Y)	-0.00133	-0.00140	-0.00140
	(!A1 * !B1 * Y)	0.00191	0.00186	0.00185
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00286	-0.00290	-0.00319
	(A1 * A2 * A3 * B1 * !Y)	0.00206	0.00207	0.00182
	(A1 * A2 * A3 * !B1 * !Y)	-0.00301	-0.00311	-0.00312
	(A1 * A2 * A3 * !B1 * !Y)	0.00174	0.00174	0.00174
	(A1 * A2 * !A3 * !B1 * Y)	-0.00260	-0.00280	-0.00279
	(A1 * A2 * !A3 * !B1 * Y)	0.00371	0.00365	0.00362
	(A1 * !A2 * !B1 * Y)	-0.00260	-0.00280	-0.00279
	(A1 * !A2 * !B1 * Y)	0.00371	0.00365	0.00362
	(!A1 * !B1 * Y)	-0.00260	-0.00280	-0.00279
	(!A1 * !B1 * Y)	0.00371	0.00365	0.00362
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00572	-0.00579	-0.00634
	(A1 * A2 * A3 * B1 * !Y)	0.00405	0.00406	0.00360
	(A1 * A2 * A3 * !B1 * !Y)	-0.00595	-0.00619	-0.00616
	(A1 * A2 * A3 * !B1 * !Y)	0.00346	0.00350	0.00347
	(A1 * A2 * !A3 * !B1 * Y)	-0.00507	-0.00553	-0.00548
	(A1 * A2 * !A3 * !B1 * Y)	0.00747	0.00730	0.00724
	(A1 * !A2 * !B1 * Y)	-0.00507	-0.00553	-0.00548
	(A1 * !A2 * !B1 * Y)	0.00747	0.00730	0.00724
	(!A1 * !B1 * Y)	-0.00508	-0.00553	-0.00548
	(!A1 * !B1 * Y)	0.00747	0.00730	0.00724

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00256	0.00253	0.00261	0.00255	0.00237	1.06093
sky130_fd_sc_hs__a32o_2	0.00274	0.00269	0.00277	0.00269	0.00255	1.82835
sky130_fd_sc_hs__a32o_4	0.00469	0.00527	0.00473	0.00489	0.00557	3.98137

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	0.11535	0.27552
sky130_fd_sc_hs__a32o_2	0.00000	0.15081	0.28171
sky130_fd_sc_hs__a32o_4	0.00000	0.30436	0.56342

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)	0.11047	0.68500	6.59479
	A2->X (RR)	0.11724	0.68771	6.61069
	A3->X (RR)	0.12161	0.67132	6.51836
	B1->X (RR)	0.08134	0.62709	6.45124
	B2->X (RR)	0.08450	0.62250	6.43141
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.11219	0.60872	6.39972
	A2->X (RR)	0.11922	0.60752	6.39963
	A3->X (RR)	0.12374	0.58894	6.28712
	B1->X (RR)	0.08239	0.55036	6.21018
	B2->X (RR)	0.08633	0.54285	6.18584
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.12131	0.54717	6.67987
	A2->X (RR)	0.13073	0.55172	6.70024
	A3->X (RR)	0.13566	0.53134	6.60440
	B1->X (RR)	0.08144	0.47288	6.50802
	B2->X (RR)	0.08579	0.46794	6.49564

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.18216	0.65822	4.78016
	A2->X (FF)	0.20251	0.68936	4.86232
	A3->X (FF)	0.21219	0.70321	4.92761
	B1->X (FF)	0.15832	0.64708	4.84764
	B2->X (FF)	0.17326	0.67575	4.90599
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.22047	0.67428	4.61065
	A2->X (FF)	0.24342	0.70736	4.71426
	A3->X (FF)	0.26130	0.73266	4.79448
	B1->X (FF)	0.19990	0.67562	4.68767
	B2->X (FF)	0.22144	0.71108	4.77524
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.20656	0.63164	4.89481
	A2->X (FF)	0.21948	0.65534	4.94895
	A3->X (FF)	0.24661	0.69243	5.05624
	B1->X (FF)	0.19535	0.64557	4.96773
	B2->X (FF)	0.20822	0.66604	5.01791

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.01162	0.01163	0.02443
	A1	0.00573	0.00574	0.01861
	A2	0.01240	0.01215	0.02284
	A2	0.00573	0.00547	0.01621
	A3	0.01332	0.01293	0.02143
	A3	0.00571	0.00532	0.01391
	B1	0.00737	0.00800	0.02857
	B1	0.00326	0.00390	0.02463
	B2	0.00900	0.00937	0.02606
	B2	0.00325	0.00365	0.02192
sky130_fd_sc_hs__a32o_2	A1	0.01438	0.01450	0.02708
	A1	0.00830	0.00844	0.02140
	A2	0.01517	0.01515	0.02559
	A2	0.00828	0.00827	0.01925
	A3	0.01625	0.01612	0.02346
	A3	0.00828	0.00817	0.01600
	B1	0.01107	0.01184	0.02861
	B1	0.00580	0.00667	0.02600
	B2	0.01206	0.01264	0.02746
	B2	0.00579	0.00640	0.02353

sky130_fd_sc_hs__a32o_4	**A1**	0.02718	0.02811	0.05450
	A1	0.01640	0.01719	0.04411
	A2	0.02928	0.02967	0.05167
	A2	0.01632	0.01681	0.03895
	A3	0.03095	0.03138	0.05285
	A3	0.01630	0.01702	0.03876
	B1	0.02209	0.02344	0.05970
	B1	0.01087	0.01255	0.05457
	B2	0.02466	0.02557	0.05845
	B2	0.01079	0.01186	0.05061

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00351	0.00351	0.01494
	A1	0.00947	0.00946	0.01996
	A2	0.00402	0.00408	0.01508
	A2	0.01071	0.01076	0.02098
	A3	0.00470	0.00450	0.01486
	A3	0.01238	0.01216	0.02163
	B1	0.00342	0.00464	0.02624
	B1	0.00752	0.00873	0.03034
	B2	0.00367	0.00479	0.02581
	B2	0.00986	0.01081	0.03022

sky130_fd_sc_hs__a32o_2	**A1**	0.00556	0.00577	0.01646
	A1	0.01285	0.01285	0.02291
	A2	0.00708	0.00710	0.01718
	A2	0.01434	0.01441	0.02437
	A3	0.00735	0.00681	0.01616
	A3	0.01559	0.01513	0.02437
	B1	0.00536	0.00695	0.02886
	B1	0.01128	0.01246	0.03185
	B2	0.00587	0.00722	0.02770
	B2	0.01274	0.01370	0.03272
sky130_fd_sc_hs__a32o_4	**A1**	0.01088	0.01138	0.03587
	A1	0.02395	0.02399	0.04632
	A2	0.01185	0.01236	0.03657
	A2	0.02526	0.02569	0.04794
	A3	0.01327	0.01371	0.03711
	A3	0.02991	0.02991	0.05066
	B1	0.01050	0.01317	0.05467
	B1	0.02108	0.02351	0.06122
	B2	0.01053	0.01339	0.05502
	B2	0.02356	0.02598	0.06409

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)**	0.00146	0.00134	0.00131
	(A2 * A3 * B1 * B2 * X)	-0.00137	-0.00156	-0.00156
	(A2 * !A3 * B1 * B2 * X)	0.00123	0.00124	0.00123
	(A2 * !A3 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(A2 * !A3 * B1 * !B2 * !X)	0.00043	0.00043	0.00040
	(A2 * !A3 * B1 * !B2 * !X)	-0.00187	-0.00187	-0.00193
	(A2 * !A3 * !B1 * !X)	0.00043	0.00043	0.00040
	(A2 * !A3 * !B1 * !X)	-0.00187	-0.00187	-0.00193
	(!A2 * B1 * B2 * X)	0.00126	0.00126	0.00126
	(!A2 * B1 * B2 * X)	-0.00160	-0.00160	-0.00159
	(!A2 * B1 * !B2 * !X)	0.00044	0.00044	0.00042
	(!A2 * B1 * !B2 * !X)	-0.00190	-0.00191	-0.00193
	(!A2 * !B1 * !X)	0.00044	0.00044	0.00042
	(!A2 * !B1 * !X)	-0.00190	-0.00191	-0.00193
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00164	0.00152	0.00150
	(A2 * A3 * B1 * B2 * X)	-0.00137	-0.00156	-0.00156
	(A2 * !A3 * B1 * B2 * X)	0.00139	0.00140	0.00139
	(A2 * !A3 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(A2 * !A3 * B1 * !B2 * !X)	0.00048	0.00048	0.00044
	(A2 * !A3 * B1 * !B2 * !X)	-0.00189	-0.00190	-0.00197
	(A2 * !A3 * !B1 * !X)	0.00048	0.00048	0.00044
	(A2 * !A3 * !B1 * !X)	-0.00189	-0.00190	-0.00197
	(!A2 * B1 * B2 * X)	0.00144	0.00144	0.00144
	(!A2 * B1 * B2 * X)	-0.00159	-0.00159	-0.00159
	(!A2 * B1 * !B2 * !X)	0.00049	0.00049	0.00047
	(!A2 * B1 * !B2 * !X)	-0.00194	-0.00194	-0.00197
	(!A2 * !B1 * !X)	0.00049	0.00049	0.00047
	(!A2 * !B1 * !X)	-0.00194	-0.00194	-0.00197

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00260	0.00242	0.00238
	(A2 * A3 * B1 * B2 * X)	-0.00276	-0.00312	-0.00312
	(A2 * !A3 * B1 * B2 * X)	0.00223	0.00225	0.00223
	(A2 * !A3 * B1 * B2 * X)	-0.00318	-0.00320	-0.00318
	(A2 * !A3 * B1 * !B2 * !X)	0.00082	0.00082	0.00074
	(A2 * !A3 * B1 * !B2 * !X)	-0.00353	-0.00354	-0.00369
	(A2 * !A3 * !B1 * !X)	0.00082	0.00082	0.00074
	(A2 * !A3 * !B1 * !X)	-0.00353	-0.00354	-0.00369
	(!A2 * B1 * B2 * X)	0.00227	0.00230	0.00228
	(!A2 * B1 * B2 * X)	-0.00317	-0.00321	-0.00318
	(!A2 * B1 * !B2 * !X)	0.00077	0.00078	0.00075
	(!A2 * B1 * !B2 * !X)	-0.00362	-0.00366	-0.00371
	(!A2 * !B1 * !X)	0.00078	0.00078	0.00075
	(!A2 * !B1 * !X)	-0.00365	-0.00366	-0.00371

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)**	-0.00131	-0.00131	-0.00130
	(A2 * A3 * B1 * B2 * X)	0.00156	0.00157	0.00156
	(A2 * !A3 * B1 * B2 * X)	-0.00113	-0.00124	-0.00123
	(A2 * !A3 * B1 * B2 * X)	0.00160	0.00163	0.00160
	(A2 * !A3 * B1 * !B2 * !X)	-0.00040	-0.00041	-0.00040
	(A2 * !A3 * B1 * !B2 * !X)	0.00193	0.00197	0.00194
	(A2 * !A3 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(A2 * !A3 * !B1 * !X)	0.00193	0.00197	0.00194
	(!A2 * B1 * B2 * X)	-0.00122	-0.00126	-0.00126
	(!A2 * B1 * B2 * X)	0.00161	0.00161	0.00160
	(!A2 * B1 * !B2 * !X)	-0.00041	-0.00042	-0.00041
	(!A2 * B1 * !B2 * !X)	0.00193	0.00197	0.00194
	(!A2 * !B1 * !X)	-0.00041	-0.00042	-0.00041
	(!A2 * !B1 * !X)	0.00193	0.00197	0.00194
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00149	-0.00150	-0.00149
	(A2 * A3 * B1 * B2 * X)	0.00157	0.00157	0.00156
	(A2 * !A3 * B1 * B2 * X)	-0.00127	-0.00140	-0.00139
	(A2 * !A3 * B1 * B2 * X)	0.00159	0.00161	0.00160
	(A2 * !A3 * B1 * !B2 * !X)	-0.00044	-0.00045	-0.00044
	(A2 * !A3 * B1 * !B2 * !X)	0.00197	0.00201	0.00198
	(A2 * !A3 * !B1 * !X)	-0.00044	-0.00045	-0.00044
	(A2 * !A3 * !B1 * !X)	0.00197	0.00201	0.00198
	(!A2 * B1 * B2 * X)	-0.00139	-0.00144	-0.00144
	(!A2 * B1 * B2 * X)	0.00161	0.00161	0.00160
	(!A2 * B1 * !B2 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * B1 * !B2 * !X)	0.00197	0.00201	0.00198
	(!A2 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * !X)	0.00197	0.00201	0.00198

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00236	-0.00238	-0.00236
	(A2 * A3 * B1 * B2 * X)	0.00310	0.00314	0.00312
	(A2 * !A3 * B1 * B2 * X)	-0.00198	-0.00225	-0.00223
	(A2 * !A3 * B1 * B2 * X)	0.00319	0.00323	0.00320
	(A2 * !A3 * B1 * !B2 * !X)	-0.00070	-0.00071	-0.00069
	(A2 * !A3 * B1 * !B2 * !X)	0.00373	0.00377	0.00372
	(A2 * !A3 * !B1 * !X)	-0.00070	-0.00071	-0.00069
	(A2 * !A3 * !B1 * !X)	0.00373	0.00377	0.00372
	(!A2 * B1 * B2 * X)	-0.00218	-0.00229	-0.00228
	(!A2 * B1 * B2 * X)	0.00319	0.00323	0.00320
	(!A2 * B1 * !B2 * !X)	-0.00073	-0.00074	-0.00072
	(!A2 * B1 * !B2 * !X)	0.00373	0.00378	0.00372
	(!A2 * !B1 * !X)	-0.00072	-0.00074	-0.00072
	(!A2 * !B1 * !X)	0.00369	0.00378	0.00372

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)**	0.00142	0.00131	0.00129
	(A1 * A3 * B1 * B2 * X)	-0.00136	-0.00156	-0.00156
	(A1 * !A3 * B1 * B2 * X)	0.00123	0.00123	0.00123
	(A1 * !A3 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(A1 * !A3 * B1 * !B2 * !X)	0.00050	0.00050	0.00050
	(A1 * !A3 * B1 * !B2 * !X)	-0.00171	-0.00171	-0.00170
	(A1 * !A3 * !B1 * !X)	0.00050	0.00050	0.00050
	(A1 * !A3 * !B1 * !X)	-0.00171	-0.00171	-0.00170
	(!A1 * A3 * B1 * B2 * X)	0.00123	0.00124	0.00123
	(!A1 * A3 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * A3 * B1 * !B2 * !X)	0.00113	0.00114	0.00113
	(!A1 * A3 * B1 * !B2 * !X)	-0.00170	-0.00170	-0.00170
	(!A1 * A3 * !B1 * !X)	0.00113	0.00114	0.00113
	(!A1 * A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A3 * B1 * B2 * X)	0.00075	0.00075	0.00075
	(!A1 * !A3 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * !A3 * B1 * !B2 * !X)	0.00058	0.00059	0.00058
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00170	-0.00172	-0.00171
	(!A1 * !A3 * !B1 * !X)	0.00058	0.00059	0.00058
	(!A1 * !A3 * !B1 * !X)	-0.00171	-0.00172	-0.00171

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00161	0.00149	0.00147
	(A1 * A3 * B1 * B2 * X)	-0.00137	-0.00156	-0.00156
	(A1 * !A3 * B1 * B2 * X)	0.00139	0.00140	0.00140
	(A1 * !A3 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(A1 * !A3 * B1 * !B2 * !X)	0.00057	0.00057	0.00057
	(A1 * !A3 * B1 * !B2 * !X)	-0.00170	-0.00171	-0.00169
	(A1 * !A3 * !B1 * !X)	0.00057	0.00057	0.00057
	(A1 * !A3 * !B1 * !X)	-0.00170	-0.00171	-0.00169
	(!A1 * A3 * B1 * B2 * X)	0.00141	0.00141	0.00141
	(!A1 * A3 * B1 * B2 * X)	-0.00159	-0.00159	-0.00159
	(!A1 * A3 * B1 * !B2 * !X)	0.00130	0.00130	0.00130
	(!A1 * A3 * B1 * !B2 * !X)	-0.00170	-0.00169	-0.00170
	(!A1 * A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * A3 * !B1 * !X)	-0.00170	-0.00170	-0.00170
	(!A1 * !A3 * B1 * B2 * X)	0.00084	0.00085	0.00084
	(!A1 * !A3 * B1 * B2 * X)	-0.00159	-0.00160	-0.00159
	(!A1 * !A3 * B1 * !B2 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00171	-0.00171	-0.00171
	(!A1 * !A3 * !B1 * !X)	0.00066	0.00067	0.00067
	(!A1 * !A3 * !B1 * !X)	-0.00170	-0.00171	-0.00171

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00289	0.00258	0.00253
	(A1 * A3 * B1 * B2 * X)	-0.00290	-0.00338	-0.00339
	(A1 * !A3 * B1 * B2 * X)	0.00243	0.00245	0.00243
	(A1 * !A3 * B1 * B2 * X)	-0.00349	-0.00350	-0.00348
	(A1 * !A3 * B1 * !B2 * !X)	0.00106	0.00105	0.00104
	(A1 * !A3 * B1 * !B2 * !X)	-0.00365	-0.00365	-0.00363
	(A1 * !A3 * !B1 * !X)	0.00106	0.00105	0.00104
	(A1 * !A3 * !B1 * !X)	-0.00365	-0.00365	-0.00363
	(!A1 * A3 * B1 * B2 * X)	0.00242	0.00243	0.00243
	(!A1 * A3 * B1 * B2 * X)	-0.00347	-0.00348	-0.00348
	(!A1 * A3 * B1 * !B2 * !X)	0.00226	0.00230	0.00227
	(!A1 * A3 * B1 * !B2 * !X)	-0.00363	-0.00365	-0.00363
	(!A1 * A3 * !B1 * !X)	0.00226	0.00230	0.00227
	(!A1 * A3 * !B1 * !X)	-0.00363	-0.00365	-0.00363
	(!A1 * !A3 * B1 * B2 * X)	0.00154	0.00155	0.00153
	(!A1 * !A3 * B1 * B2 * X)	-0.00349	-0.00350	-0.00348
	(!A1 * !A3 * B1 * !B2 * !X)	0.00127	0.00127	0.00126
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00367	-0.00368	-0.00366
	(!A1 * !A3 * !B1 * !X)	0.00127	0.00127	0.00126
	(!A1 * !A3 * !B1 * !X)	-0.00367	-0.00368	-0.00366

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)**	-0.00127	-0.00128	-0.00128
	(A1 * A3 * B1 * B2 * X)	0.00155	0.00157	0.00156
	(A1 * !A3 * B1 * B2 * X)	-0.00120	-0.00123	-0.00123
	(A1 * !A3 * B1 * B2 * X)	0.00161	0.00162	0.00160
	(A1 * !A3 * B1 * !B2 * !X)	-0.00047	-0.00048	-0.00048
	(A1 * !A3 * B1 * !B2 * !X)	0.00174	0.00177	0.00172
	(A1 * !A3 * !B1 * !X)	-0.00047	-0.00048	-0.00048
	(A1 * !A3 * !B1 * !X)	0.00174	0.00177	0.00172
	(!A1 * A3 * B1 * B2 * X)	-0.00119	-0.00124	-0.00123
	(!A1 * A3 * B1 * B2 * X)	0.00159	0.00161	0.00160
	(!A1 * A3 * B1 * !B2 * !X)	-0.00103	-0.00113	-0.00113
	(!A1 * A3 * B1 * !B2 * !X)	0.00177	0.00172	0.00171
	(!A1 * A3 * !B1 * !X)	-0.00103	-0.00113	-0.00113
	(!A1 * A3 * !B1 * !X)	0.00177	0.00172	0.00171
	(!A1 * !A3 * B1 * B2 * X)	-0.00075	-0.00075	-0.00075
	(!A1 * !A3 * B1 * B2 * X)	0.00160	0.00162	0.00160
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00058	-0.00059	-0.00058
	(!A1 * !A3 * B1 * !B2 * !X)	0.00178	0.00180	0.00173
	(!A1 * !A3 * !B1 * !X)	-0.00058	-0.00059	-0.00058
	(!A1 * !A3 * !B1 * !X)	0.00178	0.00180	0.00173

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00146	-0.00147	-0.00146
	(A1 * A3 * B1 * B2 * X)	0.00155	0.00157	0.00156
	(A1 * !A3 * B1 * B2 * X)	-0.00135	-0.00140	-0.00140
	(A1 * !A3 * B1 * B2 * X)	0.00159	0.00162	0.00160
	(A1 * !A3 * B1 * !B2 * !X)	-0.00053	-0.00054	-0.00055
	(A1 * !A3 * B1 * !B2 * !X)	0.00174	0.00177	0.00171
	(A1 * !A3 * !B1 * !X)	-0.00053	-0.00054	-0.00055
	(A1 * !A3 * !B1 * !X)	0.00174	0.00177	0.00171
	(!A1 * A3 * B1 * B2 * X)	-0.00136	-0.00141	-0.00141
	(!A1 * A3 * B1 * B2 * X)	0.00160	0.00161	0.00160
	(!A1 * A3 * B1 * !B2 * !X)	-0.00120	-0.00130	-0.00130
	(!A1 * A3 * B1 * !B2 * !X)	0.00177	0.00172	0.00171
	(!A1 * A3 * !B1 * !X)	-0.00120	-0.00131	-0.00130
	(!A1 * A3 * !B1 * !X)	0.00177	0.00172	0.00171
	(!A1 * !A3 * B1 * B2 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A3 * B1 * B2 * X)	0.00160	0.00162	0.00160
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * B1 * !B2 * !X)	0.00179	0.00181	0.00173
	(!A1 * !A3 * !B1 * !X)	-0.00066	-0.00067	-0.00067
	(!A1 * !A3 * !B1 * !X)	0.00179	0.00181	0.00173

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00251	-0.00252	-0.00250
	(A1 * A3 * B1 * B2 * X)	0.00337	0.00341	0.00339
	(A1 * !A3 * B1 * B2 * X)	-0.00231	-0.00245	-0.00243
	(A1 * !A3 * B1 * B2 * X)	0.00351	0.00352	0.00350
	(A1 * !A3 * B1 * !B2 * !X)	-0.00098	-0.00099	-0.00099
	(A1 * !A3 * B1 * !B2 * !X)	0.00375	0.00378	0.00367
	(A1 * !A3 * !B1 * !X)	-0.00098	-0.00099	-0.00099
	(A1 * !A3 * !B1 * !X)	0.00375	0.00378	0.00367
	(!A1 * A3 * B1 * B2 * X)	-0.00233	-0.00243	-0.00243
	(!A1 * A3 * B1 * B2 * X)	0.00349	0.00352	0.00349
	(!A1 * A3 * B1 * !B2 * !X)	-0.00204	-0.00227	-0.00227
	(!A1 * A3 * B1 * !B2 * !X)	0.00381	0.00368	0.00365
	(!A1 * A3 * !B1 * !X)	-0.00204	-0.00227	-0.00227
	(!A1 * A3 * !B1 * !X)	0.00381	0.00368	0.00365
	(!A1 * !A3 * B1 * B2 * X)	-0.00154	-0.00155	-0.00153
	(!A1 * !A3 * B1 * B2 * X)	0.00351	0.00353	0.00350
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00127	-0.00127	-0.00126
	(!A1 * !A3 * B1 * !B2 * !X)	0.00387	0.00386	0.00371
	(!A1 * !A3 * !B1 * !X)	-0.00127	-0.00127	-0.00126
	(!A1 * !A3 * !B1 * !X)	0.00387	0.00386	0.00371

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)**	0.00156	0.00146	0.00145
	(A1 * A2 * B1 * B2 * X)	-0.00137	-0.00154	-0.00154
	(A1 * !A2 * B1 * !B2 * !X)	0.00114	0.00115	0.00114
	(A1 * !A2 * B1 * !B2 * !X)	-0.00181	-0.00182	-0.00182
	(A1 * !A2 * !B1 * !X)	0.00114	0.00115	0.00114
	(A1 * !A2 * !B1 * !X)	-0.00181	-0.00182	-0.00182
	(!A2 * B1 * B2 * X)	0.00138	0.00140	0.00139
	(!A2 * B1 * B2 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * A2 * B1 * B2 * X)	0.00137	0.00138	0.00138
	(!A1 * A2 * B1 * B2 * X)	-0.00157	-0.00157	-0.00157
	(!A1 * A2 * B1 * !B2 * !X)	0.00112	0.00113	0.00112
	(!A1 * A2 * B1 * !B2 * !X)	-0.00182	-0.00182	-0.00182
	(!A1 * A2 * !B1 * !X)	0.00112	0.00113	0.00112
	(!A1 * A2 * !B1 * !X)	-0.00182	-0.00182	-0.00182
	(!A1 * !A2 * B1 * !B2 * !X)	0.00113	0.00114	0.00114
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00182	-0.00182	-0.00182
	(!A1 * !A2 * !B1 * !X)	0.00113	0.00114	0.00114
	(!A1 * !A2 * !B1 * !X)	-0.00182	-0.00182	-0.00182

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00176	0.00165	0.00163
	(A1 * A2 * B1 * B2 * X)	-0.00136	-0.00154	-0.00155
	(A1 * !A2 * B1 * !B2 * !X)	0.00132	0.00133	0.00132
	(A1 * !A2 * B1 * !B2 * !X)	-0.00181	-0.00182	-0.00182
	(A1 * !A2 * !B1 * !X)	0.00132	0.00133	0.00132
	(A1 * !A2 * !B1 * !X)	-0.00181	-0.00182	-0.00182
	(!A2 * B1 * B2 * X)	0.00155	0.00157	0.00156
	(!A2 * B1 * B2 * X)	-0.00157	-0.00158	-0.00158
	(!A1 * A2 * B1 * B2 * X)	0.00154	0.00154	0.00153
	(!A1 * A2 * B1 * B2 * X)	-0.00158	-0.00158	-0.00158
	(!A1 * A2 * B1 * !B2 * !X)	0.00132	0.00132	0.00131
	(!A1 * A2 * B1 * !B2 * !X)	-0.00182	-0.00182	-0.00182
	(!A1 * A2 * !B1 * !X)	0.00131	0.00132	0.00131
	(!A1 * A2 * !B1 * !X)	-0.00182	-0.00183	-0.00182
	(!A1 * !A2 * B1 * !B2 * !X)	0.00132	0.00132	0.00132
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00181	-0.00182	-0.00182
	(!A1 * !A2 * !B1 * !X)	0.00132	0.00133	0.00132
	(!A1 * !A2 * !B1 * !X)	-0.00181	-0.00182	-0.00182

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00282	0.00256	0.00251
	(A1 * A2 * B1 * B2 * X)	-0.00284	-0.00327	-0.00328
	(A1 * !A2 * B1 * !B2 * !X)	0.00238	0.00239	0.00238
	(A1 * !A2 * B1 * !B2 * !X)	-0.00336	-0.00337	-0.00336
	(A1 * !A2 * !B1 * !X)	0.00238	0.00239	0.00238
	(A1 * !A2 * !B1 * !X)	-0.00336	-0.00337	-0.00336
	(!A2 * B1 * B2 * X)	0.00240	0.00241	0.00239
	(!A2 * B1 * B2 * X)	-0.00336	-0.00337	-0.00335
	(!A1 * A2 * B1 * B2 * X)	0.00232	0.00234	0.00232
	(!A1 * A2 * B1 * B2 * X)	-0.00335	-0.00337	-0.00335
	(!A1 * A2 * B1 * !B2 * !X)	0.00232	0.00232	0.00231
	(!A1 * A2 * B1 * !B2 * !X)	-0.00337	-0.00337	-0.00336
	(!A1 * A2 * !B1 * !X)	0.00232	0.00232	0.00231
	(!A1 * A2 * !B1 * !X)	-0.00337	-0.00337	-0.00336
	(!A1 * !A2 * B1 * !B2 * !X)	0.00240	0.00240	0.00239
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00336	-0.00337	-0.00336
	(!A1 * !A2 * !B1 * !X)	0.00239	0.00240	0.00239
	(!A1 * !A2 * !B1 * !X)	-0.00336	-0.00337	-0.00336

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)**	-0.00143	-0.00144	-0.00144
	(A1 * A2 * B1 * B2 * X)	0.00153	0.00155	0.00154
	(A1 * !A2 * B1 * !B2 * !X)	-0.00109	-0.00115	-0.00114
	(A1 * !A2 * B1 * !B2 * !X)	0.00181	0.00184	0.00183
	(A1 * !A2 * !B1 * !X)	-0.00109	-0.00115	-0.00114
	(A1 * !A2 * !B1 * !X)	0.00181	0.00184	0.00183
	(!A2 * B1 * B2 * X)	-0.00135	-0.00139	-0.00139
	(!A2 * B1 * B2 * X)	0.00157	0.00159	0.00158
	(!A1 * A2 * B1 * B2 * X)	-0.00129	-0.00138	-0.00138
	(!A1 * A2 * B1 * B2 * X)	0.00157	0.00160	0.00158
	(!A1 * A2 * B1 * !B2 * !X)	-0.00104	-0.00112	-0.00112
	(!A1 * A2 * B1 * !B2 * !X)	0.00182	0.00182	0.00183
	(!A1 * A2 * !B1 * !X)	-0.00104	-0.00113	-0.00112
	(!A1 * A2 * !B1 * !X)	0.00182	0.00184	0.00182
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00111	-0.00114	-0.00114
	(!A1 * !A2 * B1 * !B2 * !X)	0.00183	0.00184	0.00182
	(!A1 * !A2 * !B1 * !X)	-0.00111	-0.00114	-0.00114
	(!A1 * !A2 * !B1 * !X)	0.00183	0.00184	0.00182

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00163	-0.00163	-0.00162
	(A1 * A2 * B1 * B2 * X)	0.00155	0.00155	0.00155
	(A1 * !A2 * B1 * !B2 * !X)	-0.00127	-0.00133	-0.00132
	(A1 * !A2 * B1 * !B2 * !X)	0.00182	0.00184	0.00183
	(A1 * !A2 * !B1 * !X)	-0.00127	-0.00133	-0.00132
	(A1 * !A2 * !B1 * !X)	0.00182	0.00184	0.00183
	(!A2 * B1 * B2 * X)	-0.00152	-0.00156	-0.00156
	(!A2 * B1 * B2 * X)	0.00158	0.00159	0.00159
	(!A1 * A2 * B1 * B2 * X)	-0.00145	-0.00154	-0.00153
	(!A1 * A2 * B1 * B2 * X)	0.00158	0.00160	0.00159
	(!A1 * A2 * B1 * !B2 * !X)	-0.00121	-0.00132	-0.00131
	(!A1 * A2 * B1 * !B2 * !X)	0.00182	0.00184	0.00182
	(!A1 * A2 * !B1 * !X)	-0.00121	-0.00132	-0.00131
	(!A1 * A2 * !B1 * !X)	0.00182	0.00184	0.00182
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00127	-0.00132	-0.00132
	(!A1 * !A2 * B1 * !B2 * !X)	0.00182	0.00184	0.00183
	(!A1 * !A2 * !B1 * !X)	-0.00127	-0.00133	-0.00132
	(!A1 * !A2 * !B1 * !X)	0.00182	0.00184	0.00183

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00248	-0.00250	-0.00248
	(A1 * A2 * B1 * B2 * X)	0.00325	0.00329	0.00328
	(A1 * !A2 * B1 * !B2 * !X)	-0.00226	-0.00239	-0.00238
	(A1 * !A2 * B1 * !B2 * !X)	0.00336	0.00340	0.00337
	(A1 * !A2 * !B1 * !X)	-0.00226	-0.00239	-0.00238
	(A1 * !A2 * !B1 * !X)	0.00336	0.00340	0.00337
	(!A2 * B1 * B2 * X)	-0.00230	-0.00239	-0.00239
	(!A2 * B1 * B2 * X)	0.00336	0.00338	0.00337
	(!A1 * A2 * B1 * B2 * X)	-0.00215	-0.00234	-0.00232
	(!A1 * A2 * B1 * B2 * X)	0.00337	0.00341	0.00337
	(!A1 * A2 * B1 * !B2 * !X)	-0.00214	-0.00232	-0.00231
	(!A1 * A2 * B1 * !B2 * !X)	0.00338	0.00341	0.00337
	(!A1 * A2 * !B1 * !X)	-0.00214	-0.00232	-0.00231
	(!A1 * A2 * !B1 * !X)	0.00338	0.00341	0.00337
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00228	-0.00239	-0.00239
	(!A1 * !A2 * B1 * !B2 * !X)	0.00336	0.00340	0.00337
	(!A1 * !A2 * !B1 * !X)	-0.00228	-0.00239	-0.00239
	(!A1 * !A2 * !B1 * !X)	0.00336	0.00340	0.00337

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)**	0.00142	0.00144	0.00142
	(A1 * A2 * A3 * B2 * X)	-0.00078	-0.00080	-0.00078
	(A1 * A2 * A3 * !B2 * X)	0.00137	0.00137	0.00137
	(A1 * A2 * A3 * !B2 * X)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * !A3 * !B2 * !X)	0.00042	0.00042	0.00040
	(A1 * A2 * !A3 * !B2 * !X)	-0.00188	-0.00189	-0.00191
	(A1 * !A2 * !B2 * !X)	0.00042	0.00042	0.00040
	(A1 * !A2 * !B2 * !X)	-0.00188	-0.00189	-0.00191
	(!A1 * !B2 * !X)	0.00042	0.00042	0.00040
	(!A1 * !B2 * !X)	-0.00188	-0.00189	-0.00191
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00158	0.00160	0.00158
	(A1 * A2 * A3 * B2 * X)	-0.00080	-0.00081	-0.00079
	(A1 * A2 * A3 * !B2 * X)	0.00152	0.00153	0.00152
	(A1 * A2 * A3 * !B2 * X)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * !A3 * !B2 * !X)	0.00051	0.00052	0.00049
	(A1 * A2 * !A3 * !B2 * !X)	-0.00187	-0.00188	-0.00191
	(A1 * !A2 * !B2 * !X)	0.00051	0.00052	0.00049
	(A1 * !A2 * !B2 * !X)	-0.00187	-0.00188	-0.00191
	(!A1 * !B2 * !X)	0.00051	0.00052	0.00049
	(!A1 * !B2 * !X)	-0.00187	-0.00188	-0.00191
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00283	0.00288	0.00284
	(A1 * A2 * A3 * B2 * X)	-0.00159	-0.00161	-0.00158
	(A1 * A2 * A3 * !B2 * X)	0.00270	0.00271	0.00271
	(A1 * A2 * A3 * !B2 * X)	-0.00157	-0.00158	-0.00158
	(A1 * A2 * !A3 * !B2 * !X)	0.00077	0.00077	0.00074
	(A1 * A2 * !A3 * !B2 * !X)	-0.00381	-0.00382	-0.00386
	(A1 * !A2 * !B2 * !X)	0.00077	0.00077	0.00074
	(A1 * !A2 * !B2 * !X)	-0.00381	-0.00382	-0.00386
	(!A1 * !B2 * !X)	0.00077	0.00077	0.00074
	(!A1 * !B2 * !X)	-0.00381	-0.00382	-0.00386

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)	-0.00126	-0.00127	-0.00140
	(A1 * A2 * A3 * B2 * X)	0.00092	0.00092	0.00081
	(A1 * A2 * A3 * !B2 * X)	-0.00133	-0.00137	-0.00137
	(A1 * A2 * A3 * !B2 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !A3 * !B2 * !X)	-0.00039	-0.00039	-0.00039
	(A1 * A2 * !A3 * !B2 * !X)	0.00191	0.00191	0.00191
	(A1 * !A2 * !B2 * !X)	-0.00039	-0.00039	-0.00039
	(A1 * !A2 * !B2 * !X)	0.00191	0.00190	0.00191
	(!A1 * !B2 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !B2 * !X)	0.00191	0.00190	0.00191
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00142	-0.00143	-0.00156
	(A1 * A2 * A3 * B2 * X)	0.00093	0.00093	0.00082
	(A1 * A2 * A3 * !B2 * X)	-0.00148	-0.00153	-0.00152
	(A1 * A2 * A3 * !B2 * X)	0.00080	0.00080	0.00079
	(A1 * A2 * !A3 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(A1 * A2 * !A3 * !B2 * !X)	0.00191	0.00194	0.00191
	(A1 * !A2 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(A1 * !A2 * !B2 * !X)	0.00191	0.00194	0.00191
	(!A1 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(!A1 * !B2 * !X)	0.00191	0.00194	0.00191

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00248	-0.00252	-0.00279
	(A1 * A2 * A3 * B2 * X)	0.00186	0.00187	0.00164
	(A1 * A2 * A3 * !B2 * X)	-0.00262	-0.00271	-0.00271
	(A1 * A2 * A3 * !B2 * X)	0.00157	0.00159	0.00158
	(A1 * A2 * !A3 * !B2 * !X)	-0.00073	-0.00074	-0.00072
	(A1 * A2 * !A3 * !B2 * !X)	0.00387	0.00391	0.00387
	(A1 * !A2 * !B2 * !X)	-0.00073	-0.00074	-0.00072
	(A1 * !A2 * !B2 * !X)	0.00387	0.00391	0.00387
	(!A1 * !B2 * !X)	-0.00073	-0.00074	-0.00072
	(!A1 * !B2 * !X)	0.00387	0.00391	0.00387

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)**	0.00140	0.00141	0.00139
	(A1 * A2 * A3 * B1 * X)	-0.00083	-0.00084	-0.00082
	(A1 * A2 * A3 * !B1 * X)	0.00133	0.00135	0.00133
	(A1 * A2 * A3 * !B1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * !A3 * !B1 * !X)	0.00122	0.00124	0.00122
	(A1 * A2 * !A3 * !B1 * !X)	-0.00161	-0.00163	-0.00161
	(A1 * !A2 * !B1 * !X)	0.00122	0.00124	0.00122
	(A1 * !A2 * !B1 * !X)	-0.00161	-0.00163	-0.00161
	(!A1 * !B1 * !X)	0.00122	0.00124	0.00122
	(!A1 * !B1 * !X)	-0.00161	-0.00163	-0.00162

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00160	0.00162	0.00160
	(A1 * A2 * A3 * B1 * X)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * A3 * !B1 * X)	0.00155	0.00156	0.00155
	(A1 * A2 * A3 * !B1 * X)	-0.00083	-0.00084	-0.00083
	(A1 * A2 * !A3 * !B1 * !X)	0.00143	0.00145	0.00143
	(A1 * A2 * !A3 * !B1 * !X)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !B1 * !X)	0.00143	0.00145	0.00143
	(A1 * !A2 * !B1 * !X)	-0.00162	-0.00163	-0.00162
	(!A1 * !B1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !B1 * !X)	-0.00163	-0.00163	-0.00162
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00359	0.00362	0.00360
	(A1 * A2 * A3 * B1 * X)	-0.00165	-0.00166	-0.00165
	(A1 * A2 * A3 * !B1 * X)	0.00346	0.00348	0.00347
	(A1 * A2 * A3 * !B1 * X)	-0.00164	-0.00165	-0.00165
	(A1 * A2 * !A3 * !B1 * !X)	0.00305	0.00305	0.00304
	(A1 * A2 * !A3 * !B1 * !X)	-0.00343	-0.00344	-0.00343
	(A1 * !A2 * !B1 * !X)	0.00305	0.00306	0.00305
	(A1 * !A2 * !B1 * !X)	-0.00343	-0.00344	-0.00343
	(!A1 * !B1 * !X)	0.00305	0.00305	0.00305
	(!A1 * !B1 * !X)	-0.00343	-0.00343	-0.00343

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)**	-0.00122	-0.00124	-0.00137
	(A1 * A2 * A3 * B1 * X)	0.00096	0.00096	0.00085
	(A1 * A2 * A3 * !B1 * X)	-0.00131	-0.00134	-0.00133
	(A1 * A2 * A3 * !B1 * X)	0.00083	0.00083	0.00082
	(A1 * A2 * !A3 * !B1 * !X)	-0.00115	-0.00123	-0.00122
	(A1 * A2 * !A3 * !B1 * !X)	0.00168	0.00164	0.00162
	(A1 * !A2 * !B1 * !X)	-0.00115	-0.00123	-0.00122
	(A1 * !A2 * !B1 * !X)	0.00168	0.00164	0.00162
	(!A1 * !B1 * !X)	-0.00115	-0.00123	-0.00122
	(!A1 * !B1 * !X)	0.00168	0.00164	0.00162
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00144	-0.00145	-0.00158
	(A1 * A2 * A3 * B1 * X)	0.00097	0.00097	0.00087
	(A1 * A2 * A3 * !B1 * X)	-0.00151	-0.00154	-0.00155
	(A1 * A2 * A3 * !B1 * X)	0.00084	0.00084	0.00084
	(A1 * A2 * !A3 * !B1 * !X)	-0.00137	-0.00144	-0.00143
	(A1 * A2 * !A3 * !B1 * !X)	0.00168	0.00163	0.00163
	(A1 * !A2 * !B1 * !X)	-0.00137	-0.00144	-0.00143
	(A1 * !A2 * !B1 * !X)	0.00168	0.00163	0.00163
	(!A1 * !B1 * !X)	-0.00137	-0.00144	-0.00144
	(!A1 * !B1 * !X)	0.00168	0.00163	0.00163
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00326	-0.00328	-0.00356
	(A1 * A2 * A3 * B1 * X)	0.00194	0.00193	0.00171
	(A1 * A2 * A3 * !B1 * X)	-0.00341	-0.00348	-0.00347
	(A1 * A2 * A3 * !B1 * X)	0.00166	0.00166	0.00165
	(A1 * A2 * !A3 * !B1 * !X)	-0.00287	-0.00305	-0.00304
	(A1 * A2 * !A3 * !B1 * !X)	0.00359	0.00347	0.00345
	(A1 * !A2 * !B1 * !X)	-0.00287	-0.00306	-0.00305
	(A1 * !A2 * !B1 * !X)	0.00359	0.00347	0.00345
	(!A1 * !B1 * !X)	-0.00287	-0.00305	-0.00305
	(!A1 * !B1 * !X)	0.00359	0.00347	0.00345

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00283	0.00286	0.00281	0.00284	0.00288	0.46729
sky130_fd_sc_hs__a41oi_2	0.00547	0.00533	0.00523	0.00522	0.00421	0.90657
sky130_fd_sc_hs__a41oi_4	0.01067	0.01032	0.01043	0.01033	0.00831	1.60199

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.03123	0.08119
sky130_fd_sc_hs__a41oi_2	0.00000	0.05956	0.16237
sky130_fd_sc_hs__a41oi_4	0.00000	0.11911	0.32474

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)	0.10840	1.01051	10.53080
	A2->Y (FR)	0.13379	1.05104	10.70940
	A3->Y (FR)	0.14730	1.04636	10.49570
	A4->Y (FR)	0.15156	1.01401	10.10650
	B1->Y (FR)	0.09309	1.02152	10.97790
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.09012	0.86695	10.72570
	A2->Y (FR)	0.11163	0.87037	10.45420
	A3->Y (FR)	0.13020	0.89704	10.53020
	A4->Y (FR)	0.14940	0.92289	10.58700
	B1->Y (FR)	0.10527	0.88654	10.81090
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.08342	0.73367	10.18790
	A2->Y (FR)	0.10941	0.74603	9.98829
	A3->Y (FR)	0.13292	0.78192	10.18620
	A4->Y (FR)	0.15572	0.82115	10.40900
	B1->Y (FR)	0.11307	0.80578	10.86130

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.05012	0.54830	5.78310
	A2->Y (RF)	0.06016	0.53615	5.48713
	A3->Y (RF)	0.06631	0.50298	4.96196
	A4->Y (RF)	0.07040	0.47144	4.46333
	B1->Y (RF)	0.01959	0.31714	3.40717
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.04629	0.53372	6.57136
	A2->Y (RF)	0.06025	0.52179	6.24515
	A3->Y (RF)	0.06737	0.46888	5.42635
	A4->Y (RF)	0.07276	0.44331	4.93805
	B1->Y (RF)	0.02220	0.41208	5.31648
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.04464	0.46867	6.51425
	A2->Y (RF)	0.06101	0.45576	6.11568
	A3->Y (RF)	0.06929	0.40873	5.32743
	A4->Y (RF)	0.07344	0.37165	4.68869
	B1->Y (RF)	0.02101	0.34236	5.01464

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00033	0.00016	0.00207
	A1	0.00623	0.00609	0.00803
	A2	0.00105	0.00084	0.00274
	A2	0.00780	0.00760	0.00954
	A3	0.00164	0.00144	0.00339
	A3	0.00923	0.00904	0.01102
	A4	0.00199	0.00182	0.00376
	A4	0.01051	0.01035	0.01230
	B1	-0.00001	0.00033	0.00678
	B1	0.00771	0.00792	0.01417
sky130_fd_sc_hs__a41oi_2	A1	-0.00069	-0.00083	0.00264
	A1	0.01009	0.00960	0.01352
	A2	0.00111	0.00068	0.00425
	A2	0.01380	0.01336	0.01704
	A3	0.00216	0.00178	0.00532
	A3	0.01655	0.01616	0.01979
	A4	0.00349	0.00314	0.00672
	A4	0.01980	0.01946	0.02309
	B1	-0.00013	0.00041	0.00785
	B1	0.01313	0.01321	0.02048

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00199	-0.00223	0.00604
	A1	0.01948	0.01896	0.02757
	A2	0.00209	0.00114	0.00948
	A2	0.02727	0.02631	0.03471
	A3	0.00418	0.00325	0.01154
	A3	0.03319	0.03232	0.04061
	A4	0.00626	0.00562	0.01380
	A4	0.03894	0.03827	0.04636
	B1	-0.00065	0.00074	0.01732
	B1	0.02607	0.02695	0.04204

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00787	0.00787	0.00977
	A1	0.00207	0.00204	0.00396
	A2	0.00876	0.00861	0.01033
	A2	0.00206	0.00189	0.00344
	A3	0.00964	0.00946	0.01143
	A3	0.00204	0.00186	0.00345
	A4	0.01067	0.01051	0.01224
	A4	0.00206	0.00185	0.00353
	B1	0.00619	0.00631	0.00920
	B1	-0.00029	-0.00022	0.00273

sky130_fd_sc_hs__a41oi_2	**A1**	0.01431	0.01403	0.01762
	A1	0.00376	0.00343	0.00710
	A2	0.01631	0.01588	0.01924
	A2	0.00370	0.00329	0.00612
	A3	0.01813	0.01778	0.02069
	A3	0.00369	0.00324	0.00628
	A4	0.02022	0.01978	0.02326
	A4	0.00365	0.00321	0.00633
	B1	0.00924	0.00947	0.01356
	B1	-0.00142	-0.00131	0.00235
sky130_fd_sc_hs__a41oi_4	**A1**	0.02772	0.02722	0.03513
	A1	0.00673	0.00613	0.01415
	A2	0.03167	0.03078	0.03865
	A2	0.00662	0.00577	0.01210
	A3	0.03575	0.03490	0.04143
	A3	0.00654	0.00561	0.01231
	A4	0.03965	0.03886	0.04620
	A4	0.00649	0.00557	0.01285
	B1	0.01863	0.01908	0.02768
	B1	-0.00291	-0.00258	0.00635

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)**	0.00158	0.00152	0.00150
	(A2 * A3 * A4 * B1 * !Y)	-0.00162	-0.00179	-0.00178
	(A2 * A3 * !A4 * B1 * !Y)	0.00139	0.00141	0.00139
	(A2 * A3 * !A4 * B1 * !Y)	-0.00182	-0.00184	-0.00183
	(A2 * A3 * !A4 * !B1 * Y)	0.00056	0.00056	0.00050
	(A2 * A3 * !A4 * !B1 * Y)	-0.00203	-0.00204	-0.00215
	(A2 * !A3 * B1 * !Y)	0.00141	0.00143	0.00141
	(A2 * !A3 * B1 * !Y)	-0.00183	-0.00184	-0.00183
	(A2 * !A3 * !B1 * Y)	0.00055	0.00055	0.00051
	(A2 * !A3 * !B1 * Y)	-0.00208	-0.00209	-0.00216
	(!A2 * B1 * !Y)	0.00144	0.00144	0.00145
	(!A2 * B1 * !Y)	-0.00182	-0.00182	-0.00183
	(!A2 * !B1 * Y)	0.00055	0.00055	0.00052
	(!A2 * !B1 * Y)	-0.00213	-0.00214	-0.00217
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00314	0.00303	0.00299
	(A2 * A3 * A4 * B1 * !Y)	-0.00318	-0.00348	-0.00348
	(A2 * A3 * !A4 * B1 * !Y)	0.00278	0.00279	0.00278
	(A2 * A3 * !A4 * B1 * !Y)	-0.00357	-0.00358	-0.00357
	(A2 * A3 * !A4 * !B1 * Y)	0.00103	0.00104	0.00090
	(A2 * A3 * !A4 * !B1 * Y)	-0.00400	-0.00405	-0.00430
	(A2 * !A3 * B1 * !Y)	0.00282	0.00284	0.00282
	(A2 * !A3 * B1 * !Y)	-0.00357	-0.00358	-0.00357
	(A2 * !A3 * !B1 * Y)	0.00098	0.00099	0.00090
	(A2 * !A3 * !B1 * Y)	-0.00414	-0.00418	-0.00432
	(!A2 * B1 * !Y)	0.00286	0.00288	0.00287
	(!A2 * B1 * !Y)	-0.00356	-0.00358	-0.00357
	(!A2 * !B1 * Y)	0.00098	0.00099	0.00094
	(!A2 * !B1 * Y)	-0.00425	-0.00429	-0.00435

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00631	0.00607	0.00600
	(A2 * A3 * A4 * B1 * !Y)	-0.00629	-0.00691	-0.00688
	(A2 * A3 * !A4 * B1 * !Y)	0.00549	0.00555	0.00552
	(A2 * A3 * !A4 * B1 * !Y)	-0.00703	-0.00709	-0.00706
	(A2 * A3 * !A4 * !B1 * Y)	0.00208	0.00209	0.00183
	(A2 * A3 * !A4 * !B1 * Y)	-0.00788	-0.00795	-0.00844
	(A2 * !A3 * B1 * !Y)	0.00558	0.00566	0.00562
	(A2 * !A3 * B1 * !Y)	-0.00703	-0.00710	-0.00706
	(A2 * !A3 * !B1 * Y)	0.00200	0.00201	0.00183
	(A2 * !A3 * !B1 * Y)	-0.00812	-0.00818	-0.00849
	(!A2 * B1 * !Y)	0.00570	0.00576	0.00574
	(!A2 * B1 * !Y)	-0.00702	-0.00707	-0.00706
	(!A2 * !B1 * Y)	0.00208	0.00209	0.00197
	(!A2 * !B1 * Y)	-0.00834	-0.00840	-0.00853

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)**	-0.00151	-0.00151	-0.00150
	(A2 * A3 * A4 * B1 * !Y)	0.00179	0.00179	0.00178
	(A2 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00141	-0.00139
	(A2 * A3 * !A4 * B1 * !Y)	0.00183	0.00185	0.00183
	(A2 * A3 * !A4 * !B1 * Y)	-0.00050	-0.00050	-0.00050
	(A2 * A3 * !A4 * !B1 * Y)	0.00216	0.00216	0.00217
	(A2 * !A3 * B1 * !Y)	-0.00129	-0.00142	-0.00141
	(A2 * !A3 * B1 * !Y)	0.00183	0.00185	0.00183
	(A2 * !A3 * !B1 * Y)	-0.00050	-0.00050	-0.00050
	(A2 * !A3 * !B1 * Y)	0.00216	0.00217	0.00217
	(!A2 * B1 * !Y)	-0.00140	-0.00144	-0.00145
	(!A2 * B1 * !Y)	0.00184	0.00184	0.00183
	(!A2 * !B1 * Y)	-0.00051	-0.00051	-0.00051
	(!A2 * !B1 * Y)	0.00216	0.00217	0.00217
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00298	-0.00299	-0.00298
	(A2 * A3 * A4 * B1 * !Y)	0.00346	0.00348	0.00348
	(A2 * A3 * !A4 * B1 * !Y)	-0.00240	-0.00279	-0.00278
	(A2 * A3 * !A4 * B1 * !Y)	0.00357	0.00361	0.00358
	(A2 * A3 * !A4 * !B1 * Y)	-0.00089	-0.00088	-0.00088
	(A2 * A3 * !A4 * !B1 * Y)	0.00436	0.00437	0.00436
	(A2 * !A3 * B1 * !Y)	-0.00248	-0.00284	-0.00282
	(A2 * !A3 * B1 * !Y)	0.00357	0.00361	0.00358
	(A2 * !A3 * !B1 * Y)	-0.00088	-0.00089	-0.00088
	(A2 * !A3 * !B1 * Y)	0.00433	0.00437	0.00436
	(!A2 * B1 * !Y)	-0.00276	-0.00288	-0.00287
	(!A2 * B1 * !Y)	0.00358	0.00361	0.00358
	(!A2 * !B1 * Y)	-0.00090	-0.00092	-0.00091
	(!A2 * !B1 * Y)	0.00433	0.00438	0.00436

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00597	-0.00600	-0.00598
	(A2 * A3 * A4 * B1 * !Y)	0.00684	0.00691	0.00688
	(A2 * A3 * !A4 * B1 * !Y)	-0.00471	-0.00555	-0.00552
	(A2 * A3 * !A4 * B1 * !Y)	0.00707	0.00715	0.00709
	(A2 * A3 * !A4 * !B1 * Y)	-0.00184	-0.00184	-0.00183
	(A2 * A3 * !A4 * !B1 * Y)	0.00855	0.00858	0.00854
	(A2 * !A3 * B1 * !Y)	-0.00487	-0.00566	-0.00562
	(A2 * !A3 * B1 * !Y)	0.00706	0.00715	0.00709
	(A2 * !A3 * !B1 * Y)	-0.00185	-0.00185	-0.00183
	(A2 * !A3 * !B1 * Y)	0.00855	0.00858	0.00854
	(!A2 * B1 * !Y)	-0.00550	-0.00576	-0.00574
	(!A2 * B1 * !Y)	0.00706	0.00716	0.00709
	(!A2 * !B1 * Y)	-0.00193	-0.00192	-0.00191
	(!A2 * !B1 * Y)	0.00856	0.00859	0.00855

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)**	0.00153	0.00146	0.00145
	(A1 * A3 * A4 * B1 * !Y)	-0.00163	-0.00179	-0.00178
	(A1 * A3 * !A4 * B1 * !Y)	0.00135	0.00136	0.00135
	(A1 * A3 * !A4 * B1 * !Y)	-0.00182	-0.00184	-0.00183
	(A1 * A3 * !A4 * !B1 * Y)	0.00056	0.00056	0.00057
	(A1 * A3 * !A4 * !B1 * Y)	-0.00191	-0.00191	-0.00190
	(A1 * !A3 * B1 * !Y)	0.00138	0.00140	0.00139
	(A1 * !A3 * B1 * !Y)	-0.00182	-0.00183	-0.00183
	(A1 * !A3 * !B1 * Y)	0.00060	0.00059	0.00060
	(A1 * !A3 * !B1 * Y)	-0.00191	-0.00191	-0.00191
	(!A1 * A3 * A4 * B1 * !Y)	0.00139	0.00139	0.00139
	(!A1 * A3 * A4 * B1 * !Y)	-0.00183	-0.00182	-0.00183
	(!A1 * A3 * A4 * !B1 * Y)	0.00130	0.00131	0.00131
	(!A1 * A3 * A4 * !B1 * Y)	-0.00190	-0.00191	-0.00191
	(!A1 * A3 * !A4 * B1 * !Y)	0.00083	0.00083	0.00083
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00183	-0.00183	-0.00183
	(!A1 * A3 * !A4 * !B1 * Y)	0.00071	0.00071	0.00070
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00192	-0.00193	-0.00192
	(!A1 * !A3 * B1 * !Y)	0.00087	0.00086	0.00086
	(!A1 * !A3 * B1 * !Y)	-0.00183	-0.00183	-0.00183
	(!A1 * !A3 * !B1 * Y)	0.00072	0.00071	0.00071
	(!A1 * !A3 * !B1 * Y)	-0.00193	-0.00192	-0.00192

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00309	0.00296	0.00292
	(A1 * A3 * A4 * B1 * !Y)	-0.00324	-0.00355	-0.00354
	(A1 * A3 * !A4 * B1 * !Y)	0.00272	0.00276	0.00273
	(A1 * A3 * !A4 * B1 * !Y)	-0.00363	-0.00366	-0.00364
	(A1 * A3 * !A4 * !B1 * Y)	0.00122	0.00123	0.00125
	(A1 * A3 * !A4 * !B1 * Y)	-0.00367	-0.00368	-0.00367
	(A1 * !A3 * B1 * !Y)	0.00279	0.00281	0.00280
	(A1 * !A3 * B1 * !Y)	-0.00362	-0.00364	-0.00364
	(A1 * !A3 * !B1 * Y)	0.00129	0.00130	0.00130
	(A1 * !A3 * !B1 * Y)	-0.00368	-0.00369	-0.00367
	(!A1 * A3 * A4 * B1 * !Y)	0.00280	0.00283	0.00281
	(!A1 * A3 * A4 * B1 * !Y)	-0.00363	-0.00366	-0.00364
	(!A1 * A3 * A4 * !B1 * Y)	0.00276	0.00277	0.00276
	(!A1 * A3 * A4 * !B1 * Y)	-0.00367	-0.00368	-0.00368
	(!A1 * A3 * !A4 * B1 * !Y)	0.00168	0.00169	0.00167
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00363	-0.00366	-0.00364
	(!A1 * A3 * !A4 * !B1 * Y)	0.00155	0.00155	0.00154
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00371	-0.00372	-0.00370
	(!A1 * !A3 * B1 * !Y)	0.00171	0.00173	0.00172
	(!A1 * !A3 * B1 * !Y)	-0.00363	-0.00365	-0.00364
	(!A1 * !A3 * !B1 * Y)	0.00152	0.00153	0.00153
	(!A1 * !A3 * !B1 * Y)	-0.00370	-0.00372	-0.00371

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00610	0.00584	0.00577
	(A1 * A3 * A4 * B1 * !Y)	-0.00638	-0.00703	-0.00702
	(A1 * A3 * !A4 * B1 * !Y)	0.00531	0.00536	0.00533
	(A1 * A3 * !A4 * B1 * !Y)	-0.00722	-0.00726	-0.00722
	(A1 * A3 * !A4 * !B1 * Y)	0.00232	0.00235	0.00241
	(A1 * A3 * !A4 * !B1 * Y)	-0.00723	-0.00727	-0.00722
	(A1 * !A3 * B1 * !Y)	0.00541	0.00545	0.00543
	(A1 * !A3 * B1 * !Y)	-0.00721	-0.00724	-0.00722
	(A1 * !A3 * !B1 * Y)	0.00242	0.00244	0.00247
	(A1 * !A3 * !B1 * Y)	-0.00723	-0.00727	-0.00722
	(!A1 * A3 * A4 * B1 * !Y)	0.00553	0.00555	0.00556
	(!A1 * A3 * A4 * B1 * !Y)	-0.00719	-0.00721	-0.00722
	(!A1 * A3 * A4 * !B1 * Y)	0.00550	0.00552	0.00552
	(!A1 * A3 * A4 * !B1 * Y)	-0.00724	-0.00726	-0.00726
	(!A1 * A3 * !A4 * B1 * !Y)	0.00319	0.00319	0.00317
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00721	-0.00726	-0.00722
	(!A1 * A3 * !A4 * !B1 * Y)	0.00295	0.00299	0.00297
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00726	-0.00733	-0.00728
	(!A1 * !A3 * B1 * !Y)	0.00322	0.00325	0.00321
	(!A1 * !A3 * B1 * !Y)	-0.00723	-0.00727	-0.00722
	(!A1 * !A3 * !B1 * Y)	0.00291	0.00292	0.00290
	(!A1 * !A3 * !B1 * Y)	-0.00731	-0.00732	-0.00729

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)**	-0.00145	-0.00145	-0.00144
	(A1 * A3 * A4 * B1 * !Y)	0.00178	0.00179	0.00178
	(A1 * A3 * !A4 * B1 * !Y)	-0.00121	-0.00136	-0.00135
	(A1 * A3 * !A4 * B1 * !Y)	0.00182	0.00185	0.00183
	(A1 * A3 * !A4 * !B1 * Y)	-0.00055	-0.00056	-0.00056
	(A1 * A3 * !A4 * !B1 * Y)	0.00195	0.00199	0.00193
	(A1 * !A3 * B1 * !Y)	-0.00134	-0.00140	-0.00139
	(A1 * !A3 * B1 * !Y)	0.00184	0.00184	0.00183
	(A1 * !A3 * !B1 * Y)	-0.00056	-0.00057	-0.00057
	(A1 * !A3 * !B1 * Y)	0.00195	0.00199	0.00193
	(!A1 * A3 * A4 * B1 * !Y)	-0.00134	-0.00139	-0.00139
	(!A1 * A3 * A4 * B1 * !Y)	0.00184	0.00184	0.00183
	(!A1 * A3 * A4 * !B1 * Y)	-0.00119	-0.00131	-0.00131
	(!A1 * A3 * A4 * !B1 * Y)	0.00201	0.00193	0.00191
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(!A1 * A3 * !A4 * B1 * !Y)	0.00184	0.00185	0.00183
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00071	-0.00071	-0.00070
	(!A1 * A3 * !A4 * !B1 * Y)	0.00198	0.00198	0.00192
	(!A1 * !A3 * B1 * !Y)	-0.00087	-0.00086	-0.00086
	(!A1 * !A3 * B1 * !Y)	0.00184	0.00185	0.00183
	(!A1 * !A3 * !B1 * Y)	-0.00072	-0.00071	-0.00071
	(!A1 * !A3 * !B1 * Y)	0.00202	0.00203	0.00194

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00292	-0.00292	-0.00291
	(A1 * A3 * A4 * B1 * !Y)	0.00355	0.00355	0.00354
	(A1 * A3 * !A4 * B1 * !Y)	-0.00241	-0.00276	-0.00273
	(A1 * A3 * !A4 * B1 * !Y)	0.00363	0.00368	0.00365
	(A1 * A3 * !A4 * !B1 * Y)	-0.00118	-0.00120	-0.00121
	(A1 * A3 * !A4 * !B1 * Y)	0.00379	0.00385	0.00372
	(A1 * !A3 * B1 * !Y)	-0.00269	-0.00281	-0.00280
	(A1 * !A3 * B1 * !Y)	0.00364	0.00369	0.00365
	(A1 * !A3 * !B1 * Y)	-0.00122	-0.00124	-0.00126
	(A1 * !A3 * !B1 * Y)	0.00379	0.00385	0.00372
	(!A1 * A3 * A4 * B1 * !Y)	-0.00268	-0.00283	-0.00281
	(!A1 * A3 * A4 * B1 * !Y)	0.00365	0.00368	0.00365
	(!A1 * A3 * A4 * !B1 * Y)	-0.00243	-0.00277	-0.00276
	(!A1 * A3 * A4 * !B1 * Y)	0.00394	0.00372	0.00369
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00168	-0.00169	-0.00167
	(!A1 * A3 * !A4 * B1 * !Y)	0.00363	0.00369	0.00365
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00155	-0.00155	-0.00154
	(!A1 * A3 * !A4 * !B1 * Y)	0.00381	0.00380	0.00370
	(!A1 * !A3 * B1 * !Y)	-0.00171	-0.00173	-0.00172
	(!A1 * !A3 * B1 * !Y)	0.00366	0.00369	0.00365
	(!A1 * !A3 * !B1 * Y)	-0.00152	-0.00153	-0.00153
	(!A1 * !A3 * !B1 * Y)	0.00388	0.00393	0.00376

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00574	-0.00577	-0.00575
	(A1 * A3 * A4 * B1 * !Y)	0.00697	0.00703	0.00702
	(A1 * A3 * !A4 * B1 * !Y)	-0.00464	-0.00536	-0.00533
	(A1 * A3 * !A4 * B1 * !Y)	0.00722	0.00732	0.00725
	(A1 * A3 * !A4 * !B1 * Y)	-0.00226	-0.00227	-0.00231
	(A1 * A3 * !A4 * !B1 * Y)	0.00750	0.00754	0.00733
	(A1 * !A3 * B1 * !Y)	-0.00525	-0.00545	-0.00543
	(A1 * !A3 * B1 * !Y)	0.00722	0.00729	0.00724
	(A1 * !A3 * !B1 * Y)	-0.00231	-0.00234	-0.00237
	(A1 * !A3 * !B1 * Y)	0.00750	0.00759	0.00733
	(!A1 * A3 * A4 * B1 * !Y)	-0.00528	-0.00555	-0.00556
	(!A1 * A3 * A4 * B1 * !Y)	0.00722	0.00732	0.00724
	(!A1 * A3 * A4 * !B1 * Y)	-0.00481	-0.00552	-0.00552
	(!A1 * A3 * A4 * !B1 * Y)	0.00777	0.00735	0.00728
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00319	-0.00319	-0.00317
	(!A1 * A3 * !A4 * B1 * !Y)	0.00721	0.00732	0.00725
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00295	-0.00299	-0.00297
	(!A1 * A3 * !A4 * !B1 * Y)	0.00749	0.00749	0.00729
	(!A1 * !A3 * B1 * !Y)	-0.00322	-0.00325	-0.00321
	(!A1 * !A3 * B1 * !Y)	0.00727	0.00732	0.00725
	(!A1 * !A3 * !B1 * Y)	-0.00291	-0.00292	-0.00290
	(!A1 * !A3 * !B1 * Y)	0.00765	0.00773	0.00738

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)**	0.00148	0.00144	0.00142
	(A1 * A2 * A4 * B1 * !Y)	-0.00163	-0.00179	-0.00178
	(A1 * A2 * !A4 * B1 * !Y)	0.00135	0.00137	0.00136
	(A1 * A2 * !A4 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(A1 * A2 * !A4 * !B1 * Y)	0.00057	0.00058	0.00058
	(A1 * A2 * !A4 * !B1 * Y)	-0.00187	-0.00189	-0.00187
	(A1 * !A2 * A4 * !B1 * Y)	0.00130	0.00132	0.00130
	(A1 * !A2 * A4 * !B1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * !A2 * !A4 * !B1 * Y)	0.00068	0.00068	0.00068
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00189	-0.00189	-0.00189
	(!A2 * A4 * B1 * !Y)	0.00136	0.00137	0.00136
	(!A2 * A4 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A2 * !A4 * B1 * !Y)	0.00079	0.00080	0.00079
	(!A2 * !A4 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * A4 * B1 * !Y)	0.00133	0.00134	0.00133
	(!A1 * A2 * A4 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * A4 * !B1 * Y)	0.00128	0.00129	0.00128
	(!A1 * A2 * A4 * !B1 * Y)	-0.00189	-0.00189	-0.00188
	(!A1 * A2 * !A4 * B1 * !Y)	0.00080	0.00080	0.00080
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * !A4 * !B1 * Y)	0.00068	0.00069	0.00068
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00188	-0.00190	-0.00189
	(!A1 * !A2 * A4 * !B1 * Y)	0.00130	0.00130	0.00131
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00188	-0.00188	-0.00188
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00071	0.00072	0.00071
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00188	-0.00189	-0.00189

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00302	0.00291	0.00287
	(A1 * A2 * A4 * B1 * !Y)	-0.00324	-0.00352	-0.00352
	(A1 * A2 * !A4 * B1 * !Y)	0.00271	0.00273	0.00271
	(A1 * A2 * !A4 * B1 * !Y)	-0.00362	-0.00363	-0.00362
	(A1 * A2 * !A4 * !B1 * Y)	0.00129	0.00128	0.00129
	(A1 * A2 * !A4 * !B1 * Y)	-0.00356	-0.00353	-0.00353
	(A1 * !A2 * A4 * !B1 * Y)	0.00273	0.00274	0.00273
	(A1 * !A2 * A4 * !B1 * Y)	-0.00361	-0.00363	-0.00362
	(A1 * !A2 * !A4 * !B1 * Y)	0.00150	0.00151	0.00150
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00363	-0.00363	-0.00362
	(!A2 * A4 * B1 * !Y)	0.00273	0.00276	0.00273
	(!A2 * A4 * B1 * !Y)	-0.00361	-0.00364	-0.00362
	(!A2 * !A4 * B1 * !Y)	0.00159	0.00161	0.00160
	(!A2 * !A4 * B1 * !Y)	-0.00361	-0.00364	-0.00362
	(!A1 * A2 * A4 * B1 * !Y)	0.00272	0.00274	0.00272
	(!A1 * A2 * A4 * B1 * !Y)	-0.00362	-0.00363	-0.00362
	(!A1 * A2 * A4 * !B1 * Y)	0.00271	0.00273	0.00271
	(!A1 * A2 * A4 * !B1 * Y)	-0.00363	-0.00364	-0.00362
	(!A1 * A2 * !A4 * B1 * !Y)	0.00160	0.00161	0.00160
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00360	-0.00363	-0.00362
	(!A1 * A2 * !A4 * !B1 * Y)	0.00150	0.00149	0.00149
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00364	-0.00364	-0.00364
	(!A1 * !A2 * A4 * !B1 * Y)	0.00273	0.00274	0.00273
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00361	-0.00363	-0.00362
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00156	0.00157	0.00156
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00361	-0.00363	-0.00362

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00605	0.00578	0.00571
	(A1 * A2 * A4 * B1 * !Y)	-0.00647	-0.00711	-0.00709
	(A1 * A2 * !A4 * B1 * !Y)	0.00540	0.00545	0.00541
	(A1 * A2 * !A4 * B1 * !Y)	-0.00729	-0.00733	-0.00730
	(A1 * A2 * !A4 * !B1 * Y)	0.00242	0.00245	0.00243
	(A1 * A2 * !A4 * !B1 * Y)	-0.00717	-0.00723	-0.00714
	(A1 * !A2 * A4 * !B1 * Y)	0.00539	0.00547	0.00542
	(A1 * !A2 * A4 * !B1 * Y)	-0.00728	-0.00734	-0.00730
	(A1 * !A2 * !A4 * !B1 * Y)	0.00280	0.00280	0.00279
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00732	-0.00732	-0.00730
	(!A2 * A4 * B1 * !Y)	0.00540	0.00545	0.00542
	(!A2 * A4 * B1 * !Y)	-0.00728	-0.00733	-0.00730
	(!A2 * !A4 * B1 * !Y)	0.00299	0.00302	0.00300
	(!A2 * !A4 * B1 * !Y)	-0.00729	-0.00734	-0.00730
	(!A1 * A2 * A4 * B1 * !Y)	0.00533	0.00536	0.00532
	(!A1 * A2 * A4 * B1 * !Y)	-0.00733	-0.00733	-0.00730
	(!A1 * A2 * A4 * !B1 * Y)	0.00534	0.00535	0.00533
	(!A1 * A2 * A4 * !B1 * Y)	-0.00733	-0.00732	-0.00730
	(!A1 * A2 * !A4 * B1 * !Y)	0.00310	0.00310	0.00309
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00731	-0.00732	-0.00730
	(!A1 * A2 * !A4 * !B1 * Y)	0.00287	0.00289	0.00288
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00730	-0.00733	-0.00732
	(!A1 * !A2 * A4 * !B1 * Y)	0.00539	0.00545	0.00541
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00729	-0.00733	-0.00730
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00291	0.00293	0.00292
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00730	-0.00733	-0.00730

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)**	-0.00141	-0.00142	-0.00142
	(A1 * A2 * A4 * B1 * !Y)	0.00177	0.00179	0.00178
	(A1 * A2 * !A4 * B1 * !Y)	-0.00132	-0.00137	-0.00136
	(A1 * A2 * !A4 * B1 * !Y)	0.00183	0.00185	0.00183
	(A1 * A2 * !A4 * !B1 * Y)	-0.00056	-0.00056	-0.00056
	(A1 * A2 * !A4 * !B1 * Y)	0.00190	0.00193	0.00190
	(A1 * !A2 * A4 * !B1 * Y)	-0.00124	-0.00131	-0.00130
	(A1 * !A2 * A4 * !B1 * Y)	0.00188	0.00190	0.00189
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00068	-0.00068	-0.00068
	(A1 * !A2 * !A4 * !B1 * Y)	0.00196	0.00197	0.00192
	(!A2 * A4 * B1 * !Y)	-0.00132	-0.00137	-0.00136
	(!A2 * A4 * B1 * !Y)	0.00182	0.00184	0.00183
	(!A2 * !A4 * B1 * !Y)	-0.00079	-0.00080	-0.00079
	(!A2 * !A4 * B1 * !Y)	0.00184	0.00185	0.00183
	(!A1 * A2 * A4 * B1 * !Y)	-0.00122	-0.00134	-0.00133
	(!A1 * A2 * A4 * B1 * !Y)	0.00182	0.00184	0.00183
	(!A1 * A2 * A4 * !B1 * Y)	-0.00116	-0.00128	-0.00128
	(!A1 * A2 * A4 * !B1 * Y)	0.00189	0.00190	0.00189
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00080	-0.00080	-0.00080
	(!A1 * A2 * !A4 * B1 * !Y)	0.00182	0.00185	0.00183
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00068	-0.00069	-0.00068
	(!A1 * A2 * !A4 * !B1 * Y)	0.00189	0.00192	0.00189
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00125	-0.00130	-0.00131
	(!A1 * !A2 * A4 * !B1 * Y)	0.00188	0.00190	0.00189
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00071	-0.00072	-0.00071
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00189	0.00191	0.00190

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00285	-0.00286	-0.00286
	(A1 * A2 * A4 * B1 * !Y)	0.00350	0.00352	0.00352
	(A1 * A2 * !A4 * B1 * !Y)	-0.00260	-0.00272	-0.00271
	(A1 * A2 * !A4 * B1 * !Y)	0.00362	0.00363	0.00363
	(A1 * A2 * !A4 * !B1 * Y)	-0.00122	-0.00123	-0.00122
	(A1 * A2 * !A4 * !B1 * Y)	0.00366	0.00371	0.00364
	(A1 * !A2 * A4 * !B1 * Y)	-0.00259	-0.00274	-0.00273
	(A1 * !A2 * A4 * !B1 * Y)	0.00361	0.00366	0.00363
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * !A4 * !B1 * Y)	0.00371	0.00373	0.00364
	(!A2 * A4 * B1 * !Y)	-0.00264	-0.00276	-0.00273
	(!A2 * A4 * B1 * !Y)	0.00361	0.00365	0.00363
	(!A2 * !A4 * B1 * !Y)	-0.00159	-0.00161	-0.00160
	(!A2 * !A4 * B1 * !Y)	0.00364	0.00367	0.00363
	(!A1 * A2 * A4 * B1 * !Y)	-0.00245	-0.00272	-0.00272
	(!A1 * A2 * A4 * B1 * !Y)	0.00363	0.00365	0.00363
	(!A1 * A2 * A4 * !B1 * Y)	-0.00243	-0.00272	-0.00271
	(!A1 * A2 * A4 * !B1 * Y)	0.00365	0.00365	0.00363
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00160	-0.00161	-0.00160
	(!A1 * A2 * !A4 * B1 * !Y)	0.00362	0.00367	0.00363
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00150	-0.00149	-0.00149
	(!A1 * A2 * !A4 * !B1 * Y)	0.00365	0.00371	0.00364
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00261	-0.00274	-0.00273
	(!A1 * !A2 * A4 * !B1 * Y)	0.00361	0.00366	0.00363
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00156	-0.00157	-0.00156
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00365	0.00367	0.00363

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00569	-0.00571	-0.00569
	(A1 * A2 * A4 * B1 * !Y)	0.00707	0.00711	0.00709
	(A1 * A2 * !A4 * B1 * !Y)	-0.00521	-0.00544	-0.00541
	(A1 * A2 * !A4 * B1 * !Y)	0.00731	0.00733	0.00733
	(A1 * A2 * !A4 * !B1 * Y)	-0.00228	-0.00229	-0.00227
	(A1 * A2 * !A4 * !B1 * Y)	0.00744	0.00749	0.00736
	(A1 * !A2 * A4 * !B1 * Y)	-0.00506	-0.00547	-0.00542
	(A1 * !A2 * A4 * !B1 * Y)	0.00729	0.00739	0.00732
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00280	-0.00280	-0.00279
	(A1 * !A2 * !A4 * !B1 * Y)	0.00757	0.00759	0.00737
	(!A2 * A4 * B1 * !Y)	-0.00519	-0.00545	-0.00542
	(!A2 * A4 * B1 * !Y)	0.00729	0.00739	0.00732
	(!A2 * !A4 * B1 * !Y)	-0.00299	-0.00302	-0.00300
	(!A2 * !A4 * B1 * !Y)	0.00736	0.00741	0.00733
	(!A1 * A2 * A4 * B1 * !Y)	-0.00474	-0.00536	-0.00532
	(!A1 * A2 * A4 * B1 * !Y)	0.00734	0.00738	0.00732
	(!A1 * A2 * A4 * !B1 * Y)	-0.00471	-0.00535	-0.00533
	(!A1 * A2 * A4 * !B1 * Y)	0.00738	0.00738	0.00732
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00310	-0.00310	-0.00309
	(!A1 * A2 * !A4 * B1 * !Y)	0.00731	0.00740	0.00732
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00287	-0.00289	-0.00288
	(!A1 * A2 * !A4 * !B1 * Y)	0.00733	0.00744	0.00733
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00511	-0.00545	-0.00541
	(!A1 * !A2 * A4 * !B1 * Y)	0.00729	0.00739	0.00732
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00291	-0.00293	-0.00292
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00736	0.00741	0.00733

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)**	0.00158	0.00153	0.00151
	(A1 * A2 * A3 * B1 * !Y)	-0.00163	-0.00178	-0.00177
	(A1 * A2 * !A3 * !B1 * Y)	0.00132	0.00133	0.00132
	(A1 * A2 * !A3 * !B1 * Y)	-0.00193	-0.00195	-0.00194
	(A1 * !A2 * A3 * !B1 * Y)	0.00130	0.00131	0.00130
	(A1 * !A2 * A3 * !B1 * Y)	-0.00194	-0.00195	-0.00194
	(A1 * !A2 * !A3 * !B1 * Y)	0.00132	0.00134	0.00133
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00193	-0.00195	-0.00194
	(!A3 * B1 * !Y)	0.00145	0.00147	0.00146
	(!A3 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A2 * A3 * B1 * !Y)	0.00142	0.00143	0.00142
	(!A2 * A3 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * A2 * A3 * B1 * !Y)	0.00140	0.00141	0.00141
	(!A1 * A2 * A3 * B1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A1 * A2 * A3 * !B1 * Y)	0.00128	0.00129	0.00128
	(!A1 * A2 * A3 * !B1 * Y)	-0.00194	-0.00195	-0.00194
	(!A1 * !A3 * !B1 * Y)	0.00132	0.00134	0.00133
	(!A1 * !A3 * !B1 * Y)	-0.00194	-0.00195	-0.00194
	(!A1 * !A2 * A3 * !B1 * Y)	0.00130	0.00130	0.00129
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00194	-0.00195	-0.00194

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00303	0.00293	0.00289
	(A1 * A2 * A3 * B1 * !Y)	-0.00324	-0.00356	-0.00353
	(A1 * A2 * !A3 * !B1 * Y)	0.00275	0.00277	0.00276
	(A1 * A2 * !A3 * !B1 * Y)	-0.00362	-0.00364	-0.00363
	(A1 * !A2 * A3 * !B1 * Y)	0.00271	0.00273	0.00271
	(A1 * !A2 * A3 * !B1 * Y)	-0.00363	-0.00364	-0.00363
	(A1 * !A2 * !A3 * !B1 * Y)	0.00274	0.00277	0.00276
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00362	-0.00364	-0.00363
	(!A3 * B1 * !Y)	0.00275	0.00280	0.00276
	(!A3 * B1 * !Y)	-0.00362	-0.00365	-0.00363
	(!A2 * A3 * B1 * !Y)	0.00271	0.00272	0.00271
	(!A2 * A3 * B1 * !Y)	-0.00363	-0.00363	-0.00363
	(!A1 * A2 * A3 * B1 * !Y)	0.00269	0.00271	0.00269
	(!A1 * A2 * A3 * B1 * !Y)	-0.00363	-0.00364	-0.00363
	(!A1 * A2 * A3 * !B1 * Y)	0.00269	0.00271	0.00269
	(!A1 * A2 * A3 * !B1 * Y)	-0.00364	-0.00365	-0.00363
	(!A1 * !A3 * !B1 * Y)	0.00274	0.00277	0.00276
	(!A1 * !A3 * !B1 * Y)	-0.00362	-0.00364	-0.00363
	(!A1 * !A2 * A3 * !B1 * Y)	0.00271	0.00273	0.00271
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00363	-0.00364	-0.00363

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00605	0.00580	0.00572
	(A1 * A2 * A3 * B1 * !Y)	-0.00646	-0.00704	-0.00705
	(A1 * A2 * !A3 * !B1 * Y)	0.00542	0.00546	0.00544
	(A1 * A2 * !A3 * !B1 * Y)	-0.00725	-0.00727	-0.00725
	(A1 * !A2 * A3 * !B1 * Y)	0.00531	0.00533	0.00533
	(A1 * !A2 * A3 * !B1 * Y)	-0.00724	-0.00725	-0.00725
	(A1 * !A2 * !A3 * !B1 * Y)	0.00541	0.00545	0.00544
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00724	-0.00727	-0.00725
	(!A3 * B1 * !Y)	0.00540	0.00545	0.00542
	(!A3 * B1 * !Y)	-0.00724	-0.00728	-0.00725
	(!A2 * A3 * B1 * !Y)	0.00525	0.00533	0.00528
	(!A2 * A3 * B1 * !Y)	-0.00723	-0.00729	-0.00725
	(!A1 * A2 * A3 * B1 * !Y)	0.00527	0.00528	0.00526
	(!A1 * A2 * A3 * B1 * !Y)	-0.00726	-0.00727	-0.00725
	(!A1 * A2 * A3 * !B1 * Y)	0.00528	0.00529	0.00526
	(!A1 * A2 * A3 * !B1 * Y)	-0.00728	-0.00727	-0.00725
	(!A1 * !A3 * !B1 * Y)	0.00543	0.00546	0.00544
	(!A1 * !A3 * !B1 * Y)	-0.00725	-0.00727	-0.00725
	(!A1 * !A2 * A3 * !B1 * Y)	0.00528	0.00533	0.00530
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00724	-0.00727	-0.00725

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)**	-0.00152	-0.00152	-0.00151
	(A1 * A2 * A3 * B1 * !Y)	0.00178	0.00178	0.00177
	(A1 * A2 * !A3 * !B1 * Y)	-0.00127	-0.00133	-0.00132
	(A1 * A2 * !A3 * !B1 * Y)	0.00193	0.00197	0.00195
	(A1 * !A2 * A3 * !B1 * Y)	-0.00122	-0.00131	-0.00130
	(A1 * !A2 * A3 * !B1 * Y)	0.00194	0.00198	0.00195
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00127	-0.00133	-0.00133
	(A1 * !A2 * !A3 * !B1 * Y)	0.00193	0.00197	0.00195
	(!A3 * B1 * !Y)	-0.00141	-0.00145	-0.00146
	(!A3 * B1 * !Y)	0.00181	0.00183	0.00182
	(!A2 * A3 * B1 * !Y)	-0.00135	-0.00143	-0.00142
	(!A2 * A3 * B1 * !Y)	0.00182	0.00185	0.00182
	(!A1 * A2 * A3 * B1 * !Y)	-0.00132	-0.00141	-0.00141
	(!A1 * A2 * A3 * B1 * !Y)	0.00181	0.00185	0.00182
	(!A1 * A2 * A3 * !B1 * Y)	-0.00120	-0.00129	-0.00128
	(!A1 * A2 * A3 * !B1 * Y)	0.00196	0.00198	0.00195
	(!A1 * !A3 * !B1 * Y)	-0.00128	-0.00133	-0.00133
	(!A1 * !A3 * !B1 * Y)	0.00195	0.00197	0.00195
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00122	-0.00130	-0.00129
	(!A1 * !A2 * A3 * !B1 * Y)	0.00194	0.00198	0.00195

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00288	-0.00289	-0.00288
	(A1 * A2 * A3 * B1 * !Y)	0.00352	0.00357	0.00353
	(A1 * A2 * !A3 * !B1 * Y)	-0.00261	-0.00277	-0.00276
	(A1 * A2 * !A3 * !B1 * Y)	0.00362	0.00367	0.00364
	(A1 * !A2 * A3 * !B1 * Y)	-0.00248	-0.00270	-0.00271
	(A1 * !A2 * A3 * !B1 * Y)	0.00364	0.00364	0.00364
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00262	-0.00277	-0.00276
	(A1 * !A2 * !A3 * !B1 * Y)	0.00362	0.00367	0.00364
	(!A3 * B1 * !Y)	-0.00264	-0.00277	-0.00276
	(!A3 * B1 * !Y)	0.00362	0.00369	0.00364
	(!A2 * A3 * B1 * !Y)	-0.00249	-0.00270	-0.00271
	(!A2 * A3 * B1 * !Y)	0.00364	0.00365	0.00364
	(!A1 * A2 * A3 * B1 * !Y)	-0.00244	-0.00269	-0.00269
	(!A1 * A2 * A3 * B1 * !Y)	0.00363	0.00368	0.00364
	(!A1 * A2 * A3 * !B1 * Y)	-0.00243	-0.00269	-0.00269
	(!A1 * A2 * A3 * !B1 * Y)	0.00364	0.00368	0.00364
	(!A1 * !A3 * !B1 * Y)	-0.00262	-0.00277	-0.00276
	(!A1 * !A3 * !B1 * Y)	0.00362	0.00367	0.00364
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00249	-0.00270	-0.00271
	(!A1 * !A2 * A3 * !B1 * Y)	0.00364	0.00364	0.00364

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00570	-0.00571	-0.00571
	(A1 * A2 * A3 * B1 * !Y)	0.00703	0.00704	0.00705
	(A1 * A2 * !A3 * !B1 * Y)	-0.00516	-0.00546	-0.00544
	(A1 * A2 * !A3 * !B1 * Y)	0.00725	0.00734	0.00727
	(A1 * !A2 * A3 * !B1 * Y)	-0.00490	-0.00533	-0.00533
	(A1 * !A2 * A3 * !B1 * Y)	0.00729	0.00736	0.00728
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00521	-0.00545	-0.00544
	(A1 * !A2 * !A3 * !B1 * Y)	0.00725	0.00734	0.00727
	(!A3 * B1 * !Y)	-0.00525	-0.00544	-0.00542
	(!A3 * B1 * !Y)	0.00725	0.00728	0.00728
	(!A2 * A3 * B1 * !Y)	-0.00491	-0.00533	-0.00528
	(!A2 * A3 * B1 * !Y)	0.00729	0.00736	0.00728
	(!A1 * A2 * A3 * B1 * !Y)	-0.00484	-0.00528	-0.00526
	(!A1 * A2 * A3 * B1 * !Y)	0.00726	0.00736	0.00728
	(!A1 * A2 * A3 * !B1 * Y)	-0.00485	-0.00529	-0.00526
	(!A1 * A2 * A3 * !B1 * Y)	0.00730	0.00735	0.00728
	(!A1 * !A3 * !B1 * Y)	-0.00520	-0.00546	-0.00544
	(!A1 * !A3 * !B1 * Y)	0.00725	0.00734	0.00727
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00491	-0.00533	-0.00530
	(!A1 * !A2 * A3 * !B1 * Y)	0.00729	0.00736	0.00727

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)	0.00178	0.00180	0.00177
	(A1 * A2 * A3 * A4 * !Y)	-0.00087	-0.00088	-0.00086
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00190	0.00192	0.00189
	(A1 * A2 * A3 * A4 * !Y)	-0.00178	-0.00180	-0.00177
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00371	0.00379	0.00373
	(A1 * A2 * A3 * A4 * !Y)	-0.00346	-0.00354	-0.00348

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)	-0.00159	-0.00161	-0.00175
	(A1 * A2 * A3 * A4 * !Y)	0.00100	0.00101	0.00090
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00152	-0.00154	-0.00185
	(A1 * A2 * A3 * A4 * !Y)	0.00208	0.00208	0.00184
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00302	-0.00308	-0.00365
	(A1 * A2 * A3 * A4 * !Y)	0.00404	0.00406	0.00361

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00265	0.00262	0.00264	0.00258	0.00272	1.08259
sky130_fd_sc_hs__a41o_2	0.00261	0.00268	0.00274	0.00258	0.00275	2.09288
sky130_fd_sc_hs__a41o_4	0.00515	0.00498	0.00514	0.00495	0.00508	3.46488

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41o_1	0.00000	0.10086	0.18829
sky130_fd_sc_hs__a41o_2	0.00000	0.12893	0.19448
sky130_fd_sc_hs__a41o_4	0.00000	0.25787	0.38896

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)	0.11082	0.66270	6.47040
	A2->X (RR)	0.11997	0.67523	6.50813
	A3->X (RR)	0.12696	0.67039	6.46841
	A4->X (RR)	0.13070	0.65803	6.40055
	B1->X (RR)	0.06505	0.58507	6.29549
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.11599	0.60159	6.59955
	A2->X (RR)	0.12641	0.61038	6.62583
	A3->X (RR)	0.13309	0.60023	6.57023
	A4->X (RR)	0.13628	0.58320	6.48918
	B1->X (RR)	0.05995	0.50409	6.36123
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.13074	0.56838	6.55559
	A2->X (RR)	0.14428	0.58231	6.62194
	A3->X (RR)	0.15097	0.55122	6.47538
	A4->X (RR)	0.15530	0.53735	6.39058
	B1->X (RR)	0.05655	0.43408	6.21577

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.14736	0.59597	4.63783
	A2->X (FF)	0.17426	0.63632	4.73108
	A3->X (FF)	0.19323	0.66627	4.82182
	A4->X (FF)	0.21185	0.69518	4.91732
	B1->X (FF)	0.17826	0.66921	4.85688
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.17414	0.61781	4.72781
	A2->X (FF)	0.20311	0.65785	4.83118
	A3->X (FF)	0.22043	0.68352	4.90297
	A4->X (FF)	0.23689	0.70889	4.99125
	B1->X (FF)	0.20482	0.68824	4.94501
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.18043	0.58418	4.48345
	A2->X (FF)	0.20714	0.62265	4.56962
	A3->X (FF)	0.22803	0.65425	4.68687
	A4->X (FF)	0.24941	0.68455	4.78232
	B1->X (FF)	0.21298	0.67026	4.79846

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.01126	0.01158	0.02478
	A1	0.00614	0.00649	0.01981
	A2	0.01224	0.01238	0.02360
	A2	0.00616	0.00630	0.01764
	A3	0.01318	0.01329	0.02434
	A3	0.00616	0.00625	0.01745
	A4	0.01418	0.01429	0.02513
	A4	0.00615	0.00624	0.01726
	B1	0.00985	0.01037	0.03228
	B1	0.00392	0.00459	0.02882
sky130_fd_sc_hs__a41o_2	A1	0.01297	0.01346	0.02643
	A1	0.00785	0.00837	0.02145
	A2	0.01397	0.01432	0.02527
	A2	0.00785	0.00822	0.01925
	A3	0.01496	0.01527	0.02604
	A3	0.00786	0.00818	0.01909
	A4	0.01589	0.01621	0.02685
	A4	0.00783	0.00815	0.01905
	B1	0.01151	0.01222	0.03349
	B1	0.00555	0.00633	0.02996

sky130_fd_sc_hs__a41o_4	**A1**	0.02498	0.02575	0.04807
	A1	0.01475	0.01555	0.03825
	A2	0.02686	0.02728	0.04830
	A2	0.01474	0.01517	0.03643
	A3	0.02903	0.02947	0.05062
	A3	0.01473	0.01521	0.03690
	A4	0.03090	0.03142	0.05216
	A4	0.01469	0.01523	0.03668
	B1	0.02366	0.02514	0.06279
	B1	0.00974	0.01139	0.05549

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00327	0.00326	0.01575
	A1	0.00845	0.00843	0.02070
	A2	0.00378	0.00379	0.01509
	A2	0.00987	0.00987	0.02117
	A3	0.00437	0.00443	0.01603
	A3	0.01134	0.01139	0.02261
	A4	0.00482	0.00495	0.01740
	A4	0.01270	0.01283	0.02400
	B1	0.00303	0.00451	0.02646
	B1	0.01000	0.01108	0.03125

sky130_fd_sc_hs__a41o_2	**A1**	0.00566	0.00580	0.01840
	A1	0.01084	0.01099	0.02266
	A2	0.00634	0.00645	0.01784
	A2	0.01247	0.01260	0.02353
	A3	0.00695	0.00704	0.01900
	A3	0.01398	0.01407	0.02503
	A4	0.00731	0.00744	0.01952
	A4	0.01521	0.01537	0.02629
	B1	0.00525	0.00682	0.02936
	B1	0.01252	0.01371	0.03361
sky130_fd_sc_hs__a41o_4	**A1**	0.01096	0.01094	0.03282
	A1	0.02134	0.02132	0.04291
	A2	0.01281	0.01282	0.03498
	A2	0.02495	0.02495	0.04611
	A3	0.01384	0.01391	0.03623
	A3	0.02797	0.02801	0.04936
	A4	0.01526	0.01523	0.03839
	A4	0.03106	0.03102	0.05251
	B1	0.01029	0.01332	0.05661
	B1	0.02470	0.02719	0.06627

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)**	0.00149	0.00141	0.00140
	(A2 * A3 * A4 * B1 * X)	-0.00147	-0.00162	-0.00162
	(A2 * A3 * !A4 * B1 * X)	0.00131	0.00132	0.00131
	(A2 * A3 * !A4 * B1 * X)	-0.00165	-0.00167	-0.00166
	(A2 * A3 * !A4 * !B1 * !X)	0.00050	0.00050	0.00044
	(A2 * A3 * !A4 * !B1 * !X)	-0.00181	-0.00182	-0.00193
	(A2 * !A3 * B1 * X)	0.00130	0.00130	0.00130
	(A2 * !A3 * B1 * X)	-0.00166	-0.00166	-0.00166
	(A2 * !A3 * !B1 * !X)	0.00048	0.00048	0.00044
	(A2 * !A3 * !B1 * !X)	-0.00186	-0.00187	-0.00194
	(!A2 * B1 * X)	0.00133	0.00134	0.00133
	(!A2 * B1 * X)	-0.00165	-0.00166	-0.00166
	(!A2 * !B1 * !X)	0.00047	0.00047	0.00045
	(!A2 * !B1 * !X)	-0.00191	-0.00192	-0.00195
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00148	0.00140	0.00138
	(A2 * A3 * A4 * B1 * X)	-0.00147	-0.00163	-0.00162
	(A2 * A3 * !A4 * B1 * X)	0.00127	0.00129	0.00128
	(A2 * A3 * !A4 * B1 * X)	-0.00166	-0.00167	-0.00167
	(A2 * A3 * !A4 * !B1 * !X)	0.00051	0.00051	0.00045
	(A2 * A3 * !A4 * !B1 * !X)	-0.00180	-0.00180	-0.00192
	(A2 * !A3 * B1 * X)	0.00129	0.00130	0.00129
	(A2 * !A3 * B1 * X)	-0.00167	-0.00167	-0.00167
	(A2 * !A3 * !B1 * !X)	0.00050	0.00050	0.00046
	(A2 * !A3 * !B1 * !X)	-0.00185	-0.00185	-0.00193
	(!A2 * B1 * X)	0.00133	0.00134	0.00133
	(!A2 * B1 * X)	-0.00167	-0.00168	-0.00167
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00048
	(!A2 * !B1 * !X)	-0.00190	-0.00190	-0.00193

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00309	0.00297	0.00292
	(A2 * A3 * A4 * B1 * X)	-0.00299	-0.00331	-0.00329
	(A2 * A3 * !A4 * B1 * X)	0.00270	0.00272	0.00271
	(A2 * A3 * !A4 * B1 * X)	-0.00338	-0.00340	-0.00339
	(A2 * A3 * !A4 * !B1 * !X)	0.00111	0.00111	0.00098
	(A2 * A3 * !A4 * !B1 * !X)	-0.00365	-0.00367	-0.00393
	(A2 * !A3 * B1 * X)	0.00273	0.00276	0.00274
	(A2 * !A3 * B1 * X)	-0.00338	-0.00341	-0.00339
	(A2 * !A3 * !B1 * !X)	0.00105	0.00105	0.00097
	(A2 * !A3 * !B1 * !X)	-0.00378	-0.00380	-0.00396
	(!A2 * B1 * X)	0.00279	0.00279	0.00279
	(!A2 * B1 * X)	-0.00339	-0.00339	-0.00339
	(!A2 * !B1 * !X)	0.00109	0.00108	0.00103
	(!A2 * !B1 * !X)	-0.00389	-0.00390	-0.00398

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)**	-0.00139	-0.00140	-0.00139
	(A2 * A3 * A4 * B1 * X)	0.00162	0.00163	0.00162
	(A2 * A3 * !A4 * B1 * X)	-0.00116	-0.00130	-0.00131
	(A2 * A3 * !A4 * B1 * X)	0.00166	0.00167	0.00167
	(A2 * A3 * !A4 * !B1 * !X)	-0.00043	-0.00044	-0.00043
	(A2 * A3 * !A4 * !B1 * !X)	0.00194	0.00198	0.00195
	(A2 * !A3 * B1 * X)	-0.00119	-0.00130	-0.00130
	(A2 * !A3 * B1 * X)	0.00166	0.00169	0.00167
	(A2 * !A3 * !B1 * !X)	-0.00043	-0.00044	-0.00043
	(A2 * !A3 * !B1 * !X)	0.00194	0.00198	0.00195
	(!A2 * B1 * X)	-0.00129	-0.00133	-0.00133
	(!A2 * B1 * X)	0.00165	0.00167	0.00167
	(!A2 * !B1 * !X)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * !X)	0.00194	0.00198	0.00195
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00138	-0.00138	-0.00138
	(A2 * A3 * A4 * B1 * X)	0.00163	0.00163	0.00162
	(A2 * A3 * !A4 * B1 * X)	-0.00115	-0.00128	-0.00128
	(A2 * A3 * !A4 * B1 * X)	0.00166	0.00167	0.00167
	(A2 * A3 * !A4 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(A2 * A3 * !A4 * !B1 * !X)	0.00193	0.00197	0.00194
	(A2 * !A3 * B1 * X)	-0.00119	-0.00130	-0.00129
	(A2 * !A3 * B1 * X)	0.00167	0.00167	0.00167
	(A2 * !A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * !B1 * !X)	0.00193	0.00197	0.00194
	(!A2 * B1 * X)	-0.00128	-0.00133	-0.00133
	(!A2 * B1 * X)	0.00168	0.00168	0.00167
	(!A2 * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !X)	0.00193	0.00197	0.00194

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00291	-0.00293	-0.00291
	(A2 * A3 * A4 * B1 * X)	0.00328	0.00332	0.00329
	(A2 * A3 * !A4 * B1 * X)	-0.00236	-0.00272	-0.00271
	(A2 * A3 * !A4 * B1 * X)	0.00339	0.00343	0.00340
	(A2 * A3 * !A4 * !B1 * !X)	-0.00097	-0.00098	-0.00096
	(A2 * A3 * !A4 * !B1 * !X)	0.00400	0.00404	0.00399
	(A2 * !A3 * B1 * X)	-0.00242	-0.00276	-0.00274
	(A2 * !A3 * B1 * X)	0.00339	0.00343	0.00340
	(A2 * !A3 * !B1 * !X)	-0.00097	-0.00099	-0.00097
	(A2 * !A3 * !B1 * !X)	0.00400	0.00404	0.00399
	(!A2 * B1 * X)	-0.00268	-0.00279	-0.00279
	(!A2 * B1 * X)	0.00339	0.00343	0.00340
	(!A2 * !B1 * !X)	-0.00101	-0.00102	-0.00100
	(!A2 * !B1 * !X)	0.00400	0.00405	0.00399

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)**	0.00152	0.00144	0.00142
	(A1 * A3 * A4 * B1 * X)	-0.00146	-0.00161	-0.00160
	(A1 * A3 * !A4 * B1 * X)	0.00132	0.00133	0.00132
	(A1 * A3 * !A4 * B1 * X)	-0.00165	-0.00166	-0.00165
	(A1 * A3 * !A4 * !B1 * !X)	0.00061	0.00060	0.00061
	(A1 * A3 * !A4 * !B1 * !X)	-0.00166	-0.00166	-0.00165
	(A1 * !A3 * B1 * X)	0.00135	0.00136	0.00136
	(A1 * !A3 * B1 * X)	-0.00164	-0.00165	-0.00165
	(A1 * !A3 * !B1 * !X)	0.00063	0.00062	0.00063
	(A1 * !A3 * !B1 * !X)	-0.00166	-0.00165	-0.00165
	(!A1 * A3 * A4 * B1 * X)	0.00135	0.00136	0.00136
	(!A1 * A3 * A4 * B1 * X)	-0.00164	-0.00165	-0.00165
	(!A1 * A3 * A4 * !B1 * !X)	0.00135	0.00136	0.00135
	(!A1 * A3 * A4 * !B1 * !X)	-0.00165	-0.00166	-0.00166
	(!A1 * A3 * !A4 * B1 * X)	0.00079	0.00080	0.00079
	(!A1 * A3 * !A4 * B1 * X)	-0.00165	-0.00165	-0.00165
	(!A1 * A3 * !A4 * !B1 * !X)	0.00076	0.00075	0.00075
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00166	-0.00166	-0.00166
	(!A1 * !A3 * B1 * X)	0.00079	0.00080	0.00080
	(!A1 * !A3 * B1 * X)	-0.00164	-0.00166	-0.00165
	(!A1 * !A3 * !B1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A3 * !B1 * !X)	-0.00166	-0.00166	-0.00166

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00153	0.00145	0.00143
	(A1 * A3 * A4 * B1 * X)	-0.00146	-0.00162	-0.00161
	(A1 * A3 * !A4 * B1 * X)	0.00133	0.00135	0.00134
	(A1 * A3 * !A4 * B1 * X)	-0.00165	-0.00166	-0.00166
	(A1 * A3 * !A4 * !B1 * !X)	0.00061	0.00061	0.00062
	(A1 * A3 * !A4 * !B1 * !X)	-0.00166	-0.00166	-0.00165
	(A1 * !A3 * B1 * X)	0.00137	0.00138	0.00137
	(A1 * !A3 * B1 * X)	-0.00165	-0.00167	-0.00166
	(A1 * !A3 * !B1 * !X)	0.00065	0.00066	0.00065
	(A1 * !A3 * !B1 * !X)	-0.00166	-0.00167	-0.00165
	(!A1 * A3 * A4 * B1 * X)	0.00138	0.00138	0.00138
	(!A1 * A3 * A4 * B1 * X)	-0.00166	-0.00166	-0.00166
	(!A1 * A3 * A4 * !B1 * !X)	0.00136	0.00138	0.00137
	(!A1 * A3 * A4 * !B1 * !X)	-0.00165	-0.00167	-0.00166
	(!A1 * A3 * !A4 * B1 * X)	0.00081	0.00082	0.00081
	(!A1 * A3 * !A4 * B1 * X)	-0.00166	-0.00167	-0.00166
	(!A1 * A3 * !A4 * !B1 * !X)	0.00076	0.00077	0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00166	-0.00167	-0.00167
	(!A1 * !A3 * B1 * X)	0.00085	0.00085	0.00084
	(!A1 * !A3 * B1 * X)	-0.00166	-0.00167	-0.00166
	(!A1 * !A3 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A3 * !B1 * !X)	-0.00166	-0.00168	-0.00167

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00301	0.00289	0.00285
	(A1 * A3 * A4 * B1 * X)	-0.00294	-0.00325	-0.00324
	(A1 * A3 * !A4 * B1 * X)	0.00264	0.00267	0.00265
	(A1 * A3 * !A4 * B1 * X)	-0.00333	-0.00335	-0.00333
	(A1 * A3 * !A4 * !B1 * !X)	0.00116	0.00117	0.00119
	(A1 * A3 * !A4 * !B1 * !X)	-0.00331	-0.00333	-0.00332
	(A1 * !A3 * B1 * X)	0.00267	0.00269	0.00268
	(A1 * !A3 * B1 * X)	-0.00333	-0.00335	-0.00333
	(A1 * !A3 * !B1 * !X)	0.00119	0.00119	0.00120
	(A1 * !A3 * !B1 * !X)	-0.00334	-0.00334	-0.00332
	(!A1 * A3 * A4 * B1 * X)	0.00270	0.00271	0.00272
	(!A1 * A3 * A4 * B1 * X)	-0.00332	-0.00333	-0.00333
	(!A1 * A3 * A4 * !B1 * !X)	0.00270	0.00273	0.00271
	(!A1 * A3 * A4 * !B1 * !X)	-0.00332	-0.00334	-0.00333
	(!A1 * A3 * !A4 * B1 * X)	0.00156	0.00157	0.00156
	(!A1 * A3 * !A4 * B1 * X)	-0.00334	-0.00335	-0.00333
	(!A1 * A3 * !A4 * !B1 * !X)	0.00148	0.00149	0.00147
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00336	-0.00337	-0.00335
	(!A1 * !A3 * B1 * X)	0.00154	0.00156	0.00155
	(!A1 * !A3 * B1 * X)	-0.00333	-0.00336	-0.00334
	(!A1 * !A3 * !B1 * !X)	0.00141	0.00142	0.00141
	(!A1 * !A3 * !B1 * !X)	-0.00336	-0.00337	-0.00336

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)**	-0.00141	-0.00142	-0.00141
	(A1 * A3 * A4 * B1 * X)	0.00159	0.00161	0.00160
	(A1 * A3 * !A4 * B1 * X)	-0.00120	-0.00133	-0.00132
	(A1 * A3 * !A4 * B1 * X)	0.00166	0.00167	0.00166
	(A1 * A3 * !A4 * !B1 * !X)	-0.00058	-0.00059	-0.00059
	(A1 * A3 * !A4 * !B1 * !X)	0.00169	0.00172	0.00167
	(A1 * !A3 * B1 * X)	-0.00131	-0.00136	-0.00136
	(A1 * !A3 * B1 * X)	0.00166	0.00167	0.00166
	(A1 * !A3 * !B1 * !X)	-0.00059	-0.00060	-0.00060
	(A1 * !A3 * !B1 * !X)	0.00169	0.00172	0.00167
	(!A1 * A3 * A4 * B1 * X)	-0.00132	-0.00136	-0.00136
	(!A1 * A3 * A4 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * A3 * A4 * !B1 * !X)	-0.00123	-0.00136	-0.00135
	(!A1 * A3 * A4 * !B1 * !X)	0.00176	0.00168	0.00166
	(!A1 * A3 * !A4 * B1 * X)	-0.00079	-0.00080	-0.00079
	(!A1 * A3 * !A4 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00076	-0.00075	-0.00075
	(!A1 * A3 * !A4 * !B1 * !X)	0.00173	0.00171	0.00166
	(!A1 * !A3 * B1 * X)	-0.00079	-0.00080	-0.00080
	(!A1 * !A3 * B1 * X)	0.00165	0.00167	0.00166
	(!A1 * !A3 * !B1 * !X)	-0.00073	-0.00073	-0.00073
	(!A1 * !A3 * !B1 * !X)	0.00175	0.00177	0.00168

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00142	-0.00143	-0.00143
	(A1 * A3 * A4 * B1 * X)	0.00160	0.00162	0.00161
	(A1 * A3 * !A4 * B1 * X)	-0.00120	-0.00135	-0.00134
	(A1 * A3 * !A4 * B1 * X)	0.00165	0.00168	0.00166
	(A1 * A3 * !A4 * !B1 * !X)	-0.00060	-0.00061	-0.00062
	(A1 * A3 * !A4 * !B1 * !X)	0.00171	0.00173	0.00168
	(A1 * !A3 * B1 * X)	-0.00133	-0.00138	-0.00137
	(A1 * !A3 * B1 * X)	0.00167	0.00167	0.00166
	(A1 * !A3 * !B1 * !X)	-0.00061	-0.00063	-0.00063
	(A1 * !A3 * !B1 * !X)	0.00170	0.00173	0.00168
	(!A1 * A3 * A4 * B1 * X)	-0.00133	-0.00138	-0.00138
	(!A1 * A3 * A4 * B1 * X)	0.00166	0.00167	0.00166
	(!A1 * A3 * A4 * !B1 * !X)	-0.00124	-0.00138	-0.00137
	(!A1 * A3 * A4 * !B1 * !X)	0.00176	0.00169	0.00167
	(!A1 * A3 * !A4 * B1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * A3 * !A4 * B1 * X)	0.00167	0.00168	0.00166
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	0.00174	0.00173	0.00167
	(!A1 * !A3 * B1 * X)	-0.00085	-0.00085	-0.00084
	(!A1 * !A3 * B1 * X)	0.00166	0.00168	0.00166
	(!A1 * !A3 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A3 * !B1 * !X)	0.00175	0.00177	0.00169

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00284	-0.00286	-0.00284
	(A1 * A3 * A4 * B1 * X)	0.00322	0.00327	0.00324
	(A1 * A3 * !A4 * B1 * X)	-0.00234	-0.00267	-0.00265
	(A1 * A3 * !A4 * B1 * X)	0.00334	0.00338	0.00334
	(A1 * A3 * !A4 * !B1 * !X)	-0.00110	-0.00111	-0.00112
	(A1 * A3 * !A4 * !B1 * !X)	0.00346	0.00348	0.00337
	(A1 * !A3 * B1 * X)	-0.00260	-0.00269	-0.00268
	(A1 * !A3 * B1 * X)	0.00335	0.00338	0.00334
	(A1 * !A3 * !B1 * !X)	-0.00113	-0.00114	-0.00115
	(A1 * !A3 * !B1 * !X)	0.00346	0.00349	0.00337
	(!A1 * A3 * A4 * B1 * X)	-0.00261	-0.00271	-0.00272
	(!A1 * A3 * A4 * B1 * X)	0.00335	0.00338	0.00334
	(!A1 * A3 * A4 * !B1 * !X)	-0.00240	-0.00273	-0.00271
	(!A1 * A3 * A4 * !B1 * !X)	0.00360	0.00338	0.00334
	(!A1 * A3 * !A4 * B1 * X)	-0.00156	-0.00157	-0.00156
	(!A1 * A3 * !A4 * B1 * X)	0.00334	0.00339	0.00335
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00148	-0.00149	-0.00147
	(!A1 * A3 * !A4 * !B1 * !X)	0.00347	0.00345	0.00336
	(!A1 * !A3 * B1 * X)	-0.00154	-0.00156	-0.00155
	(!A1 * !A3 * B1 * X)	0.00336	0.00339	0.00335
	(!A1 * !A3 * !B1 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * !A3 * !B1 * !X)	0.00355	0.00357	0.00341

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)**	0.00149	0.00141	0.00139
	(A1 * A2 * A4 * B1 * X)	-0.00147	-0.00164	-0.00164
	(A1 * A2 * !A4 * B1 * X)	0.00133	0.00133	0.00133
	(A1 * A2 * !A4 * B1 * X)	-0.00169	-0.00169	-0.00168
	(A1 * A2 * !A4 * !B1 * !X)	0.00064	0.00064	0.00064
	(A1 * A2 * !A4 * !B1 * !X)	-0.00165	-0.00166	-0.00164
	(A1 * !A2 * A4 * !B1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A2 * A4 * !B1 * !X)	-0.00168	-0.00169	-0.00168
	(A1 * !A2 * !A4 * !B1 * !X)	0.00075	0.00075	0.00075
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(!A2 * A4 * B1 * X)	0.00133	0.00134	0.00134
	(!A2 * A4 * B1 * X)	-0.00168	-0.00168	-0.00168
	(!A2 * !A4 * B1 * X)	0.00080	0.00081	0.00080
	(!A2 * !A4 * B1 * X)	-0.00169	-0.00170	-0.00168
	(!A1 * A2 * A4 * B1 * X)	0.00130	0.00131	0.00131
	(!A1 * A2 * A4 * B1 * X)	-0.00168	-0.00168	-0.00168
	(!A1 * A2 * A4 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * A2 * A4 * !B1 * !X)	-0.00169	-0.00168	-0.00168
	(!A1 * A2 * !A4 * B1 * X)	0.00078	0.00078	0.00078
	(!A1 * A2 * !A4 * B1 * X)	-0.00169	-0.00169	-0.00168
	(!A1 * A2 * !A4 * !B1 * !X)	0.00074	0.00074	0.00073
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !A2 * A4 * !B1 * !X)	0.00133	0.00133	0.00134
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00079	0.00079	0.00078
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00169	-0.00170	-0.00168

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00155	0.00148	0.00146
	(A1 * A2 * A4 * B1 * X)	-0.00146	-0.00163	-0.00162
	(A1 * A2 * !A4 * B1 * X)	0.00138	0.00139	0.00139
	(A1 * A2 * !A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(A1 * A2 * !A4 * !B1 * !X)	0.00066	0.00067	0.00066
	(A1 * A2 * !A4 * !B1 * !X)	-0.00165	-0.00167	-0.00165
	(A1 * !A2 * A4 * !B1 * !X)	0.00140	0.00140	0.00140
	(A1 * !A2 * A4 * !B1 * !X)	-0.00167	-0.00167	-0.00167
	(A1 * !A2 * !A4 * !B1 * !X)	0.00076	0.00077	0.00076
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00166	-0.00168	-0.00167
	(!A2 * A4 * B1 * X)	0.00139	0.00140	0.00139
	(!A2 * A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(!A2 * !A4 * B1 * X)	0.00081	0.00081	0.00081
	(!A2 * !A4 * B1 * X)	-0.00166	-0.00168	-0.00167
	(!A1 * A2 * A4 * B1 * X)	0.00136	0.00137	0.00136
	(!A1 * A2 * A4 * B1 * X)	-0.00167	-0.00168	-0.00167
	(!A1 * A2 * A4 * !B1 * !X)	0.00137	0.00136	0.00136
	(!A1 * A2 * A4 * !B1 * !X)	-0.00167	-0.00167	-0.00167
	(!A1 * A2 * !A4 * B1 * X)	0.00082	0.00083	0.00082
	(!A1 * A2 * !A4 * B1 * X)	-0.00166	-0.00168	-0.00167
	(!A1 * A2 * !A4 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00166	-0.00168	-0.00167
	(!A1 * !A2 * A4 * !B1 * !X)	0.00139	0.00141	0.00140
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00167	-0.00168	-0.00167

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00308	0.00294	0.00291
	(A1 * A2 * A4 * B1 * X)	-0.00297	-0.00329	-0.00328
	(A1 * A2 * !A4 * B1 * X)	0.00276	0.00276	0.00276
	(A1 * A2 * !A4 * B1 * X)	-0.00339	-0.00339	-0.00338
	(A1 * A2 * !A4 * !B1 * !X)	0.00127	0.00129	0.00127
	(A1 * A2 * !A4 * !B1 * !X)	-0.00331	-0.00333	-0.00329
	(A1 * !A2 * A4 * !B1 * !X)	0.00274	0.00276	0.00275
	(A1 * !A2 * A4 * !B1 * !X)	-0.00337	-0.00338	-0.00338
	(A1 * !A2 * !A4 * !B1 * !X)	0.00146	0.00147	0.00147
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00337	-0.00338	-0.00338
	(!A2 * A4 * B1 * X)	0.00274	0.00276	0.00275
	(!A2 * A4 * B1 * X)	-0.00337	-0.00338	-0.00338
	(!A2 * !A4 * B1 * X)	0.00157	0.00159	0.00157
	(!A2 * !A4 * B1 * X)	-0.00337	-0.00341	-0.00338
	(!A1 * A2 * A4 * B1 * X)	0.00270	0.00271	0.00271
	(!A1 * A2 * A4 * B1 * X)	-0.00338	-0.00338	-0.00338
	(!A1 * A2 * A4 * !B1 * !X)	0.00271	0.00272	0.00271
	(!A1 * A2 * A4 * !B1 * !X)	-0.00338	-0.00338	-0.00338
	(!A1 * A2 * !A4 * B1 * X)	0.00159	0.00159	0.00158
	(!A1 * A2 * !A4 * B1 * X)	-0.00338	-0.00340	-0.00338
	(!A1 * A2 * !A4 * !B1 * !X)	0.00148	0.00149	0.00148
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00340	-0.00340	-0.00339
	(!A1 * !A2 * A4 * !B1 * !X)	0.00275	0.00279	0.00276
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00337	-0.00339	-0.00338
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00153	0.00153	0.00153
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00338	-0.00338	-0.00338

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)**	-0.00138	-0.00139	-0.00139
	(A1 * A2 * A4 * B1 * X)	0.00162	0.00164	0.00164
	(A1 * A2 * !A4 * B1 * X)	-0.00129	-0.00133	-0.00133
	(A1 * A2 * !A4 * B1 * X)	0.00169	0.00170	0.00169
	(A1 * A2 * !A4 * !B1 * !X)	-0.00061	-0.00062	-0.00061
	(A1 * A2 * !A4 * !B1 * !X)	0.00170	0.00173	0.00169
	(A1 * !A2 * A4 * !B1 * !X)	-0.00127	-0.00134	-0.00134
	(A1 * !A2 * A4 * !B1 * !X)	0.00168	0.00170	0.00169
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * !A4 * !B1 * !X)	0.00174	0.00176	0.00170
	(!A2 * A4 * B1 * X)	-0.00128	-0.00134	-0.00134
	(!A2 * A4 * B1 * X)	0.00168	0.00170	0.00169
	(!A2 * !A4 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A2 * !A4 * B1 * X)	0.00170	0.00171	0.00169
	(!A1 * A2 * A4 * B1 * X)	-0.00118	-0.00131	-0.00131
	(!A1 * A2 * A4 * B1 * X)	0.00168	0.00170	0.00169
	(!A1 * A2 * A4 * !B1 * !X)	-0.00118	-0.00131	-0.00130
	(!A1 * A2 * A4 * !B1 * !X)	0.00169	0.00169	0.00169
	(!A1 * A2 * !A4 * B1 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * A2 * !A4 * B1 * X)	0.00170	0.00171	0.00169
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00074	-0.00074	-0.00073
	(!A1 * A2 * !A4 * !B1 * !X)	0.00168	0.00171	0.00168
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00128	-0.00133	-0.00134
	(!A1 * !A2 * A4 * !B1 * !X)	0.00168	0.00170	0.00169
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00169	0.00171	0.00169

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00145	-0.00145	-0.00145
	(A1 * A2 * A4 * B1 * X)	0.00161	0.00163	0.00162
	(A1 * A2 * !A4 * B1 * X)	-0.00135	-0.00139	-0.00139
	(A1 * A2 * !A4 * B1 * X)	0.00168	0.00169	0.00168
	(A1 * A2 * !A4 * !B1 * !X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !A4 * !B1 * !X)	0.00169	0.00171	0.00168
	(A1 * !A2 * A4 * !B1 * !X)	-0.00133	-0.00140	-0.00140
	(A1 * !A2 * A4 * !B1 * !X)	0.00167	0.00168	0.00167
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00076	-0.00077	-0.00076
	(A1 * !A2 * !A4 * !B1 * !X)	0.00173	0.00175	0.00170
	(!A2 * A4 * B1 * X)	-0.00135	-0.00140	-0.00139
	(!A2 * A4 * B1 * X)	0.00167	0.00168	0.00167
	(!A2 * !A4 * B1 * X)	-0.00081	-0.00081	-0.00081
	(!A2 * !A4 * B1 * X)	0.00167	0.00169	0.00168
	(!A1 * A2 * A4 * B1 * X)	-0.00125	-0.00137	-0.00136
	(!A1 * A2 * A4 * B1 * X)	0.00167	0.00168	0.00167
	(!A1 * A2 * A4 * !B1 * !X)	-0.00124	-0.00136	-0.00136
	(!A1 * A2 * A4 * !B1 * !X)	0.00167	0.00168	0.00167
	(!A1 * A2 * !A4 * B1 * X)	-0.00082	-0.00083	-0.00082
	(!A1 * A2 * !A4 * B1 * X)	0.00166	0.00169	0.00168
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * A2 * !A4 * !B1 * !X)	0.00167	0.00170	0.00167
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00134	-0.00140	-0.00140
	(!A1 * !A2 * A4 * !B1 * !X)	0.00167	0.00168	0.00167
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00167	0.00169	0.00167

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00290	-0.00291	-0.00289
	(A1 * A2 * A4 * B1 * X)	0.00327	0.00330	0.00328
	(A1 * A2 * !A4 * B1 * X)	-0.00264	-0.00276	-0.00276
	(A1 * A2 * !A4 * B1 * X)	0.00339	0.00341	0.00339
	(A1 * A2 * !A4 * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(A1 * A2 * !A4 * !B1 * !X)	0.00344	0.00348	0.00342
	(A1 * !A2 * A4 * !B1 * !X)	-0.00259	-0.00276	-0.00275
	(A1 * !A2 * A4 * !B1 * !X)	0.00338	0.00342	0.00339
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00146	-0.00147	-0.00147
	(A1 * !A2 * !A4 * !B1 * !X)	0.00352	0.00352	0.00341
	(!A2 * A4 * B1 * X)	-0.00264	-0.00276	-0.00275
	(!A2 * A4 * B1 * X)	0.00338	0.00340	0.00339
	(!A2 * !A4 * B1 * X)	-0.00157	-0.00159	-0.00157
	(!A2 * !A4 * B1 * X)	0.00341	0.00343	0.00340
	(!A1 * A2 * A4 * B1 * X)	-0.00245	-0.00271	-0.00271
	(!A1 * A2 * A4 * B1 * X)	0.00340	0.00341	0.00339
	(!A1 * A2 * A4 * !B1 * !X)	-0.00244	-0.00271	-0.00271
	(!A1 * A2 * A4 * !B1 * !X)	0.00342	0.00341	0.00339
	(!A1 * A2 * !A4 * B1 * X)	-0.00159	-0.00159	-0.00158
	(!A1 * A2 * !A4 * B1 * X)	0.00338	0.00343	0.00340
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00148	-0.00149	-0.00148
	(!A1 * A2 * !A4 * !B1 * !X)	0.00340	0.00345	0.00340
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00261	-0.00277	-0.00276
	(!A1 * !A2 * A4 * !B1 * !X)	0.00338	0.00342	0.00339
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00153	-0.00153	-0.00153
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00342	0.00343	0.00340

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)**	0.00158	0.00151	0.00148
	(A1 * A2 * A3 * B1 * X)	-0.00147	-0.00164	-0.00163
	(A1 * A2 * !A3 * !B1 * !X)	0.00142	0.00144	0.00143
	(A1 * A2 * !A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(A1 * !A2 * A3 * !B1 * !X)	0.00140	0.00140	0.00139
	(A1 * !A2 * A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(A1 * !A2 * !A3 * !B1 * !X)	0.00142	0.00144	0.00143
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(!A3 * B1 * X)	0.00143	0.00145	0.00143
	(!A3 * B1 * X)	-0.00167	-0.00169	-0.00168
	(!A2 * A3 * B1 * X)	0.00140	0.00141	0.00139
	(!A2 * A3 * B1 * X)	-0.00168	-0.00168	-0.00168
	(!A1 * A2 * A3 * B1 * X)	0.00139	0.00140	0.00139
	(!A1 * A2 * A3 * B1 * X)	-0.00167	-0.00168	-0.00168
	(!A1 * A2 * A3 * !B1 * !X)	0.00138	0.00140	0.00138
	(!A1 * A2 * A3 * !B1 * !X)	-0.00168	-0.00169	-0.00167
	(!A1 * !A3 * !B1 * !X)	0.00142	0.00144	0.00143
	(!A1 * !A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(!A1 * !A2 * A3 * !B1 * !X)	0.00140	0.00140	0.00139
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00157	0.00150	0.00148
	(A1 * A2 * A3 * B1 * X)	-0.00147	-0.00164	-0.00163
	(A1 * A2 * !A3 * !B1 * !X)	0.00140	0.00142	0.00141
	(A1 * A2 * !A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(A1 * !A2 * A3 * !B1 * !X)	0.00139	0.00140	0.00139
	(A1 * !A2 * A3 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(A1 * !A2 * !A3 * !B1 * !X)	0.00141	0.00141	0.00141
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(!A3 * B1 * X)	0.00140	0.00142	0.00141
	(!A3 * B1 * X)	-0.00167	-0.00168	-0.00168
	(!A2 * A3 * B1 * X)	0.00140	0.00140	0.00139
	(!A2 * A3 * B1 * X)	-0.00168	-0.00168	-0.00168
	(!A1 * A2 * A3 * B1 * X)	0.00137	0.00137	0.00137
	(!A1 * A2 * A3 * B1 * X)	-0.00167	-0.00168	-0.00168
	(!A1 * A2 * A3 * !B1 * !X)	0.00137	0.00138	0.00137
	(!A1 * A2 * A3 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(!A1 * !A3 * !B1 * !X)	0.00141	0.00142	0.00141
	(!A1 * !A3 * !B1 * !X)	-0.00167	-0.00168	-0.00168
	(!A1 * !A2 * A3 * !B1 * !X)	0.00139	0.00139	0.00138
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00168	-0.00168	-0.00168

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00301	0.00291	0.00287
	(A1 * A2 * A3 * B1 * X)	-0.00295	-0.00322	-0.00321
	(A1 * A2 * !A3 * !B1 * !X)	0.00273	0.00277	0.00275
	(A1 * A2 * !A3 * !B1 * !X)	-0.00328	-0.00331	-0.00330
	(A1 * !A2 * A3 * !B1 * !X)	0.00270	0.00273	0.00269
	(A1 * !A2 * A3 * !B1 * !X)	-0.00330	-0.00332	-0.00330
	(A1 * !A2 * !A3 * !B1 * !X)	0.00273	0.00277	0.00275
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00328	-0.00331	-0.00330
	(!A3 * B1 * X)	0.00273	0.00278	0.00275
	(!A3 * B1 * X)	-0.00328	-0.00331	-0.00329
	(!A2 * A3 * B1 * X)	0.00270	0.00271	0.00270
	(!A2 * A3 * B1 * X)	-0.00330	-0.00330	-0.00329
	(!A1 * A2 * A3 * B1 * X)	0.00267	0.00271	0.00268
	(!A1 * A2 * A3 * B1 * X)	-0.00329	-0.00332	-0.00329
	(!A1 * A2 * A3 * !B1 * !X)	0.00268	0.00270	0.00268
	(!A1 * A2 * A3 * !B1 * !X)	-0.00330	-0.00331	-0.00330
	(!A1 * !A3 * !B1 * !X)	0.00273	0.00277	0.00275
	(!A1 * !A3 * !B1 * !X)	-0.00328	-0.00331	-0.00330
	(!A1 * !A2 * A3 * !B1 * !X)	0.00270	0.00272	0.00269
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00330	-0.00331	-0.00330

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)**	-0.00148	-0.00148	-0.00148
	(A1 * A2 * A3 * B1 * X)	0.00163	0.00164	0.00163
	(A1 * A2 * !A3 * !B1 * !X)	-0.00138	-0.00143	-0.00143
	(A1 * A2 * !A3 * !B1 * !X)	0.00169	0.00168	0.00168
	(A1 * !A2 * A3 * !B1 * !X)	-0.00132	-0.00140	-0.00139
	(A1 * !A2 * A3 * !B1 * !X)	0.00167	0.00170	0.00168
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00139	-0.00143	-0.00143
	(A1 * !A2 * !A3 * !B1 * !X)	0.00169	0.00168	0.00168
	(!A3 * B1 * X)	-0.00138	-0.00143	-0.00143
	(!A3 * B1 * X)	0.00167	0.00169	0.00168
	(!A2 * A3 * B1 * X)	-0.00132	-0.00141	-0.00139
	(!A2 * A3 * B1 * X)	0.00168	0.00170	0.00168
	(!A1 * A2 * A3 * B1 * X)	-0.00129	-0.00140	-0.00139
	(!A1 * A2 * A3 * B1 * X)	0.00168	0.00170	0.00168
	(!A1 * A2 * A3 * !B1 * !X)	-0.00130	-0.00140	-0.00138
	(!A1 * A2 * A3 * !B1 * !X)	0.00168	0.00170	0.00168
	(!A1 * !A3 * !B1 * !X)	-0.00139	-0.00143	-0.00143
	(!A1 * !A3 * !B1 * !X)	0.00169	0.00168	0.00168
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00132	-0.00140	-0.00139
	(!A1 * !A2 * A3 * !B1 * !X)	0.00167	0.00170	0.00168

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00147	-0.00147	-0.00147
	(A1 * A2 * A3 * B1 * X)	0.00163	0.00164	0.00163
	(A1 * A2 * !A3 * !B1 * !X)	-0.00135	-0.00142	-0.00141
	(A1 * A2 * !A3 * !B1 * !X)	0.00167	0.00170	0.00168
	(A1 * !A2 * A3 * !B1 * !X)	-0.00130	-0.00140	-0.00139
	(A1 * !A2 * A3 * !B1 * !X)	0.00168	0.00170	0.00168
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00137	-0.00141	-0.00141
	(A1 * !A2 * !A3 * !B1 * !X)	0.00169	0.00170	0.00168
	(!A3 * B1 * X)	-0.00137	-0.00141	-0.00141
	(!A3 * B1 * X)	0.00167	0.00169	0.00168
	(!A2 * A3 * B1 * X)	-0.00130	-0.00140	-0.00139
	(!A2 * A3 * B1 * X)	0.00168	0.00170	0.00168
	(!A1 * A2 * A3 * B1 * X)	-0.00128	-0.00137	-0.00137
	(!A1 * A2 * A3 * B1 * X)	0.00169	0.00170	0.00168
	(!A1 * A2 * A3 * !B1 * !X)	-0.00129	-0.00138	-0.00137
	(!A1 * A2 * A3 * !B1 * !X)	0.00168	0.00170	0.00168
	(!A1 * !A3 * !B1 * !X)	-0.00136	-0.00142	-0.00141
	(!A1 * !A3 * !B1 * !X)	0.00167	0.00170	0.00168
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00130	-0.00139	-0.00138
	(!A1 * !A2 * A3 * !B1 * !X)	0.00168	0.00170	0.00168

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00286	-0.00288	-0.00286
	(A1 * A2 * A3 * B1 * X)	0.00320	0.00324	0.00321
	(A1 * A2 * !A3 * !B1 * !X)	-0.00260	-0.00275	-0.00275
	(A1 * A2 * !A3 * !B1 * !X)	0.00329	0.00334	0.00331
	(A1 * !A2 * A3 * !B1 * !X)	-0.00248	-0.00267	-0.00269
	(A1 * !A2 * A3 * !B1 * !X)	0.00332	0.00332	0.00331
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00262	-0.00275	-0.00275
	(A1 * !A2 * !A3 * !B1 * !X)	0.00329	0.00334	0.00331
	(!A3 * B1 * X)	-0.00263	-0.00274	-0.00275
	(!A3 * B1 * X)	0.00329	0.00331	0.00331
	(!A2 * A3 * B1 * X)	-0.00248	-0.00269	-0.00270
	(!A2 * A3 * B1 * X)	0.00332	0.00334	0.00331
	(!A1 * A2 * A3 * B1 * X)	-0.00244	-0.00268	-0.00268
	(!A1 * A2 * A3 * B1 * X)	0.00330	0.00335	0.00331
	(!A1 * A2 * A3 * !B1 * !X)	-0.00243	-0.00268	-0.00268
	(!A1 * A2 * A3 * !B1 * !X)	0.00331	0.00335	0.00331
	(!A1 * !A3 * !B1 * !X)	-0.00261	-0.00275	-0.00275
	(!A1 * !A3 * !B1 * !X)	0.00329	0.00334	0.00331
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00248	-0.00268	-0.00269
	(!A1 * !A2 * A3 * !B1 * !X)	0.00332	0.00332	0.00331

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)	0.00167	0.00170	0.00167
	(A1 * A2 * A3 * A4 * X)	-0.00082	-0.00083	-0.00081
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00169	0.00172	0.00169
	(A1 * A2 * A3 * A4 * X)	-0.00083	-0.00084	-0.00083
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00318	0.00323	0.00318
	(A1 * A2 * A3 * A4 * X)	-0.00170	-0.00173	-0.00170

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)	-0.00149	-0.00151	-0.00165
	(A1 * A2 * A3 * A4 * X)	0.00095	0.00096	0.00084
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00152	-0.00153	-0.00167
	(A1 * A2 * A3 * A4 * X)	0.00097	0.00097	0.00086
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00280	-0.00281	-0.00313
	(A1 * A2 * A3 * A4 * X)	0.00199	0.00198	0.00176

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00255	0.00241	1.07853
sky130_fd_sc_hs__and2b_2	0.00229	0.00279	1.82770
sky130_fd_sc_hs__and2b_4	0.00256	0.00504	3.95559

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.34000	0.59575
sky130_fd_sc_hs__and2b_2	0.00000	0.30106	0.40496
sky130_fd_sc_hs__and2b_4	0.00000	0.53742	1.20522

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)	0.12413	0.77070	8.12943
	B->X (RR)	0.07119	0.56836	6.33641
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.13490	0.70387	8.02186
	B->X (RR)	0.07509	0.49933	6.10107
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.13575	0.63908	8.27649
	B->X (RR)	0.07643	0.42158	6.38991

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)	0.10248	0.34963	2.30102
	B->X (FF)	0.08154	0.50962	4.40361
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.11665	0.32296	1.95704
	B->X (FF)	0.09481	0.51137	4.20154
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.11455	0.30281	2.20470
	B->X (FF)	0.09610	0.48915	4.52227

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	0.00583	0.00716	0.03277
	A_N	0.00920	0.01054	0.03624
	B	0.00734	0.00766	0.02701
	B	0.00395	0.00427	0.02381
sky130_fd_sc_hs__and2b_2	A_N	0.00897	0.01051	0.03462
	A_N	0.01201	0.01358	0.03793
	B	0.01024	0.01064	0.02379
	B	0.00625	0.00669	0.02046
sky130_fd_sc_hs__and2b_4	A_N	0.01674	0.01892	0.04606
	A_N	0.01997	0.02218	0.04944
	B	0.01938	0.02058	0.06151
	B	0.01238	0.01360	0.05527

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.01015	0.01070	0.03577
	A_N	0.00677	0.00730	0.03218
	B	0.00332	0.00468	0.02641
	B	0.00668	0.00804	0.02977
sky130_fd_sc_hs__and2b_2	A_N	0.01237	0.01317	0.03512
	A_N	0.00932	0.01008	0.03206
	B	0.00539	0.00668	0.02666
	B	0.00936	0.01056	0.03054
sky130_fd_sc_hs__and2b_4	A_N	0.01925	0.02095	0.04882
	A_N	0.01602	0.01770	0.04528
	B	0.01066	0.01426	0.06264
	B	0.01760	0.02114	0.06687

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00575	0.00631	0.03023
	(!B * !X)	0.00199	0.00253	0.02647
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00553	0.00615	0.02976
	(!B * !X)	0.00203	0.00263	0.02625
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00692	0.00760	0.03245
	(!B * !X)	0.00292	0.00358	0.02844

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00001	0.00122	0.02540
	(!B * !X)	0.00377	0.00500	0.02917
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00025	0.00144	0.02529
	(!B * !X)	0.00376	0.00496	0.02880
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00051	0.00158	0.02639
	(!B * !X)	0.00453	0.00562	0.03041

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00128	0.00129	0.00128
	(A_N * !X)	-0.00158	-0.00159	-0.00158
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00156	0.00158	0.00157
	(A_N * !X)	-0.00179	-0.00179	-0.00179
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00275	0.00276	0.00275
	(A_N * !X)	-0.00319	-0.00320	-0.00319

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00120	-0.00128	-0.00128
	(A_N * !X)	0.00164	0.00162	0.00159
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00150	-0.00157	-0.00156
	(A_N * !X)	0.00186	0.00183	0.00180
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00263	-0.00275	-0.00275
	(A_N * !X)	0.00328	0.00324	0.00321

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00247	0.00241	1.05872
sky130_fd_sc_hs__and2_2	0.00268	0.00295	2.03793
sky130_fd_sc_hs__and2_4	0.00436	0.00484	3.98576

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.19172	0.59219
sky130_fd_sc_hs__and2_2	0.00000	0.15279	0.28171
sky130_fd_sc_hs__and2_4	0.00000	0.46586	1.19677

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)	0.06593	0.57232	6.47361
	B->X (RR)	0.07098	0.57767	6.37736
sky130_fd_sc_hs__and2_2	A->X (RR)	0.06838	0.49529	6.38361
	B->X (RR)	0.07358	0.49609	6.30447
sky130_fd_sc_hs__and2_4	A->X (RR)	0.06754	0.41720	6.44872
	B->X (RR)	0.07479	0.42317	6.41882

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.07305	0.48441	4.30228
	B->X (FF)	0.08363	0.51333	4.39353
sky130_fd_sc_hs__and2_2	A->X (FF)	0.08052	0.48946	4.40164
	B->X (FF)	0.09238	0.51607	4.49354
sky130_fd_sc_hs__and2_4	A->X (FF)	0.08739	0.46493	4.43771
	B->X (FF)	0.09707	0.48619	4.48617

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00681	0.00755	0.03288
	A	0.00313	0.00386	0.02931
	B	0.00747	0.00770	0.02535
	B	0.00315	0.00337	0.02119
sky130_fd_sc_hs__and2_2	A	0.00934	0.01009	0.03285
	A	0.00533	0.00610	0.02922
	B	0.01052	0.01080	0.02639
	B	0.00540	0.00569	0.02168
sky130_fd_sc_hs__and2_4	A	0.01724	0.01926	0.06931
	A	0.01088	0.01292	0.06356
	B	0.01948	0.02080	0.06220
	B	0.01083	0.01215	0.05420

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00257	0.00414	0.02634
	A	0.00627	0.00777	0.02975
	B	0.00327	0.00454	0.02562
	B	0.00755	0.00881	0.02986
sky130_fd_sc_hs__and2_2	A	0.00517	0.00701	0.02879
	A	0.00919	0.01080	0.03165
	B	0.00549	0.00693	0.02825
	B	0.01055	0.01186	0.03194
sky130_fd_sc_hs__and2_4	A	0.00986	0.01346	0.06440
	A	0.01620	0.01974	0.06753
	B	0.01040	0.01360	0.06186
	B	0.01896	0.02207	0.06902

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00072	0.00072	0.00070
	(!B * !X)	-0.00166	-0.00167	-0.00169
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00052	0.00052	0.00050
	(!B * !X)	-0.00195	-0.00195	-0.00198
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00078	0.00078	0.00074
	(!B * !X)	-0.00323	-0.00323	-0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00070	-0.00069	-0.00069
	(!B * !X)	0.00170	0.00169	0.00170
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00049	-0.00050	-0.00049
	(!B * !X)	0.00198	0.00202	0.00199
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00072	-0.00073	-0.00072
	(!B * !X)	0.00330	0.00336	0.00330

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00114	0.00115	0.00113
	(!A * !X)	-0.00160	-0.00160	-0.00159
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00131	0.00132	0.00131
	(!A * !X)	-0.00192	-0.00193	-0.00192
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00266	0.00268	0.00267
	(!A * !X)	-0.00296	-0.00297	-0.00296

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00107	-0.00114	-0.00113
	(!A * !X)	0.00165	0.00162	0.00160
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00122	-0.00132	-0.00131
	(!A * !X)	0.00198	0.00196	0.00193
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00251	-0.00268	-0.00267
	(!A * !X)	0.00307	0.00300	0.00297

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00224	0.00236	0.00235	1.04971
sky130_fd_sc_hs__and3b_2	0.00232	0.00283	0.00271	1.82622
sky130_fd_sc_hs__and3b_4	0.00259	0.00484	0.00497	3.98872

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3b_1	0.00000	0.30831	0.88874
sky130_fd_sc_hs__and3b_2	0.00000	0.29528	0.41992
sky130_fd_sc_hs__and3b_4	0.00000	0.36695	0.84118

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)	0.13778	0.79089	8.18718
	B->X (RR)	0.09214	0.62148	6.56899
	C->X (RR)	0.09672	0.61294	6.44038
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.15190	0.72195	8.02395
	B->X (RR)	0.09857	0.55127	6.35975
	C->X (RR)	0.10325	0.53854	6.19622
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.16849	0.69076	8.43487
	B->X (RR)	0.11420	0.50293	6.74858
	C->X (RR)	0.11845	0.47457	6.58659

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)	0.10872	0.34456	2.15879
	B->X (FF)	0.09276	0.52718	4.31117
	C->X (FF)	0.09826	0.54328	4.37583
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.11634	0.31798	1.88211
	B->X (FF)	0.09764	0.51669	4.13229
	C->X (FF)	0.11024	0.54467	4.23676
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.11266	0.30166	2.19738
	B->X (FF)	0.09276	0.48627	4.44597
	C->X (FF)	0.09904	0.50344	4.54211

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	0.00713	0.00853	0.03407
	A_N	0.00991	0.01134	0.03691
	B	0.00823	0.00854	0.03038
	B	0.00477	0.00508	0.02700
	C	0.00909	0.00923	0.02611
	C	0.00489	0.00502	0.02205
sky130_fd_sc_hs__and3b_2	A_N	0.01016	0.01170	0.03649
	A_N	0.01309	0.01464	0.03972
	B	0.01153	0.01191	0.03139
	B	0.00748	0.00786	0.02773
	C	0.01249	0.01267	0.02475
	C	0.00762	0.00783	0.02050
sky130_fd_sc_hs__and3b_4	A_N	0.01850	0.02042	0.04702
	A_N	0.02137	0.02334	0.04999
	B	0.02118	0.02191	0.05904
	B	0.01399	0.01474	0.05188
	C	0.02310	0.02370	0.05934
	C	0.01408	0.01480	0.05059

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00947	0.01019	0.03541
	A_N	0.00668	0.00739	0.03255
	B	0.00343	0.00482	0.02719
	B	0.00686	0.00825	0.03020
	C	0.00375	0.00492	0.02689
	C	0.00787	0.00898	0.03068
sky130_fd_sc_hs__and3b_2	A_N	0.01211	0.01305	0.03759
	A_N	0.00917	0.01008	0.03460
	B	0.00544	0.00705	0.02747
	B	0.00948	0.01093	0.03147
	C	0.00591	0.00687	0.02697
	C	0.01067	0.01162	0.03093
sky130_fd_sc_hs__and3b_4	A_N	0.02018	0.02176	0.04851
	A_N	0.01731	0.01888	0.04525
	B	0.01161	0.01428	0.05637
	B	0.01872	0.02136	0.06124
	C	0.01219	0.01513	0.05733
	C	0.02101	0.02376	0.06498

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)	0.00493	0.00568	0.02989
	(B * !C * !X)	0.00157	0.00231	0.02652
	(!B * !X)	0.00492	0.00567	0.02988
	(!B * !X)	0.00157	0.00231	0.02652
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00537	0.00601	0.02975
	(B * !C * !X)	0.00187	0.00248	0.02624
	(!B * !X)	0.00535	0.00598	0.02973
	(!B * !X)	0.00187	0.00250	0.02624
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00739	0.00803	0.03280
	(B * !C * !X)	0.00351	0.00413	0.02891
	(!B * !X)	0.00735	0.00799	0.03276
	(!B * !X)	0.00351	0.00413	0.02891

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)	0.00003	0.00134	0.02570
	(B * !C * !X)	0.00346	0.00478	0.02913
	(!B * !X)	0.00002	0.00133	0.02571
	(!B * !X)	0.00339	0.00471	0.02908
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00016	0.00137	0.02529
	(B * !C * !X)	0.00373	0.00496	0.02886
	(!B * !X)	0.00015	0.00136	0.02530
	(!B * !X)	0.00363	0.00488	0.02880
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00041	0.00143	0.02610
	(B * !C * !X)	0.00444	0.00548	0.03011
	(!B * !X)	0.00043	0.00146	0.02615
	(!B * !X)	0.00429	0.00534	0.03001

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)	0.00128	0.00130	0.00129
	(A_N * C * !X)	-0.00146	-0.00146	-0.00146
	(A_N * !C * !X)	0.00080	0.00080	0.00080
	(A_N * !C * !X)	-0.00148	-0.00147	-0.00147
	(!A_N * !C * !X)	0.00050	0.00049	0.00049
	(!A_N * !C * !X)	-0.00167	-0.00167	-0.00168
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00158	0.00160	0.00159
	(A_N * C * !X)	-0.00173	-0.00174	-0.00173
	(A_N * !C * !X)	0.00101	0.00101	0.00101
	(A_N * !C * !X)	-0.00173	-0.00174	-0.00174
	(!A_N * !C * !X)	0.00066	0.00066	0.00066
	(!A_N * !C * !X)	-0.00197	-0.00197	-0.00198
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00252	0.00254	0.00252
	(A_N * C * !X)	-0.00332	-0.00334	-0.00332
	(A_N * !C * !X)	0.00150	0.00151	0.00151
	(A_N * !C * !X)	-0.00334	-0.00335	-0.00335
	(!A_N * !C * !X)	0.00106	0.00107	0.00108
	(!A_N * !C * !X)	-0.00354	-0.00355	-0.00355

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)	-0.00119	-0.00128	-0.00129
	(A_N * C * !X)	0.00154	0.00148	0.00147
	(A_N * !C * !X)	-0.00080	-0.00080	-0.00080
	(A_N * !C * !X)	0.00155	0.00157	0.00150
	(!A_N * !C * !X)	-0.00047	-0.00048	-0.00048
	(!A_N * !C * !X)	0.00170	0.00173	0.00169
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00148	-0.00158	-0.00159
	(A_N * C * !X)	0.00182	0.00176	0.00175
	(A_N * !C * !X)	-0.00101	-0.00101	-0.00101
	(A_N * !C * !X)	0.00183	0.00185	0.00177
	(!A_N * !C * !X)	-0.00063	-0.00064	-0.00064
	(!A_N * !C * !X)	0.00200	0.00204	0.00199
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00229	-0.00252	-0.00252
	(A_N * C * !X)	0.00350	0.00337	0.00333
	(A_N * !C * !X)	-0.00150	-0.00151	-0.00151
	(A_N * !C * !X)	0.00353	0.00356	0.00340
	(!A_N * !C * !X)	-0.00101	-0.00102	-0.00104
	(!A_N * !C * !X)	0.00365	0.00370	0.00360

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)	0.00112	0.00113	0.00113
	(A_N * B * !X)	-0.00152	-0.00152	-0.00152
	(A_N * !B * !X)	0.00114	0.00115	0.00114
	(A_N * !B * !X)	-0.00153	-0.00153	-0.00153
	(!A_N * !B * !X)	0.00114	0.00115	0.00114
	(!A_N * !B * !X)	-0.00153	-0.00153	-0.00153
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00139	0.00140	0.00140
	(A_N * B * !X)	-0.00173	-0.00173	-0.00173
	(A_N * !B * !X)	0.00142	0.00144	0.00143
	(A_N * !B * !X)	-0.00173	-0.00174	-0.00173
	(!A_N * !B * !X)	0.00142	0.00143	0.00142
	(!A_N * !B * !X)	-0.00173	-0.00174	-0.00173
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00240	0.00241	0.00239
	(A_N * B * !X)	-0.00344	-0.00345	-0.00343
	(A_N * !B * !X)	0.00238	0.00240	0.00240
	(A_N * !B * !X)	-0.00342	-0.00344	-0.00344
	(!A_N * !B * !X)	0.00240	0.00241	0.00240
	(!A_N * !B * !X)	-0.00344	-0.00345	-0.00344

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)	-0.00106	-0.00113	-0.00113
	(A_N * B * !X)	0.00153	0.00155	0.00153
	(A_N * !B * !X)	-0.00111	-0.00114	-0.00114
	(A_N * !B * !X)	0.00154	0.00155	0.00153
	(!A_N * !B * !X)	-0.00110	-0.00115	-0.00114
	(!A_N * !B * !X)	0.00155	0.00155	0.00153
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00133	-0.00140	-0.00140
	(A_N * B * !X)	0.00174	0.00176	0.00174
	(A_N * !B * !X)	-0.00138	-0.00142	-0.00143
	(A_N * !B * !X)	0.00175	0.00176	0.00174
	(!A_N * !B * !X)	-0.00137	-0.00143	-0.00142
	(!A_N * !B * !X)	0.00176	0.00176	0.00174
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00224	-0.00238	-0.00239
	(A_N * B * !X)	0.00345	0.00345	0.00345
	(A_N * !B * !X)	-0.00230	-0.00240	-0.00240
	(A_N * !B * !X)	0.00344	0.00348	0.00345
	(!A_N * !B * !X)	-0.00228	-0.00241	-0.00240
	(!A_N * !B * !X)	0.00347	0.00348	0.00345

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00254	0.00234	0.00231	1.08716
sky130_fd_sc_hs__and3_2	0.00251	0.00231	0.00234	2.08410
sky130_fd_sc_hs__and3_4	0.00458	0.00444	0.00459	3.93883

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.16003	0.88519
sky130_fd_sc_hs__and3_2	0.00000	0.20708	0.89138
sky130_fd_sc_hs__and3_4	0.00000	0.41415	1.78276

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)	0.08105	0.59549	6.50682
	B->X (RR)	0.08783	0.60726	6.49772
	C->X (RR)	0.09170	0.59945	6.41229
sky130_fd_sc_hs__and3_2	A->X (RR)	0.09147	0.54487	6.60161
	B->X (RR)	0.09816	0.54926	6.59321
	C->X (RR)	0.10194	0.53516	6.45869
sky130_fd_sc_hs__and3_4	A->X (RR)	0.09903	0.49026	6.69146
	B->X (RR)	0.10901	0.50041	6.69128
	C->X (RR)	0.11349	0.47150	6.51338

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.08058	0.50008	4.33106
	B->X (FF)	0.09174	0.52799	4.40273
	C->X (FF)	0.09398	0.54086	4.45187
sky130_fd_sc_hs__and3_2	A->X (FF)	0.09781	0.51488	4.37962
	B->X (FF)	0.10833	0.53916	4.45328
	C->X (FF)	0.11330	0.55323	4.51179
sky130_fd_sc_hs__and3_4	A->X (FF)	0.09085	0.47157	4.34142
	B->X (FF)	0.10193	0.49757	4.40502
	C->X (FF)	0.10995	0.51819	4.51526

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00762	0.00823	0.03225
	A	0.00374	0.00436	0.02849
	B	0.00807	0.00836	0.03019
	B	0.00376	0.00406	0.02600
	C	0.00892	0.00908	0.02867
	C	0.00373	0.00389	0.02365
sky130_fd_sc_hs__and3_2	A	0.01010	0.01077	0.03399
	A	0.00624	0.00692	0.03026
	B	0.01052	0.01100	0.03197
	B	0.00625	0.00674	0.02784
	C	0.01142	0.01175	0.02813
	C	0.00624	0.00659	0.02325
sky130_fd_sc_hs__and3_4	A	0.01893	0.02041	0.06582
	A	0.01181	0.01334	0.05882
	B	0.02066	0.02161	0.06278
	B	0.01188	0.01285	0.05413
	C	0.02258	0.02342	0.06179
	C	0.01188	0.01282	0.05156

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00244	0.00379	0.02627
	A	0.00632	0.00766	0.02981
	B	0.00336	0.00482	0.02673
	B	0.00762	0.00898	0.03067
	C	0.00370	0.00497	0.02723
	C	0.00878	0.00998	0.03222
sky130_fd_sc_hs__and3_2	A	0.00473	0.00632	0.02910
	A	0.00861	0.01015	0.03217
	B	0.00567	0.00748	0.02967
	B	0.00989	0.01153	0.03324
	C	0.00593	0.00717	0.02879
	C	0.01099	0.01222	0.03377
sky130_fd_sc_hs__and3_4	A	0.01016	0.01315	0.05830
	A	0.01728	0.02026	0.06511
	B	0.01172	0.01453	0.05845
	B	0.02037	0.02307	0.06704
	C	0.01231	0.01498	0.06025
	C	0.02272	0.02539	0.07061

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00077	0.00078	0.00074
	(B * !C * !X)	-0.00161	-0.00163	-0.00168
	(!B * !X)	0.00077	0.00078	0.00076
	(!B * !X)	-0.00165	-0.00166	-0.00169
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00078	0.00079	0.00076
	(B * !C * !X)	-0.00158	-0.00160	-0.00166
	(!B * !X)	0.00080	0.00080	0.00078
	(!B * !X)	-0.00163	-0.00164	-0.00166
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00089	0.00090	0.00082
	(B * !C * !X)	-0.00326	-0.00330	-0.00344
	(!B * !X)	0.00093	0.00093	0.00088
	(!B * !X)	-0.00338	-0.00338	-0.00346

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00075	-0.00074	-0.00074
	(B * !C * !X)	0.00169	0.00168	0.00169
	(!B * !X)	-0.00076	-0.00075	-0.00075
	(!B * !X)	0.00169	0.00169	0.00169
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00077	-0.00077	-0.00076
	(B * !C * !X)	0.00167	0.00169	0.00166
	(!B * !X)	-0.00078	-0.00078	-0.00077
	(!B * !X)	0.00167	0.00169	0.00167
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00082	-0.00083	-0.00082
	(B * !C * !X)	0.00347	0.00353	0.00347
	(!B * !X)	-0.00085	-0.00086	-0.00085
	(!B * !X)	0.00347	0.00353	0.00348

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00048	0.00048	0.00048
	(A * !C * !X)	-0.00146	-0.00146	-0.00145
	(!A * C * !X)	0.00110	0.00110	0.00110
	(!A * C * !X)	-0.00146	-0.00146	-0.00146
	(!A * !C * !X)	0.00058	0.00058	0.00058
	(!A * !C * !X)	-0.00147	-0.00147	-0.00146
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00046	0.00046	0.00047
	(A * !C * !X)	-0.00143	-0.00143	-0.00142
	(!A * C * !X)	0.00110	0.00110	0.00110
	(!A * C * !X)	-0.00143	-0.00144	-0.00143
	(!A * !C * !X)	0.00056	0.00055	0.00055
	(!A * !C * !X)	-0.00144	-0.00144	-0.00144
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00110	0.00111	0.00113
	(A * !C * !X)	-0.00283	-0.00284	-0.00283
	(!A * C * !X)	0.00242	0.00244	0.00242
	(!A * C * !X)	-0.00285	-0.00285	-0.00284
	(!A * !C * !X)	0.00132	0.00134	0.00133
	(!A * !C * !X)	-0.00286	-0.00289	-0.00286

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00045	-0.00046	-0.00046
	(A * !C * !X)	0.00149	0.00152	0.00147
	(!A * C * !X)	-0.00101	-0.00110	-0.00110
	(!A * C * !X)	0.00154	0.00148	0.00147
	(!A * !C * !X)	-0.00058	-0.00058	-0.00058
	(!A * !C * !X)	0.00154	0.00156	0.00148
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00045	-0.00045	-0.00045
	(A * !C * !X)	0.00148	0.00149	0.00144
	(!A * C * !X)	-0.00100	-0.00110	-0.00110
	(!A * C * !X)	0.00150	0.00145	0.00144
	(!A * !C * !X)	-0.00056	-0.00055	-0.00055
	(!A * !C * !X)	0.00152	0.00153	0.00146
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00104	-0.00107	-0.00108
	(A * !C * !X)	0.00294	0.00299	0.00288
	(!A * C * !X)	-0.00218	-0.00242	-0.00242
	(!A * C * !X)	0.00302	0.00288	0.00285
	(!A * !C * !X)	-0.00132	-0.00134	-0.00133
	(!A * !C * !X)	0.00303	0.00306	0.00291

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00113	0.00115	0.00114
	(A * !B * !X)	-0.00150	-0.00151	-0.00150
	(!A * B * !X)	0.00111	0.00112	0.00111
	(!A * B * !X)	-0.00150	-0.00150	-0.00150
	(!A * !B * !X)	0.00114	0.00114	0.00113
	(!A * !B * !X)	-0.00150	-0.00150	-0.00150
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00111	0.00113	0.00112
	(A * !B * !X)	-0.00151	-0.00152	-0.00151
	(!A * B * !X)	0.00111	0.00111	0.00111
	(!A * B * !X)	-0.00151	-0.00151	-0.00151
	(!A * !B * !X)	0.00111	0.00112	0.00111
	(!A * !B * !X)	-0.00151	-0.00152	-0.00151
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00237	0.00239	0.00238
	(A * !B * !X)	-0.00299	-0.00300	-0.00299
	(!A * B * !X)	0.00235	0.00235	0.00234
	(!A * B * !X)	-0.00300	-0.00300	-0.00300
	(!A * !B * !X)	0.00237	0.00237	0.00238
	(!A * !B * !X)	-0.00299	-0.00299	-0.00299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00110	-0.00114	-0.00114
	(A * !B * !X)	0.00151	0.00152	0.00151
	(!A * B * !X)	-0.00104	-0.00112	-0.00111
	(!A * B * !X)	0.00150	0.00152	0.00151
	(!A * !B * !X)	-0.00110	-0.00114	-0.00113
	(!A * !B * !X)	0.00151	0.00152	0.00151
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00108	-0.00112	-0.00112
	(A * !B * !X)	0.00152	0.00153	0.00152
	(!A * B * !X)	-0.00102	-0.00111	-0.00111
	(!A * B * !X)	0.00151	0.00153	0.00152
	(!A * !B * !X)	-0.00109	-0.00112	-0.00111
	(!A * !B * !X)	0.00152	0.00153	0.00152
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00227	-0.00239	-0.00238
	(A * !B * !X)	0.00300	0.00303	0.00301
	(!A * B * !X)	-0.00218	-0.00235	-0.00234
	(!A * B * !X)	0.00301	0.00304	0.00301
	(!A * !B * !X)	-0.00228	-0.00237	-0.00238
	(!A * !B * !X)	0.00299	0.00303	0.00301

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00229	0.00232	0.00244	0.00239	0.96770
sky130_fd_sc_hs__and4bb_2	0.00232	0.00221	0.00268	0.00273	2.02555
sky130_fd_sc_hs__and4bb_4	0.00251	0.00266	0.00496	0.00481	3.85265

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4bb_1	0.00000	0.42201	1.18529
sky130_fd_sc_hs__and4bb_2	0.00000	0.43194	0.69260
sky130_fd_sc_hs__and4bb_4	0.00000	0.41478	1.11894

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)	0.16551	0.84473	8.26401
	B_N->X (FR)	0.17202	0.84883	8.22766
	C->X (RR)	0.12450	0.67763	6.67687
	D->X (RR)	0.12826	0.66837	6.60617
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.16192	0.72933	8.17181
	B_N->X (FR)	0.17813	0.75065	8.20585
	C->X (RR)	0.12721	0.58159	6.60540
	D->X (RR)	0.13232	0.56905	6.46760
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.20074	0.73922	8.38182
	B_N->X (FR)	0.22308	0.76719	8.42506
	C->X (RR)	0.15714	0.54417	6.69488
	D->X (RR)	0.16152	0.52366	6.53688

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)	0.11552	0.35458	2.09108
	B_N->X (RF)	0.12106	0.36231	2.08978
	C->X (FF)	0.10376	0.55029	4.28779
	D->X (FF)	0.11177	0.57095	4.36530
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.11820	0.33500	2.29583
	B_N->X (RF)	0.13094	0.35818	2.37003
	C->X (FF)	0.10950	0.56043	4.60150
	D->X (FF)	0.11754	0.57718	4.67980
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.12704	0.32060	2.16505
	B_N->X (RF)	0.13115	0.33121	2.19429
	C->X (FF)	0.10073	0.50647	4.42373
	D->X (FF)	0.10756	0.52614	4.52349

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	0.00766	0.00906	0.03305
	A_N	0.01052	0.01193	0.03595
	B_N	0.00832	0.00986	0.03458
	B_N	0.01155	0.01310	0.03785
	C	0.00938	0.00973	0.03093
	C	0.00596	0.00630	0.02753
	D	0.01016	0.01048	0.03202
	D	0.00608	0.00640	0.02799
sky130_fd_sc_hs__and4bb_2	A_N	0.01035	0.01183	0.03681
	A_N	0.01308	0.01455	0.03967
	B_N	0.01181	0.01302	0.03613
	B_N	0.01463	0.01584	0.03907
	C	0.01275	0.01280	0.03082
	C	0.00879	0.00883	0.02698
	D	0.01381	0.01370	0.02733
	D	0.00893	0.00882	0.02274
sky130_fd_sc_hs__and4bb_4	A_N	0.02103	0.02269	0.04901
	A_N	0.02347	0.02517	0.05790
	B_N	0.02307	0.02466	0.05005
	B_N	0.02596	0.02760	0.05884
	C	0.02509	0.02537	0.06049
	C	0.01770	0.01803	0.05324
	D	0.02669	0.02697	0.05922
	D	0.01773	0.01810	0.05070

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.01019	0.01064	0.03267
	A_N	0.00733	0.00776	0.02971
	B_N	0.01046	0.01123	0.03622
	B_N	0.00722	0.00799	0.03293
	C	0.00439	0.00588	0.02907
	C	0.00779	0.00921	0.03212
	D	0.00477	0.00604	0.02984
	D	0.00876	0.01001	0.03358
sky130_fd_sc_hs__and4bb_2	A_N	0.01203	0.01290	0.03763
	A_N	0.00930	0.01017	0.03481
	B_N	0.01265	0.01357	0.03586
	B_N	0.00982	0.01070	0.03302
	C	0.00626	0.00774	0.02815
	C	0.01020	0.01163	0.03132
	D	0.00666	0.00771	0.02806
	D	0.01142	0.01246	0.03180
sky130_fd_sc_hs__and4bb_4	A_N	0.02022	0.02193	0.04858
	A_N	0.01779	0.01945	0.04557
	B_N	0.02183	0.02344	0.05031
	B_N	0.01892	0.02053	0.04674
	C	0.01201	0.01480	0.05438
	C	0.01935	0.02185	0.06084
	D	0.01314	0.01549	0.05675
	D	0.02187	0.02397	0.06391

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)	0.00494	0.00560	0.02937
	(B_N * !X)	0.00171	0.00237	0.02614
	(!B_N * C * !D * !X)	0.00516	0.00582	0.02959
	(!B_N * C * !D * !X)	0.00192	0.00258	0.02635
	(!B_N * !C * !X)	0.00516	0.00582	0.02959
	(!B_N * !C * !X)	0.00192	0.00258	0.02636
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00503	0.00569	0.02980
	(B_N * !X)	0.00176	0.00242	0.02653
	(!B_N * C * !D * !X)	0.00523	0.00589	0.03001
	(!B_N * C * !D * !X)	0.00195	0.00261	0.02673
	(!B_N * !C * !X)	0.00523	0.00589	0.03001
	(!B_N * !C * !X)	0.00195	0.00261	0.02673
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00699	0.00769	0.03204
	(B_N * !X)	0.00363	0.00428	0.02865
	(!B_N * C * !D * !X)	0.00742	0.00810	0.03245
	(!B_N * C * !D * !X)	0.00402	0.00466	0.02903
	(!B_N * !C * !X)	0.00741	0.00809	0.03244
	(!B_N * !C * !X)	0.00402	0.00466	0.02904

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)	0.00038	0.00164	0.02559
	(B_N * !X)	0.00361	0.00487	0.02882
	(!B_N * C * !D * !X)	0.00019	0.00144	0.02537
	(!B_N * C * !D * !X)	0.00351	0.00477	0.02868
	(!B_N * !C * !X)	0.00018	0.00143	0.02536
	(!B_N * !C * !X)	0.00343	0.00469	0.02862
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00028	0.00153	0.02584
	(B_N * !X)	0.00354	0.00481	0.02911
	(!B_N * C * !D * !X)	0.00010	0.00136	0.02563
	(!B_N * C * !D * !X)	0.00347	0.00474	0.02900
	(!B_N * !C * !X)	0.00009	0.00134	0.02563
	(!B_N * !C * !X)	0.00338	0.00465	0.02893
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00119	0.00220	0.02648
	(B_N * !X)	0.00459	0.00560	0.02987
	(!B_N * C * !D * !X)	0.00083	0.00183	0.02609
	(!B_N * C * !D * !X)	0.00442	0.00543	0.02964
	(!B_N * !C * !X)	0.00078	0.00179	0.02607
	(!B_N * !C * !X)	0.00423	0.00525	0.02950

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)	0.00498	0.00553	0.02932
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00138	0.00193	0.02572
	(!C * !X)	0.00506	0.00571	0.02961
	(!C * !X)	0.00138	0.00201	0.02592
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00504	0.00555	0.02915
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00166	0.00217	0.02577
	(!C * !X)	0.00513	0.00575	0.02950
	(!C * !X)	0.00165	0.00227	0.02602
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00700	0.00737	0.03137
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00317	0.00351	0.02752
	(!C * !X)	0.00715	0.00770	0.03197
	(!C * !X)	0.00315	0.00368	0.02795

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)	0.00098	0.00222	0.02637
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00458	0.00584	0.02997
	(!C * !X)	0.00050	0.00175	0.02598
	(!C * !X)	0.00416	0.00542	0.02965
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00142	0.00264	0.02669
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00478	0.00602	0.03006
	(!C * !X)	0.00084	0.00206	0.02620
	(!C * !X)	0.00429	0.00551	0.02965
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00290	0.00389	0.02812
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00675	0.00774	0.03197
	(!C * !X)	0.00186	0.00285	0.02723
	(!C * !X)	0.00585	0.00685	0.03122

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)**	0.00145	0.00146	0.00145
	(A_N * B_N * D * !X)	-0.00143	-0.00143	-0.00142
	(A_N * B_N * !D * !X)	0.00102	0.00103	0.00102
	(A_N * B_N * !D * !X)	-0.00142	-0.00143	-0.00142
	(A_N * !B_N * D * !X)	0.00111	0.00112	0.00111
	(A_N * !B_N * D * !X)	-0.00176	-0.00177	-0.00175
	(A_N * !B_N * !D * !X)	0.00065	0.00065	0.00064
	(A_N * !B_N * !D * !X)	-0.00190	-0.00190	-0.00189
	(!A_N * B_N * D * !X)	0.00145	0.00144	0.00144
	(!A_N * B_N * D * !X)	-0.00143	-0.00142	-0.00142
	(!A_N * B_N * !D * !X)	0.00098	0.00099	0.00098
	(!A_N * B_N * !D * !X)	-0.00143	-0.00143	-0.00142
	(!A_N * !B_N * !D * !X)	0.00053	0.00054	0.00053
	(!A_N * !B_N * !D * !X)	-0.00176	-0.00177	-0.00176
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00153	0.00155	0.00154
	(A_N * B_N * D * !X)	-0.00167	-0.00168	-0.00167
	(A_N * B_N * !D * !X)	0.00103	0.00104	0.00103
	(A_N * B_N * !D * !X)	-0.00168	-0.00168	-0.00167
	(A_N * !B_N * D * !X)	0.00128	0.00129	0.00128
	(A_N * !B_N * D * !X)	-0.00195	-0.00194	-0.00193
	(A_N * !B_N * !D * !X)	0.00071	0.00072	0.00071
	(A_N * !B_N * !D * !X)	-0.00210	-0.00211	-0.00210
	(!A_N * B_N * D * !X)	0.00153	0.00153	0.00154
	(!A_N * B_N * D * !X)	-0.00167	-0.00167	-0.00167
	(!A_N * B_N * !D * !X)	0.00099	0.00100	0.00099
	(!A_N * B_N * !D * !X)	-0.00168	-0.00169	-0.00167
	(!A_N * !B_N * !D * !X)	0.00058	0.00059	0.00059
	(!A_N * !B_N * !D * !X)	-0.00195	-0.00196	-0.00195

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00257	0.00259	0.00258
	(A_N * B_N * D * !X)	-0.00346	-0.00347	-0.00347
	(A_N * B_N * !D * !X)	0.00163	0.00166	0.00164
	(A_N * B_N * !D * !X)	-0.00347	-0.00351	-0.00348
	(A_N * !B_N * D * !X)	0.00245	0.00245	0.00245
	(A_N * !B_N * D * !X)	-0.00364	-0.00363	-0.00361
	(A_N * !B_N * !D * !X)	0.00141	0.00143	0.00142
	(A_N * !B_N * !D * !X)	-0.00393	-0.00396	-0.00394
	(!A_N * B_N * D * !X)	0.00257	0.00261	0.00258
	(!A_N * B_N * D * !X)	-0.00346	-0.00349	-0.00347
	(!A_N * B_N * !D * !X)	0.00157	0.00158	0.00158
	(!A_N * B_N * !D * !X)	-0.00348	-0.00349	-0.00349
	(!A_N * !B_N * !D * !X)	0.00118	0.00120	0.00119
	(!A_N * !B_N * !D * !X)	-0.00363	-0.00367	-0.00365

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)**	-0.00142	-0.00144	-0.00144
	(A_N * B_N * D * !X)	0.00144	0.00145	0.00144
	(A_N * B_N * !D * !X)	-0.00102	-0.00103	-0.00102
	(A_N * B_N * !D * !X)	0.00143	0.00145	0.00144
	(A_N * !B_N * D * !X)	-0.00103	-0.00112	-0.00111
	(A_N * !B_N * D * !X)	0.00182	0.00177	0.00175
	(A_N * !B_N * !D * !X)	-0.00065	-0.00065	-0.00064
	(A_N * !B_N * !D * !X)	0.00194	0.00195	0.00194
	(!A_N * B_N * D * !X)	-0.00141	-0.00144	-0.00144
	(!A_N * B_N * D * !X)	0.00146	0.00145	0.00143
	(!A_N * B_N * !D * !X)	-0.00098	-0.00099	-0.00098
	(!A_N * B_N * !D * !X)	0.00149	0.00151	0.00145
	(!A_N * !B_N * !D * !X)	-0.00050	-0.00051	-0.00051
	(!A_N * !B_N * !D * !X)	0.00178	0.00182	0.00178
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00150	-0.00153	-0.00153
	(A_N * B_N * D * !X)	0.00168	0.00170	0.00169
	(A_N * B_N * !D * !X)	-0.00103	-0.00104	-0.00103
	(A_N * B_N * !D * !X)	0.00169	0.00170	0.00169
	(A_N * !B_N * D * !X)	-0.00118	-0.00128	-0.00128
	(A_N * !B_N * D * !X)	0.00203	0.00196	0.00193
	(A_N * !B_N * !D * !X)	-0.00071	-0.00072	-0.00071
	(A_N * !B_N * !D * !X)	0.00213	0.00217	0.00216
	(!A_N * B_N * D * !X)	-0.00149	-0.00153	-0.00153
	(!A_N * B_N * D * !X)	0.00170	0.00170	0.00168
	(!A_N * B_N * !D * !X)	-0.00099	-0.00100	-0.00099
	(!A_N * B_N * !D * !X)	0.00175	0.00177	0.00170
	(!A_N * !B_N * !D * !X)	-0.00055	-0.00056	-0.00056
	(!A_N * !B_N * !D * !X)	0.00197	0.00201	0.00197

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00252	-0.00259	-0.00258
	(A_N * B_N * D * !X)	0.00347	0.00351	0.00348
	(A_N * B_N * !D * !X)	-0.00163	-0.00166	-0.00164
	(A_N * B_N * !D * !X)	0.00352	0.00354	0.00350
	(A_N * !B_N * D * !X)	-0.00225	-0.00245	-0.00245
	(A_N * !B_N * D * !X)	0.00381	0.00366	0.00361
	(A_N * !B_N * !D * !X)	-0.00141	-0.00143	-0.00142
	(A_N * !B_N * !D * !X)	0.00398	0.00405	0.00404
	(!A_N * B_N * D * !X)	-0.00249	-0.00259	-0.00258
	(!A_N * B_N * D * !X)	0.00352	0.00351	0.00348
	(!A_N * B_N * !D * !X)	-0.00157	-0.00158	-0.00158
	(!A_N * B_N * !D * !X)	0.00364	0.00365	0.00353
	(!A_N * !B_N * !D * !X)	-0.00113	-0.00114	-0.00112
	(!A_N * !B_N * !D * !X)	0.00373	0.00378	0.00371

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)	0.00131	0.00133	0.00131
	(A_N * B_N * C * !X)	-0.00138	-0.00140	-0.00139
	(A_N * !C * !X)	0.00131	0.00133	0.00131
	(A_N * !C * !X)	-0.00139	-0.00139	-0.00139
	(A_N * !B_N * C * !X)	0.00114	0.00115	0.00114
	(A_N * !B_N * C * !X)	-0.00158	-0.00158	-0.00158
	(!A_N * B_N * C * !X)	0.00131	0.00132	0.00131
	(!A_N * B_N * C * !X)	-0.00138	-0.00140	-0.00139
	(!A_N * B_N * !C * !X)	0.00131	0.00131	0.00131
	(!A_N * B_N * !C * !X)	-0.00139	-0.00139	-0.00139
	(!A_N * !B_N * !C * !X)	0.00115	0.00116	0.00115
	(!A_N * !B_N * !C * !X)	-0.00155	-0.00156	-0.00155

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00138	0.00140	0.00138
	(A_N * B_N * C * !X)	-0.00177	-0.00178	-0.00177
	(A_N * !C * !X)	0.00138	0.00140	0.00138
	(A_N * !C * !X)	-0.00177	-0.00178	-0.00177
	(A_N * !B_N * C * !X)	0.00128	0.00129	0.00128
	(A_N * !B_N * C * !X)	-0.00187	-0.00188	-0.00187
	(!A_N * B_N * C * !X)	0.00137	0.00138	0.00137
	(!A_N * B_N * C * !X)	-0.00177	-0.00178	-0.00177
	(!A_N * B_N * !C * !X)	0.00138	0.00138	0.00138
	(!A_N * B_N * !C * !X)	-0.00177	-0.00177	-0.00178
	(!A_N * !B_N * !C * !X)	0.00132	0.00133	0.00132
	(!A_N * !B_N * !C * !X)	-0.00184	-0.00184	-0.00184
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00232	0.00235	0.00232
	(A_N * B_N * C * !X)	-0.00344	-0.00345	-0.00343
	(A_N * !C * !X)	0.00234	0.00236	0.00234
	(A_N * !C * !X)	-0.00343	-0.00345	-0.00343
	(A_N * !B_N * C * !X)	0.00229	0.00231	0.00229
	(A_N * !B_N * C * !X)	-0.00351	-0.00352	-0.00350
	(!A_N * B_N * C * !X)	0.00232	0.00233	0.00232
	(!A_N * B_N * C * !X)	-0.00344	-0.00344	-0.00343
	(!A_N * B_N * !C * !X)	0.00234	0.00235	0.00234
	(!A_N * B_N * !C * !X)	-0.00344	-0.00345	-0.00343
	(!A_N * !B_N * !C * !X)	0.00234	0.00235	0.00234
	(!A_N * !B_N * !C * !X)	-0.00344	-0.00345	-0.00344

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)**	-0.00123	-0.00131	-0.00131
	(A_N * B_N * C * !X)	0.00139	0.00142	0.00140
	(A_N * !C * !X)	-0.00128	-0.00131	-0.00131
	(A_N * !C * !X)	0.00141	0.00140	0.00140
	(A_N * !B_N * C * !X)	-0.00105	-0.00115	-0.00114
	(A_N * !B_N * C * !X)	0.00163	0.00160	0.00158
	(!A_N * B_N * C * !X)	-0.00123	-0.00131	-0.00131
	(!A_N * B_N * C * !X)	0.00139	0.00141	0.00140
	(!A_N * B_N * !C * !X)	-0.00128	-0.00131	-0.00131
	(!A_N * B_N * !C * !X)	0.00141	0.00140	0.00140
	(!A_N * !B_N * !C * !X)	-0.00111	-0.00116	-0.00115
	(!A_N * !B_N * !C * !X)	0.00157	0.00157	0.00156
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00129	-0.00138	-0.00138
	(A_N * B_N * C * !X)	0.00179	0.00181	0.00179
	(A_N * !C * !X)	-0.00132	-0.00138	-0.00138
	(A_N * !C * !X)	0.00178	0.00180	0.00179
	(A_N * !B_N * C * !X)	-0.00119	-0.00129	-0.00128
	(A_N * !B_N * C * !X)	0.00192	0.00190	0.00187
	(!A_N * B_N * C * !X)	-0.00129	-0.00138	-0.00137
	(!A_N * B_N * C * !X)	0.00178	0.00181	0.00179
	(!A_N * B_N * !C * !X)	-0.00133	-0.00138	-0.00138
	(!A_N * B_N * !C * !X)	0.00177	0.00180	0.00179
	(!A_N * !B_N * !C * !X)	-0.00126	-0.00133	-0.00132
	(!A_N * !B_N * !C * !X)	0.00184	0.00187	0.00184

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00217	-0.00232	-0.00232
	(A_N * B_N * C * !X)	0.00344	0.00349	0.00345
	(A_N * !C * !X)	-0.00223	-0.00233	-0.00234
	(A_N * !C * !X)	0.00344	0.00347	0.00345
	(A_N * !B_N * C * !X)	-0.00212	-0.00230	-0.00229
	(A_N * !B_N * C * !X)	0.00358	0.00355	0.00350
	(!A_N * B_N * C * !X)	-0.00217	-0.00233	-0.00232
	(!A_N * B_N * C * !X)	0.00345	0.00349	0.00345
	(!A_N * B_N * !C * !X)	-0.00223	-0.00233	-0.00234
	(!A_N * B_N * !C * !X)	0.00344	0.00347	0.00345
	(!A_N * !B_N * !C * !X)	-0.00222	-0.00233	-0.00234
	(!A_N * !B_N * !C * !X)	0.00346	0.00347	0.00345

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00243	0.00256	0.00246	0.00238	1.03539
sky130_fd_sc_hs__and4b_2	0.00225	0.00273	0.00272	0.00280	1.82898
sky130_fd_sc_hs__and4b_4	0.00246	0.00504	0.00542	0.00502	3.44407

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4b_1	0.00000	0.27374	1.18174
sky130_fd_sc_hs__and4b_2	0.00000	0.28367	0.55458
sky130_fd_sc_hs__and4b_4	0.00000	0.34322	1.11050

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)	0.15275	0.80944	8.16704
	B->X (RR)	0.11287	0.66157	6.69270
	C->X (RR)	0.11854	0.65674	6.64528
	D->X (RR)	0.12382	0.64762	6.49762
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.17077	0.75197	8.08690
	B->X (RR)	0.11700	0.58840	6.48496
	C->X (RR)	0.12395	0.58108	6.42986
	D->X (RR)	0.12848	0.56807	6.26351
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.20866	0.76120	8.41109
	B->X (RR)	0.13524	0.55008	6.66799
	C->X (RR)	0.14978	0.54580	6.55216
	D->X (RR)	0.15061	0.53020	6.50778

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)	0.10824	0.35110	2.22226
	B->X (FF)	0.09395	0.53530	4.31203
	C->X (FF)	0.10257	0.55447	4.39410
	D->X (FF)	0.11112	0.57722	4.48524
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.12553	0.33753	1.98066
	B->X (FF)	0.10535	0.53263	4.18994
	C->X (FF)	0.11549	0.55415	4.27306
	D->X (FF)	0.12196	0.56853	4.34117
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.13945	0.33765	1.92302
	B->X (FF)	0.10265	0.49391	4.10998
	C->X (FF)	0.11303	0.51667	4.19531
	D->X (FF)	0.13037	0.55073	4.32300

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	0.00728	0.00859	0.03383
	A_N	0.01000	0.01133	0.03662
	B	0.00872	0.00876	0.02917
	B	0.00471	0.00476	0.02518
	C	0.00960	0.00959	0.03019
	C	0.00490	0.00489	0.02556
	D	0.01027	0.01005	0.02589
	D	0.00488	0.00467	0.02061
sky130_fd_sc_hs__and4b_2	A_N	0.01032	0.01178	0.03513
	A_N	0.01289	0.01434	0.03793
	B	0.01148	0.01177	0.02988
	B	0.00722	0.00752	0.02591
	C	0.01238	0.01259	0.03083
	C	0.00738	0.00758	0.02618
	D	0.01347	0.01353	0.02507
	D	0.00739	0.00744	0.01954
sky130_fd_sc_hs__and4b_4	A_N	0.02098	0.02275	0.04826
	A_N	0.02389	0.02567	0.05618
	B	0.02290	0.02368	0.05865
	B	0.01508	0.01591	0.05114
	C	0.02537	0.02584	0.05546
	C	0.01556	0.01604	0.04605
	D	0.02655	0.02699	0.06194
	D	0.01559	0.01608	0.05148

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00943	0.01001	0.03513
	A_N	0.00671	0.00729	0.03223
	B	0.00346	0.00466	0.02538
	B	0.00747	0.00859	0.02897
	C	0.00367	0.00490	0.02605
	C	0.00829	0.00948	0.03037
	D	0.00429	0.00528	0.02574
	D	0.00953	0.01046	0.03094
sky130_fd_sc_hs__and4b_2	A_N	0.01258	0.01338	0.03522
	A_N	0.01000	0.01077	0.03247
	B	0.00582	0.00711	0.02739
	B	0.01006	0.01131	0.03100
	C	0.00637	0.00772	0.02876
	C	0.01128	0.01262	0.03264
	D	0.00662	0.00761	0.02746
	D	0.01252	0.01339	0.03237
sky130_fd_sc_hs__and4b_4	A_N	0.02171	0.02314	0.04727
	A_N	0.01881	0.02019	0.04413
	B	0.01096	0.01361	0.05362
	B	0.01872	0.02134	0.06063
	C	0.01193	0.01414	0.05400
	C	0.02153	0.02371	0.06245
	D	0.01345	0.01585	0.05665
	D	0.02400	0.02611	0.06594

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)	0.00506	0.00572	0.02991
	(B * C * !D * !X)	0.00142	0.00206	0.02626
	(B * !C * !X)	0.00505	0.00572	0.02991
	(B * !C * !X)	0.00142	0.00206	0.02626
	(!B * !X)	0.00504	0.00571	0.02989
	(!B * !X)	0.00143	0.00207	0.02626
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00562	0.00624	0.02984
	(B * C * !D * !X)	0.00214	0.00275	0.02637
	(B * !C * !X)	0.00561	0.00624	0.02984
	(B * !C * !X)	0.00214	0.00275	0.02637
	(!B * !X)	0.00560	0.00622	0.02982
	(!B * !X)	0.00214	0.00275	0.02637
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00870	0.00927	0.03321
	(B * C * !D * !X)	0.00450	0.00506	0.02902
	(B * !C * !X)	0.00869	0.00926	0.03321
	(B * !C * !X)	0.00450	0.00506	0.02902
	(!B * !X)	0.00863	0.00920	0.03314
	(!B * !X)	0.00450	0.00507	0.02902

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)	0.00012	0.00139	0.02573
	(B * C * !D * !X)	0.00386	0.00515	0.02945
	(B * !C * !X)	0.00009	0.00136	0.02571
	(B * !C * !X)	0.00380	0.00509	0.02942
	(!B * !X)	0.00010	0.00137	0.02573
	(!B * !X)	0.00373	0.00503	0.02937
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00022	0.00143	0.02524
	(B * C * !D * !X)	0.00380	0.00502	0.02880
	(B * !C * !X)	0.00021	0.00142	0.02524
	(B * !C * !X)	0.00374	0.00497	0.02877
	(!B * !X)	0.00020	0.00141	0.02525
	(!B * !X)	0.00366	0.00488	0.02871
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00057	0.00153	0.02535
	(B * C * !D * !X)	0.00499	0.00595	0.02970
	(B * !C * !X)	0.00055	0.00151	0.02535
	(B * !C * !X)	0.00488	0.00584	0.02964
	(!B * !X)	0.00055	0.00151	0.02539
	(!B * !X)	0.00470	0.00566	0.02952

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)**	0.00133	0.00134	0.00134
	(A_N * C * D * !X)	-0.00161	-0.00161	-0.00161
	(A_N * C * !D * !X)	0.00086	0.00087	0.00086
	(A_N * C * !D * !X)	-0.00162	-0.00162	-0.00162
	(A_N * !C * !X)	0.00084	0.00084	0.00083
	(A_N * !C * !X)	-0.00163	-0.00163	-0.00162
	(!A_N * C * !D * !X)	0.00052	0.00052	0.00052
	(!A_N * C * !D * !X)	-0.00180	-0.00180	-0.00182
	(!A_N * !C * !X)	0.00052	0.00052	0.00053
	(!A_N * !C * !X)	-0.00183	-0.00183	-0.00183
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00152	0.00152	0.00153
	(A_N * C * D * !X)	-0.00168	-0.00168	-0.00168
	(A_N * C * !D * !X)	0.00095	0.00095	0.00095
	(A_N * C * !D * !X)	-0.00170	-0.00169	-0.00169
	(A_N * !C * !X)	0.00096	0.00098	0.00097
	(A_N * !C * !X)	-0.00169	-0.00171	-0.00169
	(!A_N * C * !D * !X)	0.00055	0.00055	0.00056
	(!A_N * C * !D * !X)	-0.00190	-0.00191	-0.00194
	(!A_N * !C * !X)	0.00059	0.00059	0.00059
	(!A_N * !C * !X)	-0.00194	-0.00194	-0.00195
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00311	0.00314	0.00312
	(A_N * C * D * !X)	-0.00320	-0.00322	-0.00320
	(A_N * C * !D * !X)	0.00213	0.00215	0.00214
	(A_N * C * !D * !X)	-0.00321	-0.00322	-0.00321
	(A_N * !C * !X)	0.00218	0.00221	0.00219
	(A_N * !C * !X)	-0.00321	-0.00325	-0.00322
	(!A_N * C * !D * !X)	0.00127	0.00129	0.00128
	(!A_N * C * !D * !X)	-0.00374	-0.00378	-0.00380
	(!A_N * !C * !X)	0.00133	0.00135	0.00134
	(!A_N * !C * !X)	-0.00378	-0.00382	-0.00382

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)	-0.00123	-0.00134	-0.00133
	(A_N * C * D * !X)	0.00172	0.00164	0.00162
	(A_N * C * !D * !X)	-0.00086	-0.00087	-0.00086
	(A_N * C * !D * !X)	0.00169	0.00168	0.00163
	(A_N * !C * !X)	-0.00084	-0.00084	-0.00083
	(A_N * !C * !X)	0.00169	0.00171	0.00164
	(!A_N * C * !D * !X)	-0.00049	-0.00050	-0.00050
	(!A_N * C * !D * !X)	0.00186	0.00188	0.00184
	(!A_N * !C * !X)	-0.00050	-0.00051	-0.00051
	(!A_N * !C * !X)	0.00185	0.00189	0.00184
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00142	-0.00152	-0.00152
	(A_N * C * D * !X)	0.00179	0.00171	0.00170
	(A_N * C * !D * !X)	-0.00095	-0.00095	-0.00095
	(A_N * C * !D * !X)	0.00176	0.00175	0.00170
	(A_N * !C * !X)	-0.00096	-0.00098	-0.00097
	(A_N * !C * !X)	0.00179	0.00180	0.00172
	(!A_N * C * !D * !X)	-0.00054	-0.00055	-0.00055
	(!A_N * C * !D * !X)	0.00198	0.00201	0.00196
	(!A_N * !C * !X)	-0.00055	-0.00057	-0.00057
	(!A_N * !C * !X)	0.00198	0.00201	0.00197

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00293	-0.00313	-0.00312
	(A_N * C * D * !X)	0.00337	0.00325	0.00322
	(A_N * C * !D * !X)	-0.00213	-0.00215	-0.00214
	(A_N * C * !D * !X)	0.00334	0.00330	0.00323
	(A_N * !C * !X)	-0.00218	-0.00221	-0.00219
	(A_N * !C * !X)	0.00339	0.00341	0.00327
	(!A_N * C * !D * !X)	-0.00124	-0.00125	-0.00126
	(!A_N * C * !D * !X)	0.00389	0.00392	0.00386
	(!A_N * !C * !X)	-0.00127	-0.00128	-0.00129
	(!A_N * !C * !X)	0.00389	0.00392	0.00386

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)**	0.00135	0.00137	0.00135
	(A_N * B * D * !X)	-0.00145	-0.00146	-0.00145
	(A_N * B * !D * !X)	0.00088	0.00089	0.00089
	(A_N * B * !D * !X)	-0.00145	-0.00146	-0.00146
	(A_N * !B * D * !X)	0.00135	0.00136	0.00135
	(A_N * !B * D * !X)	-0.00145	-0.00145	-0.00145
	(A_N * !B * !D * !X)	0.00088	0.00089	0.00088
	(A_N * !B * !D * !X)	-0.00146	-0.00147	-0.00146
	(!A_N * B * !D * !X)	0.00076	0.00076	0.00076
	(!A_N * B * !D * !X)	-0.00146	-0.00146	-0.00145
	(!A_N * !B * D * !X)	0.00134	0.00135	0.00134
	(!A_N * !B * D * !X)	-0.00146	-0.00147	-0.00147
	(!A_N * !B * !D * !X)	0.00085	0.00085	0.00084
	(!A_N * !B * !D * !X)	-0.00148	-0.00148	-0.00147

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00130	0.00131	0.00131
	(A_N * B * D * !X)	-0.00166	-0.00167	-0.00167
	(A_N * B * !D * !X)	0.00074	0.00074	0.00074
	(A_N * B * !D * !X)	-0.00168	-0.00168	-0.00167
	(A_N * !B * D * !X)	0.00132	0.00133	0.00132
	(A_N * !B * D * !X)	-0.00167	-0.00167	-0.00167
	(A_N * !B * !D * !X)	0.00073	0.00073	0.00073
	(A_N * !B * !D * !X)	-0.00168	-0.00167	-0.00167
	(!A_N * B * !D * !X)	0.00057	0.00058	0.00058
	(!A_N * B * !D * !X)	-0.00168	-0.00170	-0.00168
	(!A_N * !B * D * !X)	0.00131	0.00131	0.00131
	(!A_N * !B * D * !X)	-0.00169	-0.00169	-0.00169
	(!A_N * !B * !D * !X)	0.00067	0.00068	0.00067
	(!A_N * !B * !D * !X)	-0.00169	-0.00170	-0.00169
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00291	0.00294	0.00292
	(A_N * B * D * !X)	-0.00340	-0.00342	-0.00340
	(A_N * B * !D * !X)	0.00195	0.00196	0.00195
	(A_N * B * !D * !X)	-0.00341	-0.00343	-0.00341
	(A_N * !B * D * !X)	0.00292	0.00296	0.00293
	(A_N * !B * D * !X)	-0.00340	-0.00343	-0.00341
	(A_N * !B * !D * !X)	0.00197	0.00199	0.00198
	(A_N * !B * !D * !X)	-0.00341	-0.00342	-0.00341
	(!A_N * B * !D * !X)	0.00164	0.00165	0.00165
	(!A_N * B * !D * !X)	-0.00344	-0.00345	-0.00344
	(!A_N * !B * D * !X)	0.00288	0.00290	0.00288
	(!A_N * !B * D * !X)	-0.00345	-0.00346	-0.00345
	(!A_N * !B * !D * !X)	0.00185	0.00185	0.00185
	(!A_N * !B * !D * !X)	-0.00347	-0.00348	-0.00347

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)	-0.00126	-0.00135	-0.00135
	(A_N * B * D * !X)	0.00147	0.00147	0.00146
	(A_N * B * !D * !X)	-0.00088	-0.00089	-0.00089
	(A_N * B * !D * !X)	0.00147	0.00150	0.00147
	(A_N * !B * D * !X)	-0.00132	-0.00136	-0.00135
	(A_N * !B * D * !X)	0.00146	0.00147	0.00146
	(A_N * !B * !D * !X)	-0.00088	-0.00089	-0.00088
	(A_N * !B * !D * !X)	0.00146	0.00149	0.00147
	(!A_N * B * !D * !X)	-0.00073	-0.00073	-0.00072
	(!A_N * B * !D * !X)	0.00150	0.00151	0.00148
	(!A_N * !B * D * !X)	-0.00129	-0.00135	-0.00134
	(!A_N * !B * D * !X)	0.00149	0.00148	0.00147
	(!A_N * !B * !D * !X)	-0.00085	-0.00085	-0.00084
	(!A_N * !B * !D * !X)	0.00155	0.00156	0.00149
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00120	-0.00131	-0.00131
	(A_N * B * D * !X)	0.00168	0.00168	0.00168
	(A_N * B * !D * !X)	-0.00074	-0.00074	-0.00074
	(A_N * B * !D * !X)	0.00168	0.00170	0.00168
	(A_N * !B * D * !X)	-0.00126	-0.00132	-0.00132
	(A_N * !B * D * !X)	0.00167	0.00169	0.00168
	(A_N * !B * !D * !X)	-0.00073	-0.00073	-0.00073
	(A_N * !B * !D * !X)	0.00168	0.00170	0.00169
	(!A_N * B * !D * !X)	-0.00055	-0.00056	-0.00055
	(!A_N * B * !D * !X)	0.00171	0.00174	0.00170
	(!A_N * !B * D * !X)	-0.00123	-0.00131	-0.00131
	(!A_N * !B * D * !X)	0.00170	0.00170	0.00169
	(!A_N * !B * !D * !X)	-0.00067	-0.00068	-0.00067
	(!A_N * !B * !D * !X)	0.00176	0.00178	0.00172

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00272	-0.00294	-0.00292
	(A_N * B * D * !X)	0.00343	0.00345	0.00342
	(A_N * B * !D * !X)	-0.00195	-0.00196	-0.00195
	(A_N * B * !D * !X)	0.00343	0.00346	0.00342
	(A_N * !B * D * !X)	-0.00280	-0.00296	-0.00293
	(A_N * !B * D * !X)	0.00340	0.00345	0.00342
	(A_N * !B * !D * !X)	-0.00197	-0.00199	-0.00198
	(A_N * !B * !D * !X)	0.00343	0.00346	0.00343
	(!A_N * B * !D * !X)	-0.00160	-0.00162	-0.00161
	(!A_N * B * !D * !X)	0.00351	0.00353	0.00348
	(!A_N * !B * D * !X)	-0.00274	-0.00290	-0.00288
	(!A_N * !B * D * !X)	0.00347	0.00349	0.00346
	(!A_N * !B * !D * !X)	-0.00185	-0.00185	-0.00185
	(!A_N * !B * !D * !X)	0.00357	0.00361	0.00351

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)	0.00111	0.00112	0.00111
	(A_N * B * C * !X)	-0.00158	-0.00159	-0.00158
	(A_N * !C * !X)	0.00115	0.00115	0.00115
	(A_N * !C * !X)	-0.00158	-0.00159	-0.00158
	(A_N * !B * C * !X)	0.00110	0.00111	0.00111
	(A_N * !B * C * !X)	-0.00157	-0.00158	-0.00158
	(!A_N * B * !C * !X)	0.00115	0.00115	0.00114
	(!A_N * B * !C * !X)	-0.00158	-0.00159	-0.00158
	(!A_N * !B * C * !X)	0.00110	0.00111	0.00111
	(!A_N * !B * C * !X)	-0.00158	-0.00158	-0.00158
	(!A_N * !B * !C * !X)	0.00114	0.00115	0.00114
	(!A_N * !B * !C * !X)	-0.00158	-0.00159	-0.00158

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00130	0.00131	0.00130
	(A_N * B * C * !X)	-0.00180	-0.00181	-0.00180
	(A_N * !C * !X)	0.00133	0.00135	0.00134
	(A_N * !C * !X)	-0.00180	-0.00181	-0.00180
	(A_N * !B * C * !X)	0.00129	0.00131	0.00130
	(A_N * !B * C * !X)	-0.00179	-0.00180	-0.00180
	(!A_N * B * !C * !X)	0.00131	0.00132	0.00131
	(!A_N * B * !C * !X)	-0.00182	-0.00183	-0.00182
	(!A_N * !B * C * !X)	0.00127	0.00129	0.00128
	(!A_N * !B * C * !X)	-0.00181	-0.00183	-0.00182
	(!A_N * !B * !C * !X)	0.00131	0.00132	0.00132
	(!A_N * !B * !C * !X)	-0.00182	-0.00182	-0.00182
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00238	0.00239	0.00237
	(A_N * B * C * !X)	-0.00339	-0.00340	-0.00338
	(A_N * !C * !X)	0.00239	0.00242	0.00239
	(A_N * !C * !X)	-0.00338	-0.00341	-0.00339
	(A_N * !B * C * !X)	0.00237	0.00241	0.00238
	(A_N * !B * C * !X)	-0.00338	-0.00339	-0.00339
	(!A_N * B * !C * !X)	0.00234	0.00236	0.00235
	(!A_N * B * !C * !X)	-0.00342	-0.00344	-0.00343
	(!A_N * !B * C * !X)	0.00232	0.00236	0.00234
	(!A_N * !B * C * !X)	-0.00342	-0.00344	-0.00343
	(!A_N * !B * !C * !X)	0.00235	0.00238	0.00236
	(!A_N * !B * !C * !X)	-0.00342	-0.00345	-0.00343

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)**	-0.00103	-0.00112	-0.00111
	(A_N * B * C * !X)	0.00159	0.00160	0.00159
	(A_N * !C * !X)	-0.00110	-0.00114	-0.00115
	(A_N * !C * !X)	0.00159	0.00159	0.00159
	(A_N * !B * C * !X)	-0.00104	-0.00111	-0.00111
	(A_N * !B * C * !X)	0.00158	0.00160	0.00159
	(!A_N * B * !C * !X)	-0.00110	-0.00115	-0.00114
	(!A_N * B * !C * !X)	0.00159	0.00160	0.00158
	(!A_N * !B * C * !X)	-0.00104	-0.00111	-0.00111
	(!A_N * !B * C * !X)	0.00158	0.00160	0.00158
	(!A_N * !B * !C * !X)	-0.00111	-0.00114	-0.00114
	(!A_N * !B * !C * !X)	0.00159	0.00159	0.00159
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00121	-0.00131	-0.00130
	(A_N * B * C * !X)	0.00180	0.00184	0.00181
	(A_N * !C * !X)	-0.00129	-0.00134	-0.00134
	(A_N * !C * !X)	0.00182	0.00183	0.00181
	(A_N * !B * C * !X)	-0.00122	-0.00131	-0.00130
	(A_N * !B * C * !X)	0.00181	0.00184	0.00181
	(!A_N * B * !C * !X)	-0.00127	-0.00132	-0.00131
	(!A_N * B * !C * !X)	0.00183	0.00185	0.00183
	(!A_N * !B * C * !X)	-0.00120	-0.00129	-0.00128
	(!A_N * !B * C * !X)	0.00182	0.00186	0.00183
	(!A_N * !B * !C * !X)	-0.00128	-0.00132	-0.00132
	(!A_N * !B * !C * !X)	0.00183	0.00185	0.00183

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00218	-0.00239	-0.00237
	(A_N * B * C * !X)	0.00340	0.00343	0.00340
	(A_N * !C * !X)	-0.00230	-0.00241	-0.00239
	(A_N * !C * !X)	0.00339	0.00343	0.00340
	(A_N * !B * C * !X)	-0.00221	-0.00239	-0.00238
	(A_N * !B * C * !X)	0.00340	0.00339	0.00340
	(!A_N * B * !C * !X)	-0.00224	-0.00236	-0.00235
	(!A_N * B * !C * !X)	0.00344	0.00347	0.00344
	(!A_N * !B * C * !X)	-0.00216	-0.00235	-0.00234
	(!A_N * !B * C * !X)	0.00344	0.00344	0.00344
	(!A_N * !B * !C * !X)	-0.00227	-0.00237	-0.00236
	(!A_N * !B * !C * !X)	0.00343	0.00347	0.00344

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00258	0.00254	0.00245	0.00247	1.05011
sky130_fd_sc_hs__and4_2	0.00277	0.00284	0.00270	0.00266	1.82375
sky130_fd_sc_hs__and4_4	0.00479	0.00495	0.00543	0.00484	3.93027

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.12546	1.17818
sky130_fd_sc_hs__and4_2	0.00000	0.13539	0.55103
sky130_fd_sc_hs__and4_4	0.00000	0.27167	1.10206

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)	0.10172	0.64891	6.70381
	B->X (RR)	0.11012	0.65974	6.70697
	C->X (RR)	0.11508	0.65416	6.65723
	D->X (RR)	0.12092	0.64493	6.51389
sky130_fd_sc_hs__and4_2	A->X (RR)	0.10844	0.58877	6.51504
	B->X (RR)	0.11763	0.59638	6.51604
	C->X (RR)	0.12351	0.58784	6.46260
	D->X (RR)	0.12813	0.57435	6.28586
sky130_fd_sc_hs__and4_4	A->X (RR)	0.11510	0.52059	6.73654
	B->X (RR)	0.12737	0.53445	6.76693
	C->X (RR)	0.13965	0.52987	6.66975
	D->X (RR)	0.14017	0.51377	6.62549

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.08397	0.50460	4.21080
	B->X (FF)	0.09363	0.52914	4.26897
	C->X (FF)	0.10175	0.55040	4.35103
	D->X (FF)	0.11047	0.57126	4.43228
sky130_fd_sc_hs__and4_2	A->X (FF)	0.09020	0.50103	4.04913
	B->X (FF)	0.10232	0.52694	4.13709
	C->X (FF)	0.11076	0.54648	4.21992
	D->X (FF)	0.12308	0.57167	4.32183
sky130_fd_sc_hs__and4_4	A->X (FF)	0.09024	0.47706	4.42014
	B->X (FF)	0.09539	0.48918	4.42592
	C->X (FF)	0.10492	0.51096	4.51634
	D->X (FF)	0.10858	0.52431	4.58777

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00813	0.00863	0.03154
	A	0.00410	0.00468	0.02752
	B	0.00884	0.00904	0.02989
	B	0.00413	0.00433	0.02518
	C	0.00964	0.00977	0.03082
	C	0.00414	0.00426	0.02535
	D	0.01057	0.01052	0.02689
	D	0.00414	0.00409	0.02056
sky130_fd_sc_hs__and4_2	A	0.01104	0.01156	0.03175
	A	0.00657	0.00712	0.02755
	B	0.01202	0.01222	0.03050
	B	0.00669	0.00691	0.02543
	C	0.01285	0.01305	0.03142
	C	0.00669	0.00689	0.02557
	D	0.01390	0.01396	0.02533
	D	0.00672	0.00677	0.01867
sky130_fd_sc_hs__and4_4	A	0.02055	0.02172	0.06177
	A	0.01287	0.01406	0.05411
	B	0.02249	0.02322	0.05925
	B	0.01284	0.01362	0.04961
	C	0.02483	0.02541	0.05759
	C	0.01289	0.01363	0.04588
	D	0.02583	0.02636	0.06295
	D	0.01293	0.01346	0.05027

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00301	0.00432	0.02631
	A	0.00705	0.00827	0.02991
	B	0.00348	0.00474	0.02621
	B	0.00815	0.00935	0.03053
	C	0.00381	0.00501	0.02710
	C	0.00920	0.01038	0.03207
	D	0.00417	0.00513	0.02684
	D	0.01040	0.01136	0.03260
sky130_fd_sc_hs__and4_2	A	0.00512	0.00645	0.02642
	A	0.00960	0.01088	0.03083
	B	0.00563	0.00704	0.02738
	B	0.01089	0.01212	0.03193
	C	0.00623	0.00766	0.02797
	C	0.01225	0.01360	0.03373
	D	0.00659	0.00759	0.02738
	D	0.01353	0.01440	0.03326
sky130_fd_sc_hs__and4_4	A	0.01020	0.01297	0.05617
	A	0.01787	0.02051	0.06180
	B	0.01081	0.01363	0.05525
	B	0.02037	0.02302	0.06328
	C	0.01163	0.01403	0.05657
	C	0.02329	0.02566	0.06571
	D	0.01316	0.01597	0.05990
	D	0.02562	0.02809	0.06973

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)	0.00047	0.00047	0.00042
	(B * C * !D * !X)	-0.00172	-0.00174	-0.00182
	(B * !C * !X)	0.00044	0.00044	0.00042
	(B * !C * !X)	-0.00177	-0.00178	-0.00183
	(!B * !X)	0.00044	0.00044	0.00043
	(!B * !X)	-0.00181	-0.00181	-0.00183
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00057	0.00057	0.00052
	(B * C * !D * !X)	-0.00195	-0.00196	-0.00207
	(B * !C * !X)	0.00055	0.00055	0.00051
	(B * !C * !X)	-0.00200	-0.00201	-0.00208
	(!B * !X)	0.00053	0.00053	0.00052
	(!B * !X)	-0.00205	-0.00205	-0.00208
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00080	0.00081	0.00070
	(B * C * !D * !X)	-0.00357	-0.00361	-0.00381
	(B * !C * !X)	0.00078	0.00079	0.00071
	(B * !C * !X)	-0.00367	-0.00370	-0.00383
	(!B * !X)	0.00075	0.00075	0.00072
	(!B * !X)	-0.00379	-0.00379	-0.00384

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)	-0.00041	-0.00041	-0.00041
	(B * C * !D * !X)	0.00183	0.00183	0.00184
	(B * !C * !X)	-0.00041	-0.00041	-0.00041
	(B * !C * !X)	0.00183	0.00183	0.00184
	(!B * !X)	-0.00042	-0.00042	-0.00042
	(!B * !X)	0.00183	0.00183	0.00184
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00050	-0.00050	-0.00049
	(B * C * !D * !X)	0.00208	0.00211	0.00208
	(B * !C * !X)	-0.00050	-0.00051	-0.00049
	(B * !C * !X)	0.00208	0.00211	0.00208
	(!B * !X)	-0.00051	-0.00051	-0.00050
	(!B * !X)	0.00208	0.00212	0.00209
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00066	-0.00068	-0.00066
	(B * C * !D * !X)	0.00382	0.00391	0.00385
	(B * !C * !X)	-0.00067	-0.00069	-0.00067
	(B * !C * !X)	0.00383	0.00391	0.00385
	(!B * !X)	-0.00071	-0.00072	-0.00070
	(!B * !X)	0.00387	0.00391	0.00385

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)**	0.00050	0.00050	0.00050
	(A * C * !D * !X)	-0.00148	-0.00148	-0.00148
	(A * !C * !X)	0.00051	0.00051	0.00051
	(A * !C * !X)	-0.00148	-0.00148	-0.00148
	(!A * C * D * !X)	0.00115	0.00116	0.00116
	(!A * C * D * !X)	-0.00148	-0.00149	-0.00148
	(!A * C * !D * !X)	0.00062	0.00062	0.00062
	(!A * C * !D * !X)	-0.00149	-0.00149	-0.00149
	(!A * !C * !X)	0.00059	0.00059	0.00058
	(!A * !C * !X)	-0.00149	-0.00150	-0.00149
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00060	0.00060	0.00059
	(A * C * !D * !X)	-0.00177	-0.00177	-0.00176
	(A * !C * !X)	0.00061	0.00061	0.00061
	(A * !C * !X)	-0.00177	-0.00177	-0.00176
	(!A * C * D * !X)	0.00134	0.00135	0.00134
	(!A * C * D * !X)	-0.00176	-0.00178	-0.00177
	(!A * C * !D * !X)	0.00074	0.00074	0.00073
	(!A * C * !D * !X)	-0.00177	-0.00178	-0.00177
	(!A * !C * !X)	0.00071	0.00072	0.00071
	(!A * !C * !X)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00125	0.00127	0.00125
	(A * C * !D * !X)	-0.00332	-0.00335	-0.00332
	(A * !C * !X)	0.00131	0.00133	0.00131
	(A * !C * !X)	-0.00333	-0.00336	-0.00333
	(!A * C * D * !X)	0.00257	0.00261	0.00258
	(!A * C * D * !X)	-0.00331	-0.00334	-0.00331
	(!A * C * !D * !X)	0.00149	0.00150	0.00150
	(!A * C * !D * !X)	-0.00334	-0.00335	-0.00335
	(!A * !C * !X)	0.00151	0.00153	0.00151
	(!A * !C * !X)	-0.00336	-0.00339	-0.00336

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)	-0.00048	-0.00049	-0.00049
	(A * C * !D * !X)	0.00151	0.00153	0.00149
	(A * !C * !X)	-0.00048	-0.00049	-0.00049
	(A * !C * !X)	0.00151	0.00154	0.00149
	(!A * C * D * !X)	-0.00103	-0.00116	-0.00116
	(!A * C * D * !X)	0.00159	0.00151	0.00149
	(!A * C * !D * !X)	-0.00062	-0.00062	-0.00062
	(!A * C * !D * !X)	0.00157	0.00155	0.00149
	(!A * !C * !X)	-0.00059	-0.00059	-0.00058
	(!A * !C * !X)	0.00156	0.00158	0.00151
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00057	-0.00058	-0.00058
	(A * C * !D * !X)	0.00180	0.00183	0.00178
	(A * !C * !X)	-0.00058	-0.00059	-0.00059
	(A * !C * !X)	0.00180	0.00183	0.00178
	(!A * C * D * !X)	-0.00122	-0.00135	-0.00134
	(!A * C * D * !X)	0.00188	0.00179	0.00177
	(!A * C * !D * !X)	-0.00074	-0.00074	-0.00073
	(!A * C * !D * !X)	0.00185	0.00183	0.00177
	(!A * !C * !X)	-0.00071	-0.00072	-0.00071
	(!A * !C * !X)	0.00186	0.00188	0.00180

sky130_fd_sc_hs__and4_4	(A * C * !D * !X)	-0.00122	-0.00123	-0.00124
	(A * C * !D * !X)	0.00341	0.00343	0.00336
	(A * !C * !X)	-0.00125	-0.00126	-0.00127
	(A * !C * !X)	0.00342	0.00344	0.00337
	(!A * C * D * !X)	-0.00235	-0.00261	-0.00258
	(!A * C * D * !X)	0.00350	0.00337	0.00333
	(!A * C * !D * !X)	-0.00149	-0.00150	-0.00150
	(!A * C * !D * !X)	0.00350	0.00345	0.00336
	(!A * !C * !X)	-0.00151	-0.00153	-0.00151
	(!A * !C * !X)	0.00356	0.00356	0.00342

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)	0.00059	0.00059	0.00059
	(A * B * !D * !X)	-0.00141	-0.00141	-0.00140
	(A * !B * D * !X)	0.00121	0.00121	0.00120
	(A * !B * D * !X)	-0.00143	-0.00144	-0.00143
	(A * !B * !D * !X)	0.00068	0.00068	0.00067
	(A * !B * !D * !X)	-0.00144	-0.00144	-0.00143
	(!A * B * D * !X)	0.00117	0.00117	0.00117
	(!A * B * D * !X)	-0.00143	-0.00144	-0.00143
	(!A * B * !D * !X)	0.00067	0.00067	0.00066
	(!A * B * !D * !X)	-0.00144	-0.00144	-0.00143
	(!A * !B * D * !X)	0.00120	0.00121	0.00120
	(!A * !B * D * !X)	-0.00143	-0.00144	-0.00143
	(!A * !B * !D * !X)	0.00070	0.00070	0.00070
	(!A * !B * !D * !X)	-0.00144	-0.00143	-0.00143

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00064	0.00064	0.00064
	(A * B * !D * !X)	-0.00163	-0.00164	-0.00162
	(A * !B * D * !X)	0.00134	0.00135	0.00134
	(A * !B * D * !X)	-0.00166	-0.00166	-0.00166
	(A * !B * !D * !X)	0.00075	0.00075	0.00075
	(A * !B * !D * !X)	-0.00165	-0.00166	-0.00166
	(!A * B * D * !X)	0.00131	0.00131	0.00131
	(!A * B * D * !X)	-0.00166	-0.00166	-0.00166
	(!A * B * !D * !X)	0.00073	0.00073	0.00072
	(!A * B * !D * !X)	-0.00166	-0.00167	-0.00166
	(!A * !B * D * !X)	0.00134	0.00135	0.00134
	(!A * !B * D * !X)	-0.00166	-0.00167	-0.00166
	(!A * !B * !D * !X)	0.00079	0.00079	0.00078
	(!A * !B * !D * !X)	-0.00166	-0.00167	-0.00166
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00164	0.00165	0.00165
	(A * B * !D * !X)	-0.00341	-0.00343	-0.00341
	(A * !B * D * !X)	0.00287	0.00290	0.00289
	(A * !B * D * !X)	-0.00343	-0.00345	-0.00345
	(A * !B * !D * !X)	0.00184	0.00183	0.00183
	(A * !B * !D * !X)	-0.00347	-0.00346	-0.00346
	(!A * B * D * !X)	0.00287	0.00290	0.00288
	(!A * B * D * !X)	-0.00344	-0.00346	-0.00344
	(!A * B * !D * !X)	0.00180	0.00181	0.00180
	(!A * B * !D * !X)	-0.00346	-0.00348	-0.00346
	(!A * !B * D * !X)	0.00287	0.00291	0.00289
	(!A * !B * D * !X)	-0.00343	-0.00346	-0.00345
	(!A * !B * !D * !X)	0.00189	0.00190	0.00190
	(!A * !B * !D * !X)	-0.00346	-0.00347	-0.00347

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)	-0.00055	-0.00056	-0.00056
	(A * B * !D * !X)	0.00145	0.00147	0.00145
	(A * !B * D * !X)	-0.00114	-0.00120	-0.00120
	(A * !B * D * !X)	0.00143	0.00144	0.00144
	(A * !B * !D * !X)	-0.00068	-0.00068	-0.00067
	(A * !B * !D * !X)	0.00149	0.00151	0.00146
	(!A * B * D * !X)	-0.00106	-0.00117	-0.00117
	(!A * B * D * !X)	0.00144	0.00145	0.00144
	(!A * B * !D * !X)	-0.00067	-0.00067	-0.00066
	(!A * B * !D * !X)	0.00145	0.00147	0.00144
	(!A * !B * D * !X)	-0.00115	-0.00120	-0.00120
	(!A * !B * D * !X)	0.00143	0.00145	0.00144
	(!A * !B * !D * !X)	-0.00070	-0.00070	-0.00070
	(!A * !B * !D * !X)	0.00145	0.00145	0.00144
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00060	-0.00062	-0.00061
	(A * B * !D * !X)	0.00168	0.00171	0.00167
	(A * !B * D * !X)	-0.00127	-0.00135	-0.00134
	(A * !B * D * !X)	0.00166	0.00167	0.00167
	(A * !B * !D * !X)	-0.00075	-0.00075	-0.00075
	(A * !B * !D * !X)	0.00172	0.00174	0.00168
	(!A * B * D * !X)	-0.00118	-0.00131	-0.00131
	(!A * B * D * !X)	0.00167	0.00167	0.00167
	(!A * B * !D * !X)	-0.00073	-0.00073	-0.00072
	(!A * B * !D * !X)	0.00166	0.00169	0.00166
	(!A * !B * D * !X)	-0.00128	-0.00135	-0.00134
	(!A * !B * D * !X)	0.00166	0.00168	0.00167
	(!A * !B * !D * !X)	-0.00079	-0.00079	-0.00078
	(!A * !B * !D * !X)	0.00166	0.00168	0.00167

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00158	-0.00161	-0.00160
	(A * B * !D * !X)	0.00347	0.00352	0.00348
	(A * !B * D * !X)	-0.00275	-0.00290	-0.00289
	(A * !B * D * !X)	0.00344	0.00351	0.00346
	(A * !B * !D * !X)	-0.00184	-0.00183	-0.00183
	(A * !B * !D * !X)	0.00357	0.00361	0.00350
	(!A * B * D * !X)	-0.00263	-0.00290	-0.00288
	(!A * B * D * !X)	0.00347	0.00348	0.00345
	(!A * B * !D * !X)	-0.00180	-0.00181	-0.00180
	(!A * B * !D * !X)	0.00348	0.00352	0.00347
	(!A * !B * D * !X)	-0.00277	-0.00291	-0.00289
	(!A * !B * D * !X)	0.00345	0.00351	0.00346
	(!A * !B * !D * !X)	-0.00189	-0.00190	-0.00190
	(!A * !B * !D * !X)	0.00348	0.00351	0.00348

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)	0.00117	0.00118	0.00117
	(A * B * !C * !X)	-0.00158	-0.00159	-0.00159
	(A * !B * C * !X)	0.00114	0.00115	0.00114
	(A * !B * C * !X)	-0.00159	-0.00159	-0.00159
	(A * !B * !C * !X)	0.00116	0.00118	0.00117
	(A * !B * !C * !X)	-0.00158	-0.00159	-0.00159
	(!A * B * C * !X)	0.00112	0.00114	0.00113
	(!A * B * C * !X)	-0.00158	-0.00160	-0.00159
	(!A * !C * !X)	0.00116	0.00118	0.00117
	(!A * !C * !X)	-0.00158	-0.00159	-0.00159
	(!A * !B * C * !X)	0.00117	0.00118	0.00117
	(!A * !B * C * !X)	-0.00159	-0.00160	-0.00159

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00137	0.00139	0.00138
	(A * B * !C * !X)	-0.00171	-0.00173	-0.00172
	(A * !B * C * !X)	0.00135	0.00136	0.00134
	(A * !B * C * !X)	-0.00172	-0.00173	-0.00172
	(A * !B * !C * !X)	0.00137	0.00139	0.00137
	(A * !B * !C * !X)	-0.00171	-0.00173	-0.00172
	(!A * B * C * !X)	0.00133	0.00134	0.00133
	(!A * B * C * !X)	-0.00172	-0.00172	-0.00172
	(!A * !C * !X)	0.00137	0.00138	0.00137
	(!A * !C * !X)	-0.00171	-0.00173	-0.00172
	(!A * !B * C * !X)	0.00134	0.00134	0.00134
	(!A * !B * C * !X)	-0.00172	-0.00172	-0.00172
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00228	0.00229	0.00228
	(A * B * !C * !X)	-0.00337	-0.00337	-0.00336
	(A * !B * C * !X)	0.00225	0.00228	0.00227
	(A * !B * C * !X)	-0.00335	-0.00337	-0.00336
	(A * !B * !C * !X)	0.00229	0.00230	0.00229
	(A * !B * !C * !X)	-0.00337	-0.00338	-0.00336
	(!A * B * C * !X)	0.00225	0.00226	0.00224
	(!A * B * C * !X)	-0.00337	-0.00338	-0.00336
	(!A * !C * !X)	0.00228	0.00229	0.00228
	(!A * !C * !X)	-0.00336	-0.00338	-0.00336
	(!A * !B * C * !X)	0.00225	0.00227	0.00227
	(!A * !B * C * !X)	-0.00335	-0.00337	-0.00337

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)**	-0.00113	-0.00118	-0.00117
	(A * B * !C * !X)	0.00160	0.00160	0.00159
	(A * !B * C * !X)	-0.00107	-0.00115	-0.00114
	(A * !B * C * !X)	0.00159	0.00161	0.00159
	(A * !B * !C * !X)	-0.00114	-0.00117	-0.00117
	(A * !B * !C * !X)	0.00160	0.00159	0.00159
	(!A * B * C * !X)	-0.00106	-0.00114	-0.00113
	(!A * B * C * !X)	0.00160	0.00161	0.00159
	(!A * !C * !X)	-0.00114	-0.00117	-0.00117
	(!A * !C * !X)	0.00160	0.00159	0.00159
	(!A * !B * C * !X)	-0.00107	-0.00116	-0.00117
	(!A * !B * C * !X)	0.00159	0.00161	0.00159
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00133	-0.00138	-0.00138
	(A * B * !C * !X)	0.00173	0.00173	0.00172
	(A * !B * C * !X)	-0.00126	-0.00136	-0.00134
	(A * !B * C * !X)	0.00172	0.00174	0.00172
	(A * !B * !C * !X)	-0.00133	-0.00138	-0.00137
	(A * !B * !C * !X)	0.00173	0.00173	0.00172
	(!A * B * C * !X)	-0.00124	-0.00134	-0.00133
	(!A * B * C * !X)	0.00172	0.00174	0.00172
	(!A * !C * !X)	-0.00133	-0.00138	-0.00137
	(!A * !C * !X)	0.00173	0.00173	0.00172
	(!A * !B * C * !X)	-0.00126	-0.00134	-0.00134
	(!A * !B * C * !X)	0.00172	0.00174	0.00172

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00217	-0.00229	-0.00228
	(A * B * !C * !X)	0.00337	0.00341	0.00338
	(A * !B * C * !X)	-0.00209	-0.00226	-0.00227
	(A * !B * C * !X)	0.00339	0.00337	0.00338
	(A * !B * !C * !X)	-0.00220	-0.00230	-0.00229
	(A * !B * !C * !X)	0.00337	0.00341	0.00338
	(!A * B * C * !X)	-0.00202	-0.00226	-0.00224
	(!A * B * C * !X)	0.00337	0.00341	0.00338
	(!A * !C * !X)	-0.00217	-0.00229	-0.00228
	(!A * !C * !X)	0.00336	0.00341	0.00338
	(!A * !B * C * !X)	-0.00209	-0.00226	-0.00227
	(!A * !B * C * !X)	0.00339	0.00337	0.00338

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00248	1.05165
sky130_fd_sc_hs__buf_16	0.01606	16.07025
sky130_fd_sc_hs__buf_2	0.00265	1.94205
sky130_fd_sc_hs__buf_4	0.00363	4.00248
sky130_fd_sc_hs__buf_8	0.00822	7.55429
sky130_fd_sc_hs__bufbuf_16	0.00295	15.94038
sky130_fd_sc_hs__bufbuf_8	0.00231	7.64289

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.17782	0.29920
sky130_fd_sc_hs__buf_16	0.00000	0.64984	0.88328
sky130_fd_sc_hs__buf_2	0.00000	0.13063	0.14705
sky130_fd_sc_hs__buf_4	0.00000	0.41425	0.61078
sky130_fd_sc_hs__buf_8	0.00000	0.32492	0.44164
sky130_fd_sc_hs__bufbuf_16	0.00000	0.76800	1.04812
sky130_fd_sc_hs__bufbuf_8	0.00000	0.50274	0.50740

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)	0.05674	0.56309	6.38838
sky130_fd_sc_hs__buf_16	A->X (RR)	0.05820	0.29280	6.34443
sky130_fd_sc_hs__buf_2	A->X (RR)	0.05868	0.47616	6.09276
sky130_fd_sc_hs__buf_4	A->X (RR)	0.07029	0.44832	6.69378
sky130_fd_sc_hs__buf_8	A->X (RR)	0.05803	0.34221	6.19662
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.17444	0.42161	6.38365
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.18704	0.44867	6.24742

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.06972	0.46946	4.14445
sky130_fd_sc_hs__buf_16	A->X (FF)	0.08506	0.43284	4.55140
sky130_fd_sc_hs__buf_2	A->X (FF)	0.08379	0.49004	4.23371
sky130_fd_sc_hs__buf_4	A->X (FF)	0.08161	0.44910	4.21054
sky130_fd_sc_hs__buf_8	A->X (FF)	0.08644	0.46013	4.60700
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.21340	0.56526	4.50803
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.18779	0.50151	4.19591

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00632	0.00683	0.02541
	A	0.00284	0.00336	0.02210
sky130_fd_sc_hs__buf_16	A	0.06293	0.06851	0.19651
	A	0.04038	0.04597	0.17692
sky130_fd_sc_hs__buf_2	A	0.00925	0.00987	0.02531
	A	0.00553	0.00616	0.02227
sky130_fd_sc_hs__buf_4	A	0.01491	0.01621	0.05273
	A	0.00979	0.01117	0.04770
sky130_fd_sc_hs__buf_8	A	0.03203	0.03477	0.09542
	A	0.02048	0.02323	0.08629
sky130_fd_sc_hs__bufbuf_16	A	0.07530	0.08100	0.10732
	A	0.07114	0.07688	0.10625
sky130_fd_sc_hs__bufbuf_8	A	0.03774	0.04055	0.06531
	A	0.03448	0.03733	0.06435

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00288	0.00428	0.02587
	A	0.00635	0.00771	0.02900
sky130_fd_sc_hs__buf_16	A	0.04107	0.05145	0.18522
	A	0.06368	0.07400	0.20168
sky130_fd_sc_hs__buf_2	A	0.00509	0.00637	0.02649
	A	0.00881	0.01007	0.02933
sky130_fd_sc_hs__buf_4	A	0.01058	0.01343	0.05018
	A	0.01569	0.01846	0.05528
sky130_fd_sc_hs__buf_8	A	0.02040	0.02491	0.08865
	A	0.03193	0.03639	0.09905
sky130_fd_sc_hs__bufbuf_16	A	0.07194	0.07877	0.10713
	A	0.07607	0.08271	0.10891
sky130_fd_sc_hs__bufbuf_8	A	0.03377	0.03778	0.06613
	A	0.03702	0.04092	0.06558

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00262	1.06419
sky130_fd_sc_hs__clkbuf_16	0.00884	16.21525
sky130_fd_sc_hs__clkbuf_2	0.00263	1.82429
sky130_fd_sc_hs__clkbuf_4	0.00242	3.95000
sky130_fd_sc_hs__clkbuf_8	0.00454	7.64701

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	0.05454	0.05454
sky130_fd_sc_hs__clkbuf_16	0.00000	0.54543	0.85276
sky130_fd_sc_hs__clkbuf_2	0.00000	0.08182	0.10743
sky130_fd_sc_hs__clkbuf_4	0.00000	0.13636	0.21319
sky130_fd_sc_hs__clkbuf_8	0.00000	0.27272	0.42638

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)	0.06026	0.58058	6.52879
sky130_fd_sc_hs__clkbuf_16	A->X (RR)	0.08036	0.38580	6.79487
sky130_fd_sc_hs__clkbuf_2	A->X (RR)	0.06657	0.51927	6.32455
sky130_fd_sc_hs__clkbuf_4	A->X (RR)	0.08501	0.50054	6.68537
sky130_fd_sc_hs__clkbuf_8	A->X (RR)	0.08016	0.42892	6.58988

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	A->X (FF)	0.06577	0.58657	6.10808
sky130_fd_sc_hs__clkbuf_16	A->X (FF)	0.10002	0.51187	6.60792
sky130_fd_sc_hs__clkbuf_2	A->X (FF)	0.07761	0.55192	5.67575
sky130_fd_sc_hs__clkbuf_4	A->X (FF)	0.10060	0.58639	6.37249
sky130_fd_sc_hs__clkbuf_8	A->X (FF)	0.09664	0.53577	6.32714

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00612	0.00639	0.02011
	A	0.00244	0.00271	0.01651
sky130_fd_sc_hs__clkbuf_16	A	0.04831	0.05118	0.11261
	A	0.03583	0.03877	0.12627
sky130_fd_sc_hs__clkbuf_2	A	0.00827	0.00848	0.01954
	A	0.00467	0.00490	0.01637
sky130_fd_sc_hs__clkbuf_4	A	0.01283	0.01346	0.02675
	A	0.00944	0.01010	0.02350
sky130_fd_sc_hs__clkbuf_8	A	0.02452	0.02605	0.05532
	A	0.01812	0.01973	0.04966

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00236	0.00327	0.02007
	A	0.00604	0.00694	0.02361
sky130_fd_sc_hs__clkbuf_16	A	0.03134	0.03703	0.10881
	A	0.04379	0.04938	0.11705
sky130_fd_sc_hs__clkbuf_2	A	0.00379	0.00464	0.02018
	A	0.00738	0.00821	0.02312
sky130_fd_sc_hs__clkbuf_4	A	0.00804	0.00956	0.02562
	A	0.01143	0.01288	0.02851
sky130_fd_sc_hs__clkbuf_8	A	0.01566	0.01849	0.05331
	A	0.02206	0.02485	0.05803

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00249	1.07670
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00252	1.08012
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00255	1.06883
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00248	1.06610
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00251	1.07691
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00254	1.06545

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.12271	0.13798
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.05500	0.10660
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.05519	0.10660
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.25903	0.27431
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.05590	0.10751
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.05649	0.10790

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)**	0.10037	0.73687	7.98117
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.11113	0.75904	8.03877
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.12691	0.79209	8.05143
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.18106	0.81431	8.00459
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.25058	0.89936	8.18442
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.41785	1.08546	8.36953

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.09666	0.48409	4.48370
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.13573	0.54405	4.68510
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.22066	0.66509	4.87981
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.17784	0.56353	4.50277
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.28101	0.69024	4.81659
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.52636	0.97343	5.18565

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00494	0.00593	0.02521
	A	0.00845	0.00944	0.02886
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00527	0.00606	0.02442
	A	0.00881	0.00960	0.02811
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00585	0.00637	0.02405
	A	0.00943	0.00997	0.02777
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.01092	0.01169	0.03081
	A	0.01441	0.01520	0.03446
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01199	0.01253	0.03074
	A	0.01552	0.01610	0.03434
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01418	0.01450	0.03186
	A	0.01776	0.01807	0.03592

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00832	0.00879	0.02850
	A	0.00482	0.00526	0.02414
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00884	0.00927	0.02756
	A	0.00530	0.00569	0.02358
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.01033	0.01067	0.02813
	A	0.00674	0.00709	0.02449
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01412	0.01444	0.03403
	A	0.01063	0.01094	0.02964
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01539	0.01561	0.03349
	A	0.01186	0.01207	0.02975
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.01878	0.01896	0.03621
	A	0.01519	0.01538	0.03244

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00318	1.48168
sky130_fd_sc_hs__clkinv_16	0.04712	23.28118
sky130_fd_sc_hs__clkinv_2	0.00606	2.81466
sky130_fd_sc_hs__clkinv_4	0.01202	5.53718
sky130_fd_sc_hs__clkinv_8	0.02406	10.53409

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	0.29383	0.58600
sky130_fd_sc_hs__clkinv_16	0.00000	0.64787	1.26917
sky130_fd_sc_hs__clkinv_2	0.00000	0.08099	0.15865
sky130_fd_sc_hs__clkinv_4	0.00000	0.16197	0.31729
sky130_fd_sc_hs__clkinv_8	0.00000	0.32394	0.63458

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)	0.02372	0.71174	10.55060
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.01745	0.44883	10.93730
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.02228	0.65003	10.90380
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.01972	0.57474	10.84600
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.02004	0.50879	10.72680

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.02546	0.68012	10.26900
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.01845	0.37140	10.49670
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.02263	0.57651	9.93030
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.02014	0.49545	9.98296
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.02053	0.42446	9.85042

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00029	0.00039	0.00493
	A	0.00418	0.00489	0.00968
sky130_fd_sc_hs__clkinv_16	A	-0.01165	0.00352	0.03488
	A	0.05439	0.07013	0.10260
sky130_fd_sc_hs__clkinv_2	A	-0.00093	0.00020	0.00488
	A	0.00757	0.00809	0.01361
sky130_fd_sc_hs__clkinv_4	A	-0.00216	0.00060	0.01057
	A	0.01468	0.01758	0.02796
sky130_fd_sc_hs__clkinv_8	A	-0.00422	0.00098	0.02648
	A	0.02954	0.03486	0.06169

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00331	0.00354	0.00498
	A	-0.00116	-0.00096	0.00041
sky130_fd_sc_hs__clkinv_16	A	0.04578	0.04918	0.07288
	A	-0.02038	-0.01698	0.00464
sky130_fd_sc_hs__clkinv_2	A	0.00656	0.00671	0.00954
	A	-0.00193	-0.00166	0.00102
sky130_fd_sc_hs__clkinv_4	A	0.01188	0.01286	0.01858
	A	-0.00497	-0.00423	0.00170
sky130_fd_sc_hs__clkinv_8	A	0.02347	0.02529	0.03999
	A	-0.01025	-0.00874	0.00593

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00159	1.05602
sky130_fd_sc_hs__dlymetal6s4s_1	0.00158	1.05787
sky130_fd_sc_hs__dlymetal6s6s_1	0.00158	1.06550

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.10203	0.16363
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.10203	0.16363
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.10203	0.16363

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)**	0.06889	0.57614	6.09251
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.13763	0.64390	6.10419
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.19817	0.70479	6.21071

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.10408	0.58689	4.76075
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.20750	0.67494	4.76310
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.30460	0.77492	4.88185

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01608	0.01622	0.02975
	A	0.01386	0.01399	0.02754
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01610	0.01628	0.03320
	A	0.01387	0.01406	0.03129
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01613	0.01622	0.02510
	A	0.01391	0.01400	0.02313

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01357	0.01389	0.02251
	A	0.01580	0.01609	0.02458
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01361	0.01387	0.02535
	A	0.01584	0.01608	0.02750
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01364	0.01398	0.02285
	A	0.01587	0.01620	0.02459

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00173	0.00170	0.00539	0.00295	1.06327	0.98239
sky130_fd_sc_hs__dfbbn_2	0.00173	0.00172	0.00533	0.00295	2.03437	1.98660

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	0.75624	1.53602
sky130_fd_sc_hs__dfbbn_2	0.00000	0.72302	1.43675

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)	0.40781	1.10488	8.69227
	SET_B->Q (FR)	0.20135	0.93229	8.65327
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.45953	1.04643	8.64862
	SET_B->Q (FR)	0.23189	0.87000	8.64675

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)	0.40692	0.84823	4.71786
	RESET_B->Q (FF)	0.25086	0.72152	4.63346
	SET_B->Q (RF)	0.14594	0.43296	2.43118
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.44553	0.84360	4.62166
	RESET_B->Q (FF)	0.28809	0.71803	4.56433
	SET_B->Q (RF)	0.18175	0.44329	2.46074

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)	0.37192	1.09504	8.69890
	RESET_B->Q_N (FR)	0.21754	0.97437	8.62957
	SET_B->Q_N (RR)	0.11221	0.68862	6.62563
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.37766	0.99582	8.63163
	RESET_B->Q_N (FR)	0.22226	0.87301	8.58612
	SET_B->Q_N (RR)	0.11627	0.60126	6.64351

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)	0.33252	0.83451	4.58578
	SET_B->Q_N (FF)	0.13461	0.66275	4.76040
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.36363	0.84644	4.58008
	SET_B->Q_N (FF)	0.14486	0.65289	4.82556

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)	0.01152	0.08585	2.07831
	setup	CLK_N (F)	0.10689	0.00945	-2.06715
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.01065	0.08715	2.08525
	setup	CLK_N (F)	0.10119	0.00473	-2.07098

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)	-0.14582	-0.21362	-0.83456
	setup	CLK_N (F)	0.17116	0.23718	0.84783
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.14699	-0.21557	-0.83429
	setup	CLK_N (F)	0.17162	0.23718	0.84905

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)	0.01152	0.08585	2.07831
	setup	CLK_N (F)	0.10689	0.00945	-2.06715
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.01065	0.08715	2.08525
	setup	CLK_N (F)	0.10119	0.00473	-2.07098

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)	-0.14582	-0.21362	-0.83456
	setup	CLK_N (F)	0.17116	0.23718	0.84783
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.14699	-0.21557	-0.83429
	setup	CLK_N (F)	0.17162	0.23718	0.84905

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)	0.10311	0.00919	-1.97973
	removal	CLK_N (F)	0.02812	0.10325	2.03454
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.09772	0.00439	-1.98544
	removal	CLK_N (F)	0.02650	0.10378	2.03660

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)	0.10311	0.00919	-1.97973
	removal	CLK_N (F)	0.02812	0.10325	2.03454
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.09772	0.00439	-1.98544
	removal	CLK_N (F)	0.02650	0.10378	2.03660

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 ()	0.21544	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.19012	0.67627	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.22811	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.19772	0.67627	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)	-0.03194	-0.13373	-1.72294
	removal	CLK_N (F)	0.04181	0.14935	2.15393
	hold	RESET_B (R)	-0.05248	-0.09677	-0.40508
	setup	RESET_B (R)	0.11234	0.14719	0.80010
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.03252	-0.13631	-1.42804
	removal	CLK_N (F)	0.04181	0.14935	2.15792
	hold	RESET_B (R)	-0.07539	-0.12209	-0.54602
	setup	RESET_B (R)	0.12137	0.16873	1.14158

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)	-0.03194	-0.13373	-1.72294
	removal	CLK_N (F)	0.04181	0.14935	2.15393
	hold	RESET_B (R)	-0.05573	-0.09883	-0.40508
	hold	RESET_B (R)	-0.05248	-0.09677	-0.40961
	setup	RESET_B (R)	0.11234	0.14719	0.79414
	setup	RESET_B (R)	0.08595	0.12715	0.80010
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.03252	-0.13631	-1.42804
	removal	CLK_N (F)	0.04181	0.14935	2.15792
	hold	RESET_B (R)	-0.07614	-0.13449	-0.55315
	hold	RESET_B (R)	-0.07539	-0.12209	-0.54602
	setup	RESET_B (R)	0.12137	0.16873	1.11291
	setup	RESET_B (R)	0.09183	0.15715	1.14158

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 ()	0.15214	0.67627	16.50020
	min_pulse_width	SET_B ()	0.13695	0.67627	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.18000	0.67627	16.50020
	min_pulse_width	SET_B ()	0.15468	0.67627	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 ()	0.18000	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.15721	0.67627	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.17493	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.15721	0.67627	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 ()	0.17746	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.21544	0.67627	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.20785	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.22557	0.67627	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	0.01241	0.01314	0.02524
	CLK_N	0.01446	0.01518	0.02698
	SET_B	0.01296	0.01396	0.03676
	SET_B	0.01675	0.01776	0.04029
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01528	0.01611	0.02839
	CLK_N	0.01735	0.01817	0.03006
	SET_B	0.01565	0.01677	0.03989
	SET_B	0.01943	0.02056	0.04321

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01366	0.01450	0.02622
	CLK_N	0.01553	0.01637	0.02768
	RESET_B	0.01631	0.01671	0.02414
	RESET_B	0.01740	0.01781	0.02506
	SET_B	0.01710	0.01707	0.03620
	SET_B	0.01327	0.01322	0.03234
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01633	0.01745	0.02877
	CLK_N	0.01818	0.01929	0.03059
	RESET_B	0.01900	0.01971	0.02772
	RESET_B	0.02009	0.02080	0.02844
	SET_B	0.01976	0.02002	0.03887
	SET_B	0.01594	0.01616	0.03498

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01368	0.01452	0.02626
	CLK_N	0.01555	0.01639	0.02790
	RESET_B	0.01632	0.01673	0.02438
	RESET_B	0.01741	0.01782	0.02532
	SET_B	0.01711	0.01712	0.03637
	SET_B	0.01329	0.01323	0.03255
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01635	0.01747	0.02942
	CLK_N	0.01820	0.01931	0.03095
	RESET_B	0.01901	0.01972	0.02808
	RESET_B	0.02010	0.02081	0.02877
	SET_B	0.01977	0.02002	0.03895
	SET_B	0.01596	0.01618	0.03513

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01239	0.01312	0.02470
	CLK_N	0.01444	0.01516	0.02669
	SET_B	0.01292	0.01392	0.03616
	SET_B	0.01671	0.01772	0.03981
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01526	0.01609	0.02820
	CLK_N	0.01733	0.01815	0.02989
	SET_B	0.01560	0.01673	0.03886
	SET_B	0.01938	0.02051	0.04264

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)	0.00974	0.00966	0.01724
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00778	0.00769	0.01527
	(CLK_N * !SET_B * Q * !Q_N)	0.00633	0.00649	0.01330
	(CLK_N * !SET_B * Q * !Q_N)	0.00387	0.00402	0.01083
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00538	0.00545	0.01229
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00295	0.00300	0.00985
	!CLK_N	0.00337	0.00349	0.01098
	!CLK_N	0.00093	0.00105	0.00855
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00978	0.00970	0.01728
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00780	0.00771	0.01530
	(CLK_N * !SET_B * Q * !Q_N)	0.00635	0.00650	0.01333
	(CLK_N * !SET_B * Q * !Q_N)	0.00388	0.00403	0.01086
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00535	0.00543	0.01228
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00292	0.00298	0.00984
	!CLK_N	0.00336	0.00348	0.01098
	!CLK_N	0.00092	0.00104	0.00855

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)	0.00935	0.00942	0.01674
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01132	0.01138	0.01871
	(CLK_N * !SET_B * Q * !Q_N)	0.00257	0.00266	0.00917
	(CLK_N * !SET_B * Q * !Q_N)	0.00504	0.00513	0.01165
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00337	0.00347	0.01008
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00580	0.00591	0.01252
	!CLK_N	0.00134	0.00150	0.00871
	!CLK_N	0.00377	0.00394	0.01114
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00932	0.00942	0.01673
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01131	0.01139	0.01871
	(CLK_N * !SET_B * Q * !Q_N)	0.00250	0.00260	0.00912
	(CLK_N * !SET_B * Q * !Q_N)	0.00497	0.00507	0.01160
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00334	0.00345	0.01007
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00578	0.00590	0.01252
	!CLK_N	0.00131	0.00148	0.00869
	!CLK_N	0.00374	0.00392	0.01113

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)	0.01082	0.01080	0.02538
	(CLK_N * D * SET_B * !Q * Q_N)	0.00846	0.00844	0.02302
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00643	0.00659	0.02097
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00360	0.00375	0.01814
	(!SET_B * Q * !Q_N)	0.00643	0.00673	0.02130
	(!SET_B * Q * !Q_N)	0.00354	0.00383	0.01841
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01087	0.01084	0.02548
	(CLK_N * D * SET_B * !Q * Q_N)	0.00846	0.00843	0.02307
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00642	0.00657	0.02102
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00354	0.00370	0.01816
	(!SET_B * Q * !Q_N)	0.00644	0.00673	0.02135
	(!SET_B * Q * !Q_N)	0.00352	0.00380	0.01842

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)	0.00951	0.00996	0.02516
	(CLK_N * D * SET_B * !Q * Q_N)	0.01187	0.01232	0.02753
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00317	0.00364	0.01839
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00600	0.00647	0.02121
	(!SET_B * Q * !Q_N)	0.00211	0.00265	0.01754
	(!SET_B * Q * !Q_N)	0.00502	0.00557	0.02044
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00954	0.00999	0.02524
	(CLK_N * D * SET_B * !Q * Q_N)	0.01194	0.01239	0.02765
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00319	0.00367	0.01847
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00606	0.00653	0.02132
	(!SET_B * Q * !Q_N)	0.00211	0.00265	0.01757
	(!SET_B * Q * !Q_N)	0.00506	0.00560	0.02050

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)	0.00308	0.00310	0.00311
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00349	-0.00351	-0.00351
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01000	0.00998	0.02974
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00279	0.00274	0.02251
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00306	0.00310	0.00307
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00349	-0.00351	-0.00349
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00999	0.00998	0.02974
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00285	0.00279	0.02257

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)	-0.00302	-0.00309	-0.00309
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00353	0.00354	0.00353
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00111	0.00188	0.02351
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00829	0.00913	0.03075
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00299	-0.00306	-0.00306
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00352	0.00352	0.00351
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00107	0.00185	0.02347
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00820	0.00904	0.03064

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)**	0.01832	0.01867	0.04165
	(D * RESET_B * SET_B * !Q * Q_N)	0.01487	0.01520	0.03819
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01168	0.01196	0.03436
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00775	0.00802	0.03044
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01391	0.01424	0.03718
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00998	0.01031	0.03326
	(!D * SET_B * !Q * Q_N)	0.01103	0.01127	0.03385
	(!D * SET_B * !Q * Q_N)	0.00710	0.00734	0.02994
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01927	0.01941	0.04192
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01487	0.01501	0.03752
	(!D * !SET_B * Q * !Q_N)	0.01231	0.01247	0.03513
	(!D * !SET_B * Q * !Q_N)	0.00841	0.00857	0.03123

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01838	0.01871	0.04169
	(D * RESET_B * SET_B * !Q * Q_N)	0.01491	0.01526	0.03822
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01166	0.01194	0.03434
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00773	0.00800	0.03042
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01392	0.01425	0.03717
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00999	0.01032	0.03325
	(!D * SET_B * !Q * Q_N)	0.01104	0.01128	0.03386
	(!D * SET_B * !Q * Q_N)	0.00712	0.00735	0.02995
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01928	0.01942	0.04192
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01489	0.01502	0.03753
	(!D * !SET_B * Q * !Q_N)	0.01226	0.01242	0.03507
	(!D * !SET_B * Q * !Q_N)	0.00836	0.00852	0.03117

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)	0.00878	0.00955	0.03264
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01271	0.01348	0.03655
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01239	0.01308	0.03581
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01633	0.01701	0.03973
	(!D * SET_B * !Q * Q_N)	0.00953	0.01028	0.03332
	(!D * SET_B * !Q * Q_N)	0.01346	0.01419	0.03723
	(!D * !SET_B * Q * !Q_N)	0.01215	0.01285	0.03638
	(!D * !SET_B * Q * !Q_N)	0.01606	0.01675	0.04028
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00878	0.00956	0.03264
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01272	0.01349	0.03656
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01236	0.01304	0.03577
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01629	0.01697	0.03970
	(!D * SET_B * !Q * Q_N)	0.00951	0.01026	0.03330
	(!D * SET_B * !Q * Q_N)	0.01345	0.01418	0.03722
	(!D * !SET_B * Q * !Q_N)	0.01219	0.01289	0.03642
	(!D * !SET_B * Q * !Q_N)	0.01611	0.01679	0.04033

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00151	0.00186	0.00623	0.00292	1.06215	0.96859

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	0.75623	1.53601

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)	0.39198	0.91106	6.46724
	SET_B->Q (FR)	0.18404	0.91021	8.58410

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.30037	0.56466	2.48801
	RESET_B->Q (FF)	0.24335	0.70932	4.62630
	SET_B->Q (RF)	0.14862	0.42506	2.42314

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)	0.26729	0.80873	6.40385
	RESET_B->Q_N (FR)	0.21097	0.96093	8.55842
	SET_B->Q_N (RR)	0.11582	0.67982	6.54723

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)	0.31892	0.63578	2.30750
	SET_B->Q_N (FF)	0.12153	0.62963	4.63774

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)	-0.03512	-0.07498	-0.29842
	setup	CLK (R)	0.08017	0.09870	0.36271

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)	-0.09771	-0.22880	-2.81429
	setup	CLK (R)	0.15816	0.28046	3.02686

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)	-0.03512	-0.07498	-0.29842
	setup	CLK (R)	0.08017	0.09870	0.36271

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)	-0.09771	-0.22880	-2.81429
	setup	CLK (R)	0.15816	0.28046	3.02686

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)	0.08816	0.09984	0.51019
	removal	CLK (R)	-0.03951	-0.05881	-0.18090

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)	0.08816	0.09984	0.51019
	removal	CLK (R)	-0.03951	-0.05881	-0.18090

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 ()	0.19012	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.19519	0.67627	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)	0.01310	0.00482	2.88754
	removal	CLK (R)	0.06308	0.08470	0.08383
	hold	RESET_B (R)	-0.05770	-0.10412	-0.43154
	setup	RESET_B (R)	0.10393	0.14430	0.79446

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)	0.01310	0.00482	2.88754
	removal	CLK (R)	0.06308	0.08470	0.08383
	hold	RESET_B (R)	-0.05770	-0.10559	-0.43688
	hold	RESET_B (R)	-0.05785	-0.10412	-0.43154
	setup	RESET_B (R)	0.10109	0.14183	0.79446
	setup	RESET_B (R)	0.10393	0.14430	0.79389

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 ()	0.12429	0.67627	16.50020
	min_pulse_width	SET_B ()	0.13189	0.67627	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 ()	0.10150	0.67627	16.50020
	min_pulse_width	CLK ()	0.13189	0.67627	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 ()	0.16480	0.67627	16.50020
	min_pulse_width	CLK ()	0.23317	0.67627	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	0.01463	0.01506	0.02683
	CLK	0.01267	0.01309	0.02482
	SET_B	0.01285	0.01377	0.03675
	SET_B	0.01699	0.01793	0.04089

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01471	0.01523	0.02700
	CLK	0.01255	0.01293	0.02480
	RESET_B	0.01500	0.01540	0.02301
	RESET_B	0.01612	0.01653	0.02380
	SET_B	0.01628	0.01615	0.03556
	SET_B	0.01211	0.01196	0.03137

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01473	0.01521	0.02722
	CLK	0.01256	0.01295	0.02505
	RESET_B	0.01501	0.01542	0.02306
	RESET_B	0.01614	0.01654	0.02418
	SET_B	0.01630	0.01618	0.03577
	SET_B	0.01213	0.01196	0.03159

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01461	0.01504	0.02656
	CLK	0.01264	0.01307	0.02461
	SET_B	0.01280	0.01372	0.03634
	SET_B	0.01694	0.01787	0.04046

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00224	0.00254	0.01060
	CLK	0.00010	0.00039	0.00846
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00920	0.00921	0.01709
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00730	0.00730	0.01519
	(!CLK * !SET_B * Q * !Q_N)	0.00537	0.00554	0.01276
	(!CLK * !SET_B * Q * !Q_N)	0.00299	0.00315	0.01038
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00431	0.00447	0.01164
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00194	0.00210	0.00928

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00014	0.00023	0.00813
	CLK	0.00200	0.00236	0.01026
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00706	0.00710	0.01488
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00896	0.00901	0.01678
	(!CLK * !SET_B * Q * !Q_N)	0.00170	0.00189	0.00871
	(!CLK * !SET_B * Q * !Q_N)	0.00409	0.00428	0.01109
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00257	0.00277	0.00971
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00493	0.00515	0.01207

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)	0.00586	0.00604	0.02062
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00320	0.00335	0.01795
	(!SET_B * Q * !Q_N)	0.00632	0.00656	0.02140
	(!SET_B * Q * !Q_N)	0.00358	0.00382	0.01867
	(!CLK * D * SET_B * !Q * Q_N)	0.01089	0.01083	0.02558
	(!CLK * D * SET_B * !Q * Q_N)	0.00870	0.00862	0.02337

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)	0.00306	0.00352	0.01839
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00574	0.00620	0.02107
	(!SET_B * Q * !Q_N)	0.00155	0.00208	0.01712
	(!SET_B * Q * !Q_N)	0.00430	0.00484	0.01986
	(!CLK * D * SET_B * !Q * Q_N)	0.00809	0.00847	0.02379
	(!CLK * D * SET_B * !Q * Q_N)	0.01029	0.01069	0.02600

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)	0.00313	0.00315	0.00312
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00443	-0.00445	-0.00442
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00835	0.00832	0.02831
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00022	0.00016	0.02017

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)	-0.00305	-0.00313	-0.00311
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00445	0.00447	0.00444
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00197	0.00274	0.02436
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01008	0.01088	0.03251

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)	0.01340	0.01364	0.03628
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00925	0.00949	0.03213
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01616	0.01631	0.03922
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01224	0.01238	0.03531
	(!D * SET_B * !Q * Q_N)	0.01359	0.01385	0.03658
	(!D * SET_B * !Q * Q_N)	0.00945	0.00969	0.03244
	(!D * !SET_B * Q * !Q_N)	0.01694	0.01727	0.03998
	(!D * !SET_B * Q * !Q_N)	0.01254	0.01288	0.03559

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)	0.01406	0.01470	0.03846
	(D * RESET_B * SET_B * !Q * Q_N)	0.01843	0.01908	0.04283
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00705	0.00783	0.03124
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01119	0.01198	0.03538
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00889	0.00957	0.03338
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01279	0.01348	0.03730
	(!D * SET_B * !Q * Q_N)	0.00695	0.00769	0.03102
	(!D * SET_B * !Q * Q_N)	0.01109	0.01185	0.03516
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01491	0.01582	0.03981
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01884	0.01975	0.04374
	(!D * !SET_B * Q * !Q_N)	0.00950	0.01041	0.03438
	(!D * !SET_B * Q * !Q_N)	0.01389	0.01481	0.03877

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00179	0.00542	0.00298	1.08484	1.05744
sky130_fd_sc_hs__dfrbp_2	0.00164	0.00521	0.00298	2.12479	2.08801

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.35451	0.70691
sky130_fd_sc_hs__dfrbp_2	0.00000	0.36294	0.60540

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)	0.24524	0.76420	6.42376
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.29356	0.72489	6.93517

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.22372	0.48657	2.30975
	RESET_B->Q (FF)	0.31378	0.81907	5.08335
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.25546	0.48607	2.39534
	RESET_B->Q (FF)	0.37000	0.85223	5.27001

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)	0.19018	0.72867	6.34881
	RESET_B->Q_N (FR)	0.27965	1.05619	9.11155
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.18498	0.62536	6.25334
	RESET_B->Q_N (FR)	0.29971	0.98942	9.12373

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)	0.18577	0.50837	2.32966
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.19202	0.50963	2.42097

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)	-0.05966	-0.13374	-0.62860
	setup	CLK (R)	0.11590	0.17432	0.73190
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05840	-0.13628	-0.65473
	setup	CLK (R)	0.13081	0.18499	0.82588

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)	-0.06880	-0.21243	-2.69512
	setup	CLK (R)	0.16895	0.30558	3.11227
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.09329	-0.24168	-3.03194
	setup	CLK (R)	0.19268	0.32760	3.18001

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)	-0.05966	-0.13374	-0.62860
	setup	CLK (R)	0.11590	0.17432	0.73190
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.05840	-0.13628	-0.65473
	setup	CLK (R)	0.13081	0.18499	0.82588

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)	-0.06880	-0.21243	-2.69512
	setup	CLK (R)	0.16895	0.30558	3.11227
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.09329	-0.24168	-3.03194
	setup	CLK (R)	0.19268	0.32760	3.18001

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)	0.12935	0.16847	0.91810
	removal	CLK (R)	-0.09422	-0.15157	-0.84953
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.14361	0.17832	0.97591
	removal	CLK (R)	-0.10710	-0.16049	-0.87780

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)	0.12935	0.16847	0.91810
	removal	CLK (R)	-0.09422	-0.15157	-0.84953
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.14361	0.17832	0.97591
	removal	CLK (R)	-0.10710	-0.16049	-0.87780

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 ()	0.15974	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.13189	0.67627	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.17240	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.14202	0.67627	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 ()	0.13695	0.67627	16.50020
	min_pulse_width	CLK ()	0.08378	0.67627	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.18253	0.67627	16.50020
	min_pulse_width	CLK ()	0.10150	0.67627	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 ()	0.17493	0.67627	16.50020
	min_pulse_width	CLK ()	0.21798	0.67627	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.19266	0.67627	16.50020
	min_pulse_width	CLK ()	0.22304	0.67627	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	0.01363	0.01394	0.02555
	CLK	0.01155	0.01183	0.02345
sky130_fd_sc_hs__dfrbp_2	CLK	0.01529	0.01580	0.02749
	CLK	0.01323	0.01374	0.02544

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01386	0.01437	0.02585
	CLK	0.01173	0.01217	0.02371
	RESET_B	0.01064	0.01090	0.02096
	RESET_B	0.01477	0.01504	0.02461
sky130_fd_sc_hs__dfrbp_2	CLK	0.01551	0.01638	0.02821
	CLK	0.01347	0.01432	0.02611
	RESET_B	0.01350	0.01414	0.02448
	RESET_B	0.01734	0.01803	0.02761

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01387	0.01441	0.02618
	CLK	0.01174	0.01219	0.02405
	RESET_B	0.01065	0.01091	0.02074
	RESET_B	0.01478	0.01506	0.02480
sky130_fd_sc_hs__dfrbp_2	CLK	0.01553	0.01656	0.02862
	CLK	0.01349	0.01436	0.02656
	RESET_B	0.01352	0.01407	0.02424
	RESET_B	0.01736	0.01804	0.02784

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01362	0.01393	0.02519
	CLK	0.01154	0.01181	0.02311
sky130_fd_sc_hs__dfrbp_2	CLK	0.01529	0.01588	0.02736
	CLK	0.01323	0.01373	0.02526

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00357	0.00367	0.01101
	(CLK * RESET_B)	0.00079	0.00088	0.00823
	(CLK * !RESET_B)	0.00039	0.00039	0.00038
	(CLK * !RESET_B)	-0.00120	-0.00120	-0.00121
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01015	0.01024	0.01806
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00725	0.00733	0.01515
	(!CLK * !RESET_B)	0.00039	0.00039	0.00038
	(!CLK * !RESET_B)	-0.00120	-0.00120	-0.00121
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00410	0.00421	0.01136
	(CLK * RESET_B)	0.00168	0.00177	0.00893
	(CLK * !RESET_B)	0.00045	0.00044	0.00043
	(CLK * !RESET_B)	-0.00103	-0.00103	-0.00104
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01244	0.01258	0.02026
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01017	0.01029	0.01797
	(!CLK * !RESET_B)	0.00044	0.00044	0.00043
	(!CLK * !RESET_B)	-0.00102	-0.00102	-0.00104

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00049	0.00063	0.00778
	(CLK * RESET_B)	0.00328	0.00341	0.01057
	(CLK * !RESET_B)	-0.00038	-0.00037	-0.00037
	(CLK * !RESET_B)	0.00123	0.00122	0.00122
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00628	0.00649	0.01504
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00920	0.00940	0.01796
	(!CLK * !RESET_B)	-0.00038	-0.00038	-0.00037
	(!CLK * !RESET_B)	0.00123	0.00124	0.00122
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00083	0.00093	0.00791
	(CLK * RESET_B)	0.00326	0.00336	0.01034
	(CLK * !RESET_B)	-0.00043	-0.00042	-0.00042
	(CLK * !RESET_B)	0.00106	0.00105	0.00105
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00763	0.00776	0.01592
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00993	0.01005	0.01820
	(!CLK * !RESET_B)	-0.00043	-0.00043	-0.00042
	(!CLK * !RESET_B)	0.00106	0.00107	0.00105

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)	0.00670	0.00666	0.01324
	(CLK * D * !Q * Q_N)	-0.00138	-0.00144	0.00514
	(CLK * !D * !Q * Q_N)	0.00319	0.00322	0.00319
	(CLK * !D * !Q * Q_N)	-0.00357	-0.00359	-0.00357
	(!CLK * D * !Q * Q_N)	0.01360	0.01327	0.02356
	(!CLK * D * !Q * Q_N)	0.00542	0.00504	0.01534
	(!CLK * !D * !Q * Q_N)	0.00311	0.00311	0.00311
	(!CLK * !D * !Q * Q_N)	-0.00365	-0.00364	-0.00365
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00747	0.00747	0.01391
	(CLK * D * !Q * Q_N)	-0.00024	-0.00027	0.00617
	(CLK * !D * !Q * Q_N)	0.00347	0.00350	0.00348
	(CLK * !D * !Q * Q_N)	-0.00314	-0.00315	-0.00314
	(!CLK * D * !Q * Q_N)	0.01611	0.01578	0.02586
	(!CLK * D * !Q * Q_N)	0.00856	0.00819	0.01830
	(!CLK * !D * !Q * Q_N)	0.00342	0.00344	0.00343
	(!CLK * !D * !Q * Q_N)	-0.00319	-0.00320	-0.00319

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)	-0.00179	-0.00171	0.00500
	(CLK * D * !Q * Q_N)	0.00628	0.00638	0.01309
	(CLK * !D * !Q * Q_N)	-0.00309	-0.00322	-0.00319
	(CLK * !D * !Q * Q_N)	0.00363	0.00361	0.00358
	(!CLK * D * !Q * Q_N)	0.00484	0.00451	0.01607
	(!CLK * D * !Q * Q_N)	0.01302	0.01274	0.02429
	(!CLK * !D * !Q * Q_N)	-0.00302	-0.00311	-0.00311
	(!CLK * !D * !Q * Q_N)	0.00370	0.00369	0.00366
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00181	-0.00170	0.00495
	(CLK * D * !Q * Q_N)	0.00590	0.00602	0.01267
	(CLK * !D * !Q * Q_N)	-0.00341	-0.00350	-0.00348
	(CLK * !D * !Q * Q_N)	0.00323	0.00319	0.00316
	(!CLK * D * !Q * Q_N)	0.00596	0.00567	0.01671
	(!CLK * D * !Q * Q_N)	0.01356	0.01323	0.02429
	(!CLK * !D * !Q * Q_N)	-0.00336	-0.00344	-0.00343
	(!CLK * !D * !Q * Q_N)	0.00327	0.00323	0.00321

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)	0.01292	0.01312	0.03509
	(D * RESET_B * Q * !Q_N)	0.00870	0.00889	0.03087
	(D * !RESET_B * !Q * Q_N)	0.01327	0.01347	0.03545
	(D * !RESET_B * !Q * Q_N)	0.00905	0.00924	0.03123
	(!D * !Q * Q_N)	0.01327	0.01347	0.03543
	(!D * !Q * Q_N)	0.00904	0.00923	0.03121
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01175	0.01198	0.03405
	(D * RESET_B * Q * !Q_N)	0.00763	0.00785	0.02993
	(D * !RESET_B * !Q * Q_N)	0.01176	0.01199	0.03405
	(D * !RESET_B * !Q * Q_N)	0.00764	0.00786	0.02993
	(!D * !Q * Q_N)	0.01175	0.01198	0.03405
	(!D * !Q * Q_N)	0.00764	0.00785	0.02993

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)	0.00713	0.00791	0.03054
	(D * RESET_B * Q * !Q_N)	0.01136	0.01214	0.03476
	(D * RESET_B * !Q * Q_N)	0.01305	0.01376	0.03705
	(D * RESET_B * !Q * Q_N)	0.01715	0.01785	0.04113
	(D * !RESET_B * !Q * Q_N)	0.00665	0.00744	0.03011
	(D * !RESET_B * !Q * Q_N)	0.01088	0.01165	0.03433
	(!D * RESET_B * Q * !Q_N)	0.01379	0.01472	0.03790
	(!D * RESET_B * Q * !Q_N)	0.01815	0.01907	0.04227
	(!D * !Q * Q_N)	0.00664	0.00743	0.03013
	(!D * !Q * Q_N)	0.01087	0.01164	0.03435
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00719	0.00795	0.03064
	(D * RESET_B * Q * !Q_N)	0.01132	0.01207	0.03476
	(D * RESET_B * !Q * Q_N)	0.01593	0.01654	0.03974
	(D * RESET_B * !Q * Q_N)	0.02017	0.02078	0.04399
	(D * !RESET_B * !Q * Q_N)	0.00714	0.00790	0.03064
	(D * !RESET_B * !Q * Q_N)	0.01125	0.01203	0.03476
	(!D * RESET_B * Q * !Q_N)	0.01506	0.01596	0.03906
	(!D * RESET_B * Q * !Q_N)	0.01904	0.01993	0.04303
	(!D * !Q * Q_N)	0.00714	0.00790	0.03065
	(!D * !Q * Q_N)	0.01124	0.01203	0.03476

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00176	0.00523	0.00285	1.04409

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.33162	0.65178

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)	0.26244	0.97862	8.64748

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)	0.20930	0.65362	4.45522
	RESET_B->Q (FF)	0.28860	0.78875	4.94707

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)	0.02282	0.09028	1.91525
	setup	CLK_N (F)	0.06447	-0.00400	-1.84684

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)	-0.05962	-0.11912	-0.68305
	setup	CLK_N (F)	0.20679	0.25440	0.73393

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)	0.02282	0.09028	1.91525
	setup	CLK_N (F)	0.06447	-0.00400	-1.84684

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)	-0.05962	-0.11912	-0.68305
	setup	CLK_N (F)	0.20679	0.25440	0.73393

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)	0.07331	-0.01518	-1.71624
	removal	CLK_N (F)	-0.03029	0.04458	1.72467

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)	0.07331	-0.01518	-1.71624
	removal	CLK_N (F)	-0.03029	0.04458	1.72467

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 ()	0.12429	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.15721	0.67627	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 ()	0.13189	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.21038	0.67627	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 ()	0.14961	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.13189	0.67627	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	0.02122	0.02240	0.04663
	CLK_N	0.02517	0.02635	0.05064

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01964	0.02041	0.04448
	CLK_N	0.02348	0.02425	0.04797
	RESET_B	0.01901	0.01912	0.03880
	RESET_B	0.02670	0.02682	0.04594

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)	0.01005	0.01015	0.01797
	(CLK_N * RESET_B)	0.00750	0.00759	0.01542
	(CLK_N * !RESET_B)	0.00039	0.00039	0.00038
	(CLK_N * !RESET_B)	-0.00119	-0.00119	-0.00120
	(!CLK_N * RESET_B)	0.00347	0.00357	0.01091
	(!CLK_N * RESET_B)	0.00084	0.00093	0.00828
	(!CLK_N * !RESET_B)	0.00039	0.00039	0.00038
	(!CLK_N * !RESET_B)	-0.00118	-0.00119	-0.00120

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)	0.00721	0.00740	0.01582
	(CLK_N * RESET_B)	0.00975	0.00995	0.01838
	(CLK_N * !RESET_B)	-0.00037	-0.00038	-0.00037
	(CLK_N * !RESET_B)	0.00121	0.00123	0.00121
	(!CLK_N * RESET_B)	0.00059	0.00072	0.00787
	(!CLK_N * RESET_B)	0.00321	0.00335	0.01051
	(!CLK_N * !RESET_B)	-0.00038	-0.00038	-0.00037
	(!CLK_N * !RESET_B)	0.00122	0.00121	0.00121

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)	0.01346	0.01320	0.02342
	(CLK_N * D * !Q)	0.00586	0.00554	0.01580
	(CLK_N * !D * !Q)	0.00335	0.00338	0.00335
	(CLK_N * !D * !Q)	-0.00317	-0.00318	-0.00317
	(!CLK_N * D * !Q)	0.00640	0.00641	0.01298
	(!CLK_N * D * !Q)	-0.00131	-0.00133	0.00525
	(!CLK_N * !D * !Q)	0.00327	0.00330	0.00328
	(!CLK_N * !D * !Q)	-0.00325	-0.00326	-0.00325

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)	0.00562	0.00537	0.01682
	(CLK_N * D * !Q)	0.01328	0.01298	0.02447
	(CLK_N * !D * !Q)	-0.00329	-0.00338	-0.00335
	(CLK_N * !D * !Q)	0.00325	0.00321	0.00319
	(!CLK_N * D * !Q)	-0.00160	-0.00151	0.00524
	(!CLK_N * D * !Q)	0.00610	0.00623	0.01296
	(!CLK_N * !D * !Q)	-0.00321	-0.00328	-0.00328
	(!CLK_N * !D * !Q)	0.00333	0.00328	0.00326

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)	0.01235	0.01246	0.03479
	(D * RESET_B * Q)	0.00844	0.00855	0.03088
	(D * RESET_B * !Q)	0.01913	0.01932	0.04202
	(D * RESET_B * !Q)	0.01530	0.01548	0.03820
	(D * !RESET_B * !Q)	0.01214	0.01228	0.03463
	(D * !RESET_B * !Q)	0.00824	0.00837	0.03073
	(!D * RESET_B * Q)	0.01867	0.01862	0.04118
	(!D * RESET_B * Q)	0.01469	0.01463	0.03719
	(!D * !Q)	0.01214	0.01227	0.03462
	(!D * !Q)	0.00823	0.00837	0.03072

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)	0.00879	0.00947	0.03238
	(D * RESET_B * Q)	0.01270	0.01338	0.03630
	(D * !RESET_B * !Q)	0.00890	0.00956	0.03250
	(D * !RESET_B * !Q)	0.01281	0.01347	0.03640
	(!D * !Q)	0.00888	0.00955	0.03248
	(!D * !Q)	0.01279	0.01346	0.03637

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00177	0.00542	0.00300	1.09123
sky130_fd_sc_hs__dfrtp_2	0.00177	0.00532	0.00298	2.07830
sky130_fd_sc_hs__dfrtp_4	0.00178	0.00552	0.00298	4.13350

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	0.33162	0.65178
sky130_fd_sc_hs__dfrtp_2	0.00000	0.37070	0.65797
sky130_fd_sc_hs__dfrtp_4	0.00000	0.54301	0.96337

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)	0.20723	0.72977	6.38202
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.20547	0.62208	6.23202
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.26860	0.61678	6.40557

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.21404	0.47759	2.31976
	RESET_B->Q (FF)	0.29608	0.80218	5.08310
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.23729	0.47156	2.23558
	RESET_B->Q (FF)	0.31771	0.79352	4.99905
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.23901	0.45019	2.42372
	RESET_B->Q (FF)	0.32796	0.77957	5.19717

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)	-0.06415	-0.13654	-0.64478
	setup	CLK (R)	0.13971	0.18860	0.77406
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.06225	-0.13796	-0.63655
	setup	CLK (R)	0.13625	0.18680	0.76980
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06515	-0.13565	-0.62495
	setup	CLK (R)	0.13734	0.18653	0.79546

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)	-0.06151	-0.20258	-2.69458
	setup	CLK (R)	0.16536	0.30600	3.10883
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05641	-0.19914	-2.67865
	setup	CLK (R)	0.16709	0.30500	3.11476
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07485	-0.21233	-2.49950
	setup	CLK (R)	0.17918	0.31358	3.13640

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)	-0.06415	-0.13654	-0.64478
	setup	CLK (R)	0.13971	0.18860	0.77406
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.06225	-0.13796	-0.63655
	setup	CLK (R)	0.13625	0.18680	0.76980
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06515	-0.13565	-0.62495
	setup	CLK (R)	0.13734	0.18653	0.79546

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)	-0.06151	-0.20258	-2.69458
	setup	CLK (R)	0.16536	0.30600	3.10883
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05641	-0.19914	-2.67865
	setup	CLK (R)	0.16709	0.30500	3.11476
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.07485	-0.21233	-2.49950
	setup	CLK (R)	0.17918	0.31358	3.13640

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)	0.15073	0.18454	0.94006
	removal	CLK (R)	-0.09504	-0.15157	-0.86047
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.14541	0.18032	0.93881
	removal	CLK (R)	-0.09327	-0.14935	-0.85471
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.14817	0.18032	0.95482
	removal	CLK (R)	-0.09989	-0.15380	-0.85025

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)	0.15073	0.18454	0.94006
	removal	CLK (R)	-0.09504	-0.15157	-0.86047
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.14541	0.18032	0.93881
	removal	CLK (R)	-0.09327	-0.14935	-0.85471
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.14817	0.18032	0.95482
	removal	CLK (R)	-0.09989	-0.15380	-0.85025

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 ()	0.15721	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.12429	0.67627	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.15974	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.12682	0.67627	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.16480	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.12936	0.67627	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 ()	0.10150	0.67627	16.50020
	min_pulse_width	CLK ()	0.07872	0.67627	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.10404	0.67627	16.50020
	min_pulse_width	CLK ()	0.08378	0.67627	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.14455	0.67627	16.50020
	min_pulse_width	CLK ()	0.08884	0.67627	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 ()	0.19772	0.67627	16.50020
	min_pulse_width	CLK ()	0.21544	0.67627	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.19519	0.67627	16.50020
	min_pulse_width	CLK ()	0.21544	0.67627	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.20278	0.67627	16.50020
	min_pulse_width	CLK ()	0.23317	0.67627	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	0.02435	0.02487	0.04805
	CLK	0.02020	0.02072	0.04407
sky130_fd_sc_hs__dfrtp_2	CLK	0.02686	0.02764	0.05080
	CLK	0.02272	0.02353	0.04728
sky130_fd_sc_hs__dfrtp_4	CLK	0.03386	0.03520	0.05837
	CLK	0.02957	0.03097	0.05483

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.02604	0.02681	0.04989
	CLK	0.02165	0.02233	0.04533
	RESET_B	0.01919	0.01951	0.03931
	RESET_B	0.02740	0.02772	0.04690
sky130_fd_sc_hs__dfrtp_2	CLK	0.02795	0.02916	0.05214
	CLK	0.02360	0.02460	0.04753
	RESET_B	0.02126	0.02192	0.04237
	RESET_B	0.02935	0.02998	0.04921
sky130_fd_sc_hs__dfrtp_4	CLK	0.03607	0.03788	0.06057
	CLK	0.03156	0.03320	0.05606
	RESET_B	0.02890	0.02993	0.04956
	RESET_B	0.03722	0.03846	0.05774

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00353	0.00364	0.01098
	(CLK * RESET_B)	0.00077	0.00086	0.00822
	(CLK * !RESET_B)	0.00038	0.00038	0.00037
	(CLK * !RESET_B)	-0.00118	-0.00118	-0.00119
	(!CLK * RESET_B)	0.01040	0.01051	0.01838
	(!CLK * RESET_B)	0.00749	0.00757	0.01546
	(!CLK * !RESET_B)	0.00038	0.00038	0.00037
	(!CLK * !RESET_B)	-0.00117	-0.00118	-0.00119
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00344	0.00355	0.01091
	(CLK * RESET_B)	0.00072	0.00081	0.00819
	(CLK * !RESET_B)	0.00038	0.00038	0.00037
	(CLK * !RESET_B)	-0.00118	-0.00118	-0.00119
	(!CLK * RESET_B)	0.01000	0.01012	0.01805
	(!CLK * RESET_B)	0.00715	0.00725	0.01518
	(!CLK * !RESET_B)	0.00038	0.00038	0.00037
	(!CLK * !RESET_B)	-0.00117	-0.00118	-0.00119
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00355	0.00366	0.01100
	(CLK * RESET_B)	0.00081	0.00089	0.00824
	(CLK * !RESET_B)	0.00039	0.00039	0.00038
	(CLK * !RESET_B)	-0.00119	-0.00119	-0.00120
	(!CLK * RESET_B)	0.01135	0.01143	0.01920
	(!CLK * RESET_B)	0.00844	0.00851	0.01629
	(!CLK * !RESET_B)	0.00039	0.00039	0.00038
	(!CLK * !RESET_B)	-0.00118	-0.00118	-0.00120

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00048	0.00062	0.00778
	(CLK * RESET_B)	0.00325	0.00338	0.01054
	(CLK * !RESET_B)	-0.00037	-0.00036	-0.00036
	(CLK * !RESET_B)	0.00121	0.00120	0.00120
	(!CLK * RESET_B)	0.00659	0.00680	0.01539
	(!CLK * RESET_B)	0.00952	0.00973	0.01831
	(!CLK * !RESET_B)	-0.00037	-0.00037	-0.00036
	(!CLK * !RESET_B)	0.00121	0.00122	0.00120
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00048	0.00062	0.00781
	(CLK * RESET_B)	0.00321	0.00335	0.01053
	(CLK * !RESET_B)	-0.00037	-0.00036	-0.00036
	(CLK * !RESET_B)	0.00121	0.00121	0.00120
	(!CLK * RESET_B)	0.00659	0.00680	0.01548
	(!CLK * RESET_B)	0.00946	0.00966	0.01834
	(!CLK * !RESET_B)	-0.00037	-0.00037	-0.00036
	(!CLK * !RESET_B)	0.00121	0.00122	0.00120
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00049	0.00063	0.00778
	(CLK * RESET_B)	0.00325	0.00338	0.01054
	(CLK * !RESET_B)	-0.00037	-0.00037	-0.00037
	(CLK * !RESET_B)	0.00122	0.00121	0.00121
	(!CLK * RESET_B)	0.00673	0.00692	0.01544
	(!CLK * RESET_B)	0.00966	0.00983	0.01836
	(!CLK * !RESET_B)	-0.00037	-0.00037	-0.00037
	(!CLK * !RESET_B)	0.00122	0.00123	0.00121

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)	0.00667	0.00665	0.01322
	(CLK * D * !Q)	-0.00138	-0.00146	0.00514
	(CLK * !D * !Q)	0.00317	0.00322	0.00319
	(CLK * !D * !Q)	-0.00353	-0.00357	-0.00355
	(!CLK * D * !Q)	0.01391	0.01359	0.02391
	(!CLK * D * !Q)	0.00569	0.00536	0.01568
	(!CLK * !D * !Q)	0.00307	0.00309	0.00307
	(!CLK * !D * !Q)	-0.00366	-0.00367	-0.00366
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00653	0.00652	0.01311
	(CLK * D * !Q)	-0.00141	-0.00147	0.00514
	(CLK * !D * !Q)	0.00314	0.00319	0.00316
	(CLK * !D * !Q)	-0.00348	-0.00352	-0.00350
	(!CLK * D * !Q)	0.01341	0.01315	0.02351
	(!CLK * D * !Q)	0.00538	0.00506	0.01542
	(!CLK * !D * !Q)	0.00306	0.00309	0.00306
	(!CLK * !D * !Q)	-0.00360	-0.00362	-0.00360
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00685	0.00684	0.01340
	(CLK * D * !Q)	-0.00131	-0.00138	0.00521
	(CLK * !D * !Q)	0.00334	0.00340	0.00337
	(CLK * !D * !Q)	-0.00348	-0.00352	-0.00350
	(!CLK * D * !Q)	0.01476	0.01445	0.02460
	(!CLK * D * !Q)	0.00643	0.00609	0.01628
	(!CLK * !D * !Q)	0.00309	0.00311	0.00309
	(!CLK * !D * !Q)	-0.00377	-0.00377	-0.00376

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)	-0.00180	-0.00175	0.00499
	(CLK * D * !Q)	0.00625	0.00633	0.01307
	(CLK * !D * !Q)	-0.00309	-0.00321	-0.00319
	(CLK * !D * !Q)	0.00361	0.00359	0.00356
	(!CLK * D * !Q)	0.00504	0.00474	0.01630
	(!CLK * D * !Q)	0.01324	0.01298	0.02453
	(!CLK * !D * !Q)	-0.00298	-0.00309	-0.00307
	(!CLK * !D * !Q)	0.00371	0.00370	0.00367
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00177	-0.00171	0.00505
	(CLK * D * !Q)	0.00616	0.00626	0.01301
	(CLK * !D * !Q)	-0.00306	-0.00318	-0.00316
	(CLK * !D * !Q)	0.00356	0.00354	0.00351
	(!CLK * D * !Q)	0.00506	0.00472	0.01642
	(!CLK * D * !Q)	0.01311	0.01283	0.02452
	(!CLK * !D * !Q)	-0.00297	-0.00308	-0.00306
	(!CLK * !D * !Q)	0.00365	0.00364	0.00361
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00197	-0.00190	0.00483
	(CLK * D * !Q)	0.00619	0.00631	0.01301
	(CLK * !D * !Q)	-0.00326	-0.00339	-0.00337
	(CLK * !D * !Q)	0.00355	0.00354	0.00351
	(!CLK * D * !Q)	0.00534	0.00495	0.01644
	(!CLK * D * !Q)	0.01364	0.01328	0.02479
	(!CLK * !D * !Q)	-0.00300	-0.00311	-0.00309
	(!CLK * !D * !Q)	0.00382	0.00381	0.00378

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)	0.01335	0.01353	0.03546
	(D * RESET_B * Q)	0.00908	0.00924	0.03119
	(D * !RESET_B * !Q)	0.01386	0.01403	0.03596
	(D * !RESET_B * !Q)	0.00958	0.00975	0.03168
	(!D * !Q)	0.01386	0.01403	0.03596
	(!D * !Q)	0.00958	0.00974	0.03168
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01328	0.01346	0.03531
	(D * RESET_B * Q)	0.00902	0.00919	0.03105
	(D * !RESET_B * !Q)	0.01378	0.01396	0.03588
	(D * !RESET_B * !Q)	0.00953	0.00969	0.03162
	(!D * !Q)	0.01378	0.01395	0.03589
	(!D * !Q)	0.00952	0.00968	0.03164
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01401	0.01418	0.03583
	(D * RESET_B * Q)	0.00959	0.00976	0.03142
	(D * !RESET_B * !Q)	0.01441	0.01458	0.03624
	(D * !RESET_B * !Q)	0.00999	0.01016	0.03183
	(!D * !Q)	0.01441	0.01457	0.03628
	(!D * !Q)	0.00999	0.01016	0.03187

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)**	0.00719	0.00794	0.03054
	(D * RESET_B * Q)	0.01145	0.01223	0.03482
	(D * RESET_B * !Q)	0.01341	0.01411	0.03736
	(D * RESET_B * !Q)	0.01753	0.01821	0.04148
	(D * !RESET_B * !Q)	0.00662	0.00739	0.03003
	(D * !RESET_B * !Q)	0.01090	0.01168	0.03431
	(!D * RESET_B * Q)	0.01419	0.01504	0.03823
	(!D * RESET_B * Q)	0.01861	0.01948	0.04268
	(!D * !Q)	0.00662	0.00739	0.03004
	(!D * !Q)	0.01090	0.01167	0.03431
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00721	0.00796	0.03057
	(D * RESET_B * Q)	0.01144	0.01223	0.03482
	(D * RESET_B * !Q)	0.01311	0.01381	0.03709
	(D * RESET_B * !Q)	0.01724	0.01793	0.04120
	(D * !RESET_B * !Q)	0.00664	0.00741	0.03005
	(D * !RESET_B * !Q)	0.01090	0.01168	0.03431
	(!D * RESET_B * Q)	0.01421	0.01506	0.03826
	(!D * RESET_B * Q)	0.01858	0.01946	0.04265
	(!D * !Q)	0.00664	0.00741	0.03006
	(!D * !Q)	0.01090	0.01167	0.03432
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00748	0.00822	0.03069
	(D * RESET_B * Q)	0.01187	0.01264	0.03510
	(D * RESET_B * !Q)	0.01475	0.01538	0.03844
	(D * RESET_B * !Q)	0.01898	0.01964	0.04270
	(D * !RESET_B * !Q)	0.00702	0.00777	0.03026
	(D * !RESET_B * !Q)	0.01141	0.01219	0.03467
	(!D * RESET_B * Q)	0.01452	0.01540	0.03846
	(!D * RESET_B * Q)	0.01908	0.01997	0.04303
	(!D * !Q)	0.00702	0.00776	0.03026
	(!D * !Q)	0.01141	0.01218	0.03468

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00175	0.00325	0.00295	1.03478	0.98426
sky130_fd_sc_hs__dfsbp_2	0.00175	0.00322	0.00295	2.11345	2.03676

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.36310	0.44486
sky130_fd_sc_hs__dfsbp_2	0.00000	0.31825	0.34560

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)	0.28108	0.79746	6.37534
	SET_B->Q (FR)	0.28262	1.07431	9.27735
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.33566	0.73580	6.41267
	SET_B->Q (FR)	0.34490	1.02667	9.43491

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.25341	0.50896	2.22664
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.28629	0.50806	2.32320

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)	0.21921	0.77105	6.38912
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.21949	0.66056	6.34181

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)	0.21441	0.54036	2.27549
	SET_B->Q_N (FF)	0.21082	0.81566	5.21898
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.23525	0.54390	2.37680
	SET_B->Q_N (FF)	0.23688	0.82986	5.45276

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)	-0.05545	-0.12683	-0.60083
	setup	CLK (R)	0.09419	0.15354	0.68388
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05498	-0.12574	-0.58772
	setup	CLK (R)	0.08612	0.14929	0.67786

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)	-0.05414	-0.19487	-2.40521
	setup	CLK (R)	0.18784	0.32557	3.24054
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.06217	-0.20317	-2.26636
	setup	CLK (R)	0.18116	0.32461	3.25019

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)	-0.05545	-0.12683	-0.60083
	setup	CLK (R)	0.09419	0.15354	0.68388
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05498	-0.12574	-0.58772
	setup	CLK (R)	0.08612	0.14929	0.67786

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)	-0.05414	-0.19487	-2.40521
	setup	CLK (R)	0.18784	0.32557	3.24054
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.06217	-0.20317	-2.26636
	setup	CLK (R)	0.18116	0.32461	3.25019

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)	-0.09896	-0.14466	-0.41959
	removal	CLK (R)	0.12387	0.16495	0.47419
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.10193	-0.14266	-0.41630
	removal	CLK (R)	0.12387	0.16495	0.45465

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)	-0.09896	-0.14466	-0.41959
	removal	CLK (R)	0.12387	0.16495	0.47419
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.10193	-0.14266	-0.41630
	removal	CLK (R)	0.12387	0.16495	0.45465

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 ()	0.22051	0.67627	16.50020
	min_pulse_width	SET_B ()	0.22051	0.67627	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.23823	0.67627	16.50020
	min_pulse_width	SET_B ()	0.27115	0.67627	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 ()	0.16987	0.67627	16.50020
	min_pulse_width	CLK ()	0.10404	0.67627	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.21544	0.67627	16.50020
	min_pulse_width	CLK ()	0.12176	0.67627	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 ()	0.16734	0.67627	16.50020
	min_pulse_width	CLK ()	0.25089	0.67627	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.16227	0.67627	16.50020
	min_pulse_width	CLK ()	0.24583	0.67627	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	0.01410	0.01442	0.02594
	CLK	0.01204	0.01229	0.02386
	SET_B	0.01342	0.01349	0.01946
	SET_B	0.01546	0.01554	0.02124
sky130_fd_sc_hs__dfsbp_2	CLK	0.01671	0.01702	0.02880
	CLK	0.01463	0.01493	0.02667
	SET_B	0.01559	0.01607	0.02258
	SET_B	0.01291	0.01312	0.02073

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01466	0.01503	0.02617
	CLK	0.01270	0.01306	0.02420
sky130_fd_sc_hs__dfsbp_2	CLK	0.01712	0.01785	0.02911
	CLK	0.01512	0.01578	0.02706

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01468	0.01502	0.02641
	CLK	0.01272	0.01307	0.02448
sky130_fd_sc_hs__dfsbp_2	CLK	0.01714	0.01793	0.02938
	CLK	0.01514	0.01581	0.02741

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01408	0.01438	0.02571
	CLK	0.01202	0.01227	0.02366
	SET_B	0.01340	0.01345	0.01898
	SET_B	0.01544	0.01552	0.02100
sky130_fd_sc_hs__dfsbp_2	CLK	0.01670	0.01700	0.02836
	CLK	0.01461	0.01491	0.02627
	SET_B	0.01558	0.01604	0.02213
	SET_B	0.01291	0.01311	0.02039

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00319	0.00334	0.01110
	CLK	0.00071	0.00086	0.00863
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00943	0.00946	0.01632
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00671	0.00674	0.01360
	(!CLK * !SET_B * Q * !Q_N)	0.00741	0.00750	0.01411
	(!CLK * !SET_B * Q * !Q_N)	0.00459	0.00467	0.01129
sky130_fd_sc_hs__dfsbp_2	CLK	0.00318	0.00333	0.01110
	CLK	0.00069	0.00084	0.00862
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00933	0.00937	0.01626
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00653	0.00655	0.01345
	(!CLK * !SET_B * Q * !Q_N)	0.00740	0.00749	0.01412
	(!CLK * !SET_B * Q * !Q_N)	0.00450	0.00458	0.01121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00026	0.00049	0.00801
	CLK	0.00273	0.00297	0.01047
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00681	0.00697	0.01379
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00952	0.00968	0.01651
	(!CLK * !SET_B * Q * !Q_N)	0.00389	0.00398	0.01028
	(!CLK * !SET_B * Q * !Q_N)	0.00672	0.00680	0.01311
sky130_fd_sc_hs__dfsbp_2	CLK	0.00026	0.00049	0.00801
	CLK	0.00273	0.00297	0.01048
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00653	0.00670	0.01353
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00934	0.00951	0.01634
	(!CLK * !SET_B * Q * !Q_N)	0.00375	0.00384	0.01016
	(!CLK * !SET_B * Q * !Q_N)	0.00665	0.00674	0.01307

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)	0.00239	0.00241	0.00239
	(CLK * Q * !Q_N)	-0.00202	-0.00203	-0.00202
	(!CLK * D * Q * !Q_N)	0.00261	0.00264	0.00262
	(!CLK * D * Q * !Q_N)	-0.00179	-0.00180	-0.00179
	(!CLK * !D * Q * !Q_N)	0.00498	0.00503	0.01159
	(!CLK * !D * Q * !Q_N)	0.00039	0.00042	0.00699
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00241	0.00244	0.00242
	(CLK * Q * !Q_N)	-0.00196	-0.00198	-0.00196
	(!CLK * D * Q * !Q_N)	0.00259	0.00262	0.00260
	(!CLK * D * Q * !Q_N)	-0.00179	-0.00180	-0.00179
	(!CLK * !D * Q * !Q_N)	0.00479	0.00485	0.01144
	(!CLK * !D * Q * !Q_N)	0.00024	0.00028	0.00688

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)	-0.00236	-0.00240	-0.00239
	(CLK * Q * !Q_N)	0.00207	0.00205	0.00204
	(!CLK * D * Q * !Q_N)	-0.00258	-0.00263	-0.00262
	(!CLK * D * Q * !Q_N)	0.00185	0.00182	0.00181
	(!CLK * !D * Q * !Q_N)	-0.00024	0.00009	0.00671
	(!CLK * !D * Q * !Q_N)	0.00434	0.00470	0.01131
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00239	-0.00243	-0.00242
	(CLK * Q * !Q_N)	0.00201	0.00200	0.00198
	(!CLK * D * Q * !Q_N)	-0.00256	-0.00261	-0.00259
	(!CLK * D * Q * !Q_N)	0.00184	0.00182	0.00180
	(!CLK * !D * Q * !Q_N)	-0.00021	0.00006	0.00678
	(!CLK * !D * Q * !Q_N)	0.00433	0.00463	0.01134

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)	0.01381	0.01395	0.03582
	(D * Q * !Q_N)	0.00977	0.00990	0.03178
	(!D * SET_B * !Q * Q_N)	0.01355	0.01367	0.03557
	(!D * SET_B * !Q * Q_N)	0.00951	0.00963	0.03153
	(!D * !SET_B * Q * !Q_N)	0.02478	0.02515	0.04762
	(!D * !SET_B * Q * !Q_N)	0.02038	0.02077	0.04323
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01365	0.01379	0.03569
	(D * Q * !Q_N)	0.00954	0.00968	0.03159
	(!D * SET_B * !Q * Q_N)	0.01348	0.01360	0.03554
	(!D * SET_B * !Q * Q_N)	0.00937	0.00949	0.03143
	(!D * !SET_B * Q * !Q_N)	0.02445	0.02486	0.04736
	(!D * !SET_B * Q * !Q_N)	0.01992	0.02031	0.04283

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)	0.01374	0.01446	0.03759
	(D * SET_B * !Q * Q_N)	0.01754	0.01826	0.04139
	(D * Q * !Q_N)	0.00789	0.00871	0.03131
	(D * Q * !Q_N)	0.01193	0.01275	0.03535
	(!D * SET_B * Q * !Q_N)	0.01589	0.01691	0.03993
	(!D * SET_B * Q * !Q_N)	0.02018	0.02119	0.04422
	(!D * SET_B * !Q * Q_N)	0.00805	0.00886	0.03155
	(!D * SET_B * !Q * Q_N)	0.01209	0.01291	0.03560
	(!D * !SET_B * Q * !Q_N)	0.01296	0.01397	0.03699
	(!D * !SET_B * Q * !Q_N)	0.01736	0.01837	0.04139
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01351	0.01422	0.03741
	(D * SET_B * !Q * Q_N)	0.01729	0.01801	0.04117
	(D * Q * !Q_N)	0.00777	0.00859	0.03123
	(D * Q * !Q_N)	0.01188	0.01270	0.03534
	(!D * SET_B * Q * !Q_N)	0.01545	0.01647	0.03954
	(!D * SET_B * Q * !Q_N)	0.01990	0.02089	0.04398
	(!D * SET_B * !Q * Q_N)	0.00785	0.00866	0.03139
	(!D * SET_B * !Q * Q_N)	0.01196	0.01278	0.03551
	(!D * !SET_B * Q * !Q_N)	0.01265	0.01367	0.03673
	(!D * !SET_B * Q * !Q_N)	0.01719	0.01822	0.04125

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00174	0.00339	0.00293	1.08063
sky130_fd_sc_hs__dfstp_2	0.00175	0.00317	0.00296	2.13072
sky130_fd_sc_hs__dfstp_4	0.00174	0.00321	0.00296	4.03759

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfstp_1	0.00000	0.32578	0.39198
sky130_fd_sc_hs__dfstp_2	0.00000	0.24361	0.33268
sky130_fd_sc_hs__dfstp_4	0.00000	0.58727	0.70356

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)	0.22960	0.74644	6.36861
	SET_B->Q (FR)	0.23171	1.00903	9.13027
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.23921	0.65517	6.39599
	SET_B->Q (FR)	0.24283	0.92384	9.18659
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.28337	0.62811	6.46818
	SET_B->Q (FR)	0.28657	0.90237	9.31570

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.23512	0.49328	2.32346
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.25019	0.47683	2.33122
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.25729	0.45574	2.29642

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)	-0.05143	-0.12483	-0.59439
	setup	CLK (R)	0.09077	0.15362	0.66577
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05589	-0.12683	-0.60400
	setup	CLK (R)	0.09250	0.15456	0.67457
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05287	-0.12483	-0.58808
	setup	CLK (R)	0.08617	0.14666	0.66266

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)	-0.05021	-0.19162	-2.52510
	setup	CLK (R)	0.18072	0.32017	3.21663
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05287	-0.19181	-2.51922
	setup	CLK (R)	0.18090	0.32247	3.22951
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05656	-0.19906	-2.42994
	setup	CLK (R)	0.17718	0.31877	3.21933

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)	-0.05143	-0.12483	-0.59439
	setup	CLK (R)	0.09077	0.15362	0.66577
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05589	-0.12683	-0.60400
	setup	CLK (R)	0.09250	0.15456	0.67457
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05287	-0.12483	-0.58808
	setup	CLK (R)	0.08617	0.14666	0.66266

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)	-0.05021	-0.19162	-2.52510
	setup	CLK (R)	0.18072	0.32017	3.21663
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.05287	-0.19181	-2.51922
	setup	CLK (R)	0.18090	0.32247	3.22951
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.05656	-0.19906	-2.42994
	setup	CLK (R)	0.17718	0.31877	3.21933

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)	-0.10079	-0.14688	-0.41608
	removal	CLK (R)	0.12193	0.16272	0.52664
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.10412	-0.14666	-0.42557
	removal	CLK (R)	0.12507	0.16272	0.50206
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.09900	-0.14266	-0.41276
	removal	CLK (R)	0.11900	0.15826	0.46428

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)	-0.10079	-0.14688	-0.41608
	removal	CLK (R)	0.12193	0.16272	0.52664
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.10412	-0.14666	-0.42557
	removal	CLK (R)	0.12507	0.16272	0.50206
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.09900	-0.14266	-0.41276
	removal	CLK (R)	0.11900	0.15826	0.46428

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 ()	0.19519	0.67627	16.50020
	min_pulse_width	SET_B ()	0.16987	0.67627	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.20532	0.67627	16.50020
	min_pulse_width	SET_B ()	0.18000	0.67627	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.21291	0.67627	16.50020
	min_pulse_width	SET_B ()	0.20278	0.67627	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 ()	0.12176	0.67627	16.50020
	min_pulse_width	CLK ()	0.09391	0.67627	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.12936	0.67627	16.50020
	min_pulse_width	CLK ()	0.09897	0.67627	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.15974	0.67627	16.50020
	min_pulse_width	CLK ()	0.10150	0.67627	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 ()	0.16480	0.67627	16.50020
	min_pulse_width	CLK ()	0.24330	0.67627	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.16480	0.67627	16.50020
	min_pulse_width	CLK ()	0.24330	0.67627	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.16227	0.67627	16.50020
	min_pulse_width	CLK ()	0.24077	0.67627	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	0.02417	0.02436	0.04745
	CLK	0.02021	0.02039	0.04367
	SET_B	0.02281	0.02247	0.03375
	SET_B	0.02720	0.02685	0.03828
sky130_fd_sc_hs__dfstp_2	CLK	0.02728	0.02779	0.05090
	CLK	0.02312	0.02364	0.04711
	SET_B	0.02601	0.02602	0.03727
	SET_B	0.03003	0.03001	0.04156
sky130_fd_sc_hs__dfstp_4	CLK	0.03374	0.03470	0.05799
	CLK	0.02953	0.03053	0.05434
	SET_B	0.03206	0.03276	0.04428
	SET_B	0.03610	0.03678	0.04855

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.02633	0.02687	0.04911
	CLK	0.02219	0.02254	0.04473
sky130_fd_sc_hs__dfstp_2	CLK	0.02897	0.02978	0.05225
	CLK	0.02495	0.02563	0.04789
sky130_fd_sc_hs__dfstp_4	CLK	0.03581	0.03759	0.06041
	CLK	0.03178	0.03332	0.05571

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00319	0.00335	0.01109
	CLK	0.00072	0.00087	0.00863
	(!CLK * SET_B)	0.00932	0.00936	0.01624
	(!CLK * SET_B)	0.00662	0.00665	0.01354
	(!CLK * !SET_B * Q)	0.00736	0.00745	0.01409
	(!CLK * !SET_B * Q)	0.00453	0.00461	0.01125
sky130_fd_sc_hs__dfstp_2	CLK	0.00321	0.00337	0.01111
	CLK	0.00073	0.00088	0.00863
	(!CLK * SET_B)	0.00932	0.00935	0.01622
	(!CLK * SET_B)	0.00660	0.00663	0.01350
	(!CLK * !SET_B * Q)	0.00736	0.00744	0.01405
	(!CLK * !SET_B * Q)	0.00451	0.00459	0.01120
sky130_fd_sc_hs__dfstp_4	CLK	0.00321	0.00336	0.01110
	CLK	0.00074	0.00089	0.00864
	(!CLK * SET_B)	0.00928	0.00931	0.01621
	(!CLK * SET_B)	0.00655	0.00658	0.01348
	(!CLK * !SET_B * Q)	0.00728	0.00737	0.01402
	(!CLK * !SET_B * Q)	0.00444	0.00452	0.01117

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00035	0.00057	0.00806
	CLK	0.00280	0.00303	0.01052
	(!CLK * SET_B)	0.00654	0.00671	0.01353
	(!CLK * SET_B)	0.00924	0.00941	0.01624
	(!CLK * !SET_B * Q)	0.00376	0.00384	0.01017
	(!CLK * !SET_B * Q)	0.00660	0.00668	0.01300
sky130_fd_sc_hs__dfstp_2	CLK	0.00033	0.00056	0.00804
	CLK	0.00280	0.00303	0.01051
	(!CLK * SET_B)	0.00673	0.00689	0.01371
	(!CLK * SET_B)	0.00944	0.00961	0.01642
	(!CLK * !SET_B * Q)	0.00396	0.00404	0.01034
	(!CLK * !SET_B * Q)	0.00681	0.00690	0.01320
sky130_fd_sc_hs__dfstp_4	CLK	0.00035	0.00058	0.00806
	CLK	0.00281	0.00304	0.01052
	(!CLK * SET_B)	0.00645	0.00662	0.01345
	(!CLK * SET_B)	0.00918	0.00935	0.01618
	(!CLK * !SET_B * Q)	0.00374	0.00383	0.01016
	(!CLK * !SET_B * Q)	0.00659	0.00668	0.01301

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00228	0.00231	0.00229
	(CLK * Q)	-0.00220	-0.00222	-0.00220
	(!CLK * D * Q)	0.00247	0.00250	0.00248
	(!CLK * D * Q)	-0.00201	-0.00203	-0.00202
	(!CLK * !D * Q)	0.00475	0.00481	0.01138
	(!CLK * !D * Q)	0.00006	0.00008	0.00668
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00224	0.00227	0.00224
	(CLK * Q)	-0.00203	-0.00205	-0.00203
	(!CLK * D * Q)	0.00242	0.00245	0.00243
	(!CLK * D * Q)	-0.00184	-0.00186	-0.00184
	(!CLK * !D * Q)	0.00471	0.00475	0.01133
	(!CLK * !D * Q)	0.00024	0.00026	0.00684
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00236	0.00239	0.00237
	(CLK * Q)	-0.00197	-0.00198	-0.00197
	(!CLK * D * Q)	0.00253	0.00256	0.00254
	(!CLK * D * Q)	-0.00181	-0.00182	-0.00181
	(!CLK * !D * Q)	0.00474	0.00479	0.01137
	(!CLK * !D * Q)	0.00021	0.00024	0.00684

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00223	-0.00229	-0.00229
	(CLK * Q)	0.00223	0.00223	0.00222
	(!CLK * D * Q)	-0.00241	-0.00248	-0.00247
	(!CLK * D * Q)	0.00204	0.00204	0.00203
	(!CLK * !D * Q)	-0.00012	0.00013	0.00684
	(!CLK * !D * Q)	0.00456	0.00484	0.01154
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00221	-0.00225	-0.00224
	(CLK * Q)	0.00208	0.00206	0.00204
	(!CLK * D * Q)	-0.00239	-0.00244	-0.00243
	(!CLK * D * Q)	0.00189	0.00187	0.00186
	(!CLK * !D * Q)	-0.00005	0.00023	0.00691
	(!CLK * !D * Q)	0.00442	0.00473	0.01140
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00233	-0.00237	-0.00236
	(CLK * Q)	0.00203	0.00201	0.00199
	(!CLK * D * Q)	-0.00249	-0.00254	-0.00253
	(!CLK * D * Q)	0.00187	0.00184	0.00183
	(!CLK * !D * Q)	-0.00009	0.00021	0.00687
	(!CLK * !D * Q)	0.00442	0.00475	0.01141

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01366	0.01378	0.03565
	(D * Q)	0.00959	0.00972	0.03159
	(!D * SET_B * !Q)	0.01353	0.01364	0.03553
	(!D * SET_B * !Q)	0.00946	0.00958	0.03147
	(!D * !SET_B * Q)	0.02418	0.02457	0.04699
	(!D * !SET_B * Q)	0.01975	0.02013	0.04255
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01385	0.01397	0.03585
	(D * Q)	0.00975	0.00988	0.03176
	(!D * SET_B * !Q)	0.01359	0.01370	0.03559
	(!D * SET_B * !Q)	0.00949	0.00960	0.03151
	(!D * !SET_B * Q)	0.02450	0.02486	0.04731
	(!D * !SET_B * Q)	0.02002	0.02038	0.04284
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01369	0.01382	0.03571
	(D * Q)	0.00956	0.00969	0.03159
	(!D * SET_B * !Q)	0.01359	0.01370	0.03561
	(!D * SET_B * !Q)	0.00946	0.00958	0.03149
	(!D * !SET_B * Q)	0.02405	0.02443	0.04692
	(!D * !SET_B * Q)	0.01954	0.01990	0.04241

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)**	0.01367	0.01438	0.03753
	(D * SET_B * !Q)	0.01752	0.01822	0.04135
	(D * Q)	0.00793	0.00873	0.03135
	(D * Q)	0.01200	0.01280	0.03541
	(!D * SET_B * Q)	0.01547	0.01638	0.03953
	(!D * SET_B * Q)	0.01978	0.02068	0.04383
	(!D * SET_B * !Q)	0.00796	0.00876	0.03146
	(!D * SET_B * !Q)	0.01203	0.01283	0.03552
	(!D * !SET_B * Q)	0.01268	0.01368	0.03672
	(!D * !SET_B * Q)	0.01713	0.01814	0.04116
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01359	0.01429	0.03745
	(D * SET_B * !Q)	0.01746	0.01816	0.04132
	(D * Q)	0.00779	0.00860	0.03123
	(D * Q)	0.01189	0.01270	0.03533
	(!D * SET_B * Q)	0.01558	0.01660	0.03966
	(!D * SET_B * Q)	0.01993	0.02094	0.04400
	(!D * SET_B * !Q)	0.00796	0.00876	0.03148
	(!D * SET_B * !Q)	0.01206	0.01287	0.03558
	(!D * !SET_B * Q)	0.01280	0.01367	0.03685
	(!D * !SET_B * Q)	0.01729	0.01815	0.04133
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01353	0.01424	0.03742
	(D * SET_B * !Q)	0.01740	0.01810	0.04127
	(D * Q)	0.00784	0.00865	0.03130
	(D * Q)	0.01198	0.01278	0.03542
	(!D * SET_B * Q)	0.01526	0.01628	0.03935
	(!D * SET_B * Q)	0.01966	0.02068	0.04374
	(!D * SET_B * !Q)	0.00785	0.00865	0.03138
	(!D * SET_B * !Q)	0.01198	0.01279	0.03551
	(!D * !SET_B * Q)	0.01255	0.01343	0.03662
	(!D * !SET_B * Q)	0.01707	0.01795	0.04113

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00178	0.00295	1.04860	1.03502
sky130_fd_sc_hs__dfxbp_2	0.00173	0.00295	1.84366	2.09099

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.57414	0.85422
sky130_fd_sc_hs__dfxbp_2	0.00000	0.77860	1.36466

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)	0.21148	0.73870	6.39269
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.24924	0.68682	6.28713

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.23311	0.51552	2.37930
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.22670	0.45793	1.99149

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)	0.27642	0.80332	6.38519
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.28868	0.70862	6.37587

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)	0.24717	0.50439	2.24971
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.30844	0.53456	2.39024

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)	-0.02413	-0.06241	-0.30190
	setup	CLK (R)	0.08514	0.10927	0.44515
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.01897	-0.05573	-0.27353
	setup	CLK (R)	0.06358	0.09688	0.42591

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)	-0.04121	-0.17100	-2.56958
	setup	CLK (R)	0.13211	0.25764	2.93786
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.04488	-0.16626	-2.49236
	setup	CLK (R)	0.12975	0.25313	2.91219

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 ()	0.09897	0.67627	16.50020
	min_pulse_width	CLK ()	0.08125	0.67627	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.13189	0.67627	16.50020
	min_pulse_width	CLK ()	0.08378	0.67627	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 ()	0.16227	0.67627	16.50020
	min_pulse_width	CLK ()	0.20025	0.67627	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.14708	0.67627	16.50020
	min_pulse_width	CLK ()	0.20278	0.67627	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	0.01348	0.01360	0.02546
	CLK	0.01156	0.01164	0.02353
sky130_fd_sc_hs__dfxbp_2	CLK	0.01654	0.01701	0.02893
	CLK	0.01459	0.01506	0.02712

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01391	0.01429	0.02616
	CLK	0.01200	0.01238	0.02420
sky130_fd_sc_hs__dfxbp_2	CLK	0.01724	0.01797	0.02967
	CLK	0.01530	0.01602	0.02782

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01393	0.01445	0.02634
	CLK	0.01201	0.01240	0.02444
sky130_fd_sc_hs__dfxbp_2	CLK	0.01725	0.01808	0.03024
	CLK	0.01531	0.01604	0.02830

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01347	0.01358	0.02511
	CLK	0.01155	0.01163	0.02319
sky130_fd_sc_hs__dfxbp_2	CLK	0.01653	0.01708	0.02869
	CLK	0.01457	0.01504	0.02667

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00233	0.00257	0.01050
	CLK	-0.00019	0.00005	0.00799
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00839	0.00859	0.01678
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00588	0.00607	0.01427
sky130_fd_sc_hs__dfxbp_2	CLK	0.00219	0.00245	0.01039
	CLK	-0.00026	-0.00001	0.00795
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00824	0.00845	0.01666
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00579	0.00600	0.01422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00014	0.00027	0.00796
	CLK	0.00236	0.00279	0.01046
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00489	0.00509	0.01352
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00740	0.00761	0.01604
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00015	0.00021	0.00799
	CLK	0.00229	0.00266	0.01043
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00454	0.00476	0.01321
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00698	0.00721	0.01565

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)	0.01226	0.01251	0.03481
	(D * Q * !Q_N)	0.00842	0.00865	0.03097
	(!D * !Q * Q_N)	0.01247	0.01271	0.03504
	(!D * !Q * Q_N)	0.00863	0.00885	0.03119
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01233	0.01260	0.03481
	(D * Q * !Q_N)	0.00844	0.00868	0.03091
	(!D * !Q * Q_N)	0.01241	0.01266	0.03490
	(!D * !Q * Q_N)	0.00851	0.00875	0.03100

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)	0.00919	0.00987	0.03282
	(D * Q * !Q_N)	0.01303	0.01373	0.03667
	(D * !Q * Q_N)	0.01472	0.01529	0.03899
	(D * !Q * Q_N)	0.01855	0.01913	0.04284
	(!D * Q * !Q_N)	0.01551	0.01629	0.03988
	(!D * Q * !Q_N)	0.01935	0.02015	0.04373
	(!D * !Q * Q_N)	0.00885	0.00955	0.03253
	(!D * !Q * Q_N)	0.01268	0.01339	0.03638
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00917	0.00985	0.03277
	(D * Q * !Q_N)	0.01306	0.01376	0.03667
	(D * !Q * Q_N)	0.01482	0.01538	0.03906
	(D * !Q * Q_N)	0.01871	0.01928	0.04295
	(!D * Q * !Q_N)	0.01505	0.01582	0.03936
	(!D * Q * !Q_N)	0.01894	0.01971	0.04327
	(!D * !Q * Q_N)	0.00896	0.00965	0.03261
	(!D * !Q * Q_N)	0.01285	0.01355	0.03651

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00174	0.00295	1.04768
sky130_fd_sc_hs__dfxtp_2	0.00178	0.00294	2.11082
sky130_fd_sc_hs__dfxtp_4	0.00177	0.00295	3.93193

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.47305	0.95124
sky130_fd_sc_hs__dfxtp_2	0.00000	0.42342	0.79909
sky130_fd_sc_hs__dfxtp_4	0.00000	0.70704	1.26284

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)**	0.19184	0.72004	6.35058
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.20407	0.62662	6.34977
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.24444	0.59584	6.36597

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.22091	0.49762	2.35570
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.22869	0.47273	2.38022
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.23558	0.45054	2.35821

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)	-0.02158	-0.05841	-0.29557
	setup	CLK (R)	0.08661	0.11099	0.43623
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.02024	-0.05841	-0.28699
	setup	CLK (R)	0.08345	0.10699	0.43208
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.02218	-0.05350	-0.27662
	setup	CLK (R)	0.07723	0.10281	0.43363

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)	-0.04411	-0.17400	-2.59716
	setup	CLK (R)	0.13752	0.26287	2.95463
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03974	-0.16565	-2.55001
	setup	CLK (R)	0.12848	0.25329	2.91837
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.04024	-0.15906	-2.48179
	setup	CLK (R)	0.12772	0.25429	2.91397

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 ()	0.08884	0.67627	16.50020
	min_pulse_width	CLK ()	0.08125	0.67627	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.09897	0.67627	16.50020
	min_pulse_width	CLK ()	0.08125	0.67627	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.12682	0.67627	16.50020
	min_pulse_width	CLK ()	0.08631	0.67627	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 ()	0.16734	0.67627	16.50020
	min_pulse_width	CLK ()	0.20785	0.67627	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.16227	0.67627	16.50020
	min_pulse_width	CLK ()	0.20278	0.67627	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.15721	0.67627	16.50020
	min_pulse_width	CLK ()	0.20532	0.67627	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	0.02090	0.02100	0.04456
	CLK	0.01702	0.01711	0.04086
sky130_fd_sc_hs__dfxtp_2	CLK	0.02362	0.02397	0.04755
	CLK	0.01971	0.02007	0.04403
sky130_fd_sc_hs__dfxtp_4	CLK	0.02965	0.03047	0.05407
	CLK	0.02579	0.02662	0.05099

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.02190	0.02257	0.04640
	CLK	0.01802	0.01861	0.04231
sky130_fd_sc_hs__dfxtp_2	CLK	0.02440	0.02535	0.04898
	CLK	0.02049	0.02143	0.04505
sky130_fd_sc_hs__dfxtp_4	CLK	0.03121	0.03295	0.05699
	CLK	0.02735	0.02909	0.05276

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00215	0.00239	0.01030
	CLK	-0.00030	-0.00007	0.00785
	!CLK	0.00827	0.00845	0.01665
	!CLK	0.00580	0.00600	0.01419
sky130_fd_sc_hs__dfxtp_2	CLK	0.00229	0.00254	0.01049
	CLK	-0.00023	0.00001	0.00798
	!CLK	0.00818	0.00837	0.01658
	!CLK	0.00567	0.00585	0.01406
sky130_fd_sc_hs__dfxtp_4	CLK	0.00217	0.00243	0.01039
	CLK	-0.00033	-0.00008	0.00789
	!CLK	0.00819	0.00839	0.01660
	!CLK	0.00568	0.00587	0.01410

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00019	0.00050	0.00821
	CLK	0.00264	0.00296	0.01067
	!CLK	0.00521	0.00545	0.01382
	!CLK	0.00767	0.00791	0.01628
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00020	0.00025	0.00794
	CLK	0.00232	0.00276	0.01045
	!CLK	0.00496	0.00516	0.01361
	!CLK	0.00747	0.00768	0.01613
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00014	0.00031	0.00801
	CLK	0.00236	0.00282	0.01051
	!CLK	0.00489	0.00510	0.01353
	!CLK	0.00738	0.00760	0.01603

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01231	0.01256	0.03474
	(D * Q)	0.00843	0.00865	0.03084
	(!D * !Q)	0.01270	0.01294	0.03515
	(!D * !Q)	0.00882	0.00904	0.03125
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01235	0.01260	0.03482
	(D * Q)	0.00844	0.00867	0.03090
	(!D * !Q)	0.01264	0.01288	0.03512
	(!D * !Q)	0.00873	0.00896	0.03121
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01227	0.01252	0.03469
	(D * Q)	0.00841	0.00863	0.03082
	(!D * !Q)	0.01257	0.01281	0.03501
	(!D * !Q)	0.00871	0.00893	0.03114

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00958	0.01024	0.03314
	(D * Q)	0.01346	0.01414	0.03704
	(D * !Q)	0.01503	0.01555	0.03925
	(D * !Q)	0.01891	0.01945	0.04315
	(!D * Q)	0.01584	0.01660	0.04017
	(!D * Q)	0.01973	0.02050	0.04407
	(!D * !Q)	0.00905	0.00971	0.03266
	(!D * !Q)	0.01293	0.01361	0.03655
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00938	0.01004	0.03297
	(D * Q)	0.01329	0.01397	0.03689
	(D * !Q)	0.01469	0.01525	0.03891
	(D * !Q)	0.01860	0.01915	0.04283
	(!D * Q)	0.01574	0.01650	0.04009
	(!D * Q)	0.01964	0.02042	0.04401
	(!D * !Q)	0.00896	0.00963	0.03260
	(!D * !Q)	0.01287	0.01355	0.03651
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00975	0.01041	0.03326
	(D * Q)	0.01361	0.01428	0.03712
	(D * !Q)	0.01510	0.01563	0.03922
	(D * !Q)	0.01896	0.01950	0.04310
	(!D * Q)	0.01610	0.01687	0.04039
	(!D * Q)	0.01996	0.02075	0.04426
	(!D * !Q)	0.00931	0.00996	0.03286
	(!D * !Q)	0.01317	0.01384	0.03673

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00258	0.00443	1.08406
sky130_fd_sc_hs__dlclkp_2	0.00258	0.00476	2.09730
sky130_fd_sc_hs__dlclkp_4	0.00256	0.00498	4.17939

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.60218	1.03727
sky130_fd_sc_hs__dlclkp_2	0.00000	0.53292	0.72679
sky130_fd_sc_hs__dlclkp_4	0.00000	0.55304	0.57968

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)**	0.07182	0.57228	6.41776
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.07393	0.48504	6.24356
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.10191	0.48760	6.63061

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.08365	0.50896	4.42576
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.09273	0.51767	4.55359
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.12261	0.56981	4.85911

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)	-0.03382	-0.07579	-0.47307
	setup	CLK (R)	0.13204	0.18435	0.71946
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.03070	-0.07356	-0.47235
	setup	CLK (R)	0.13825	0.17975	0.77016
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.03058	-0.07133	-0.45694
	setup	CLK (R)	0.13645	0.15750	0.90505

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)	-0.05521	-0.15305	-2.35470
	setup	CLK (R)	0.11568	0.22457	2.48097
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.05431	-0.14844	-2.33761
	setup	CLK (R)	0.10892	0.20842	2.42252
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.05326	-0.14694	-2.32689
	setup	CLK (R)	0.09049	0.17011	2.40822

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 ()	0.05086	0.67627	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.05593	0.67627	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.08378	0.67627	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 ()	0.19266	0.67627	16.50020
	min_pulse_width	CLK ()	0.17240	0.67627	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.20278	0.67627	16.50020
	min_pulse_width	CLK ()	0.17493	0.67627	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.19772	0.67627	16.50020
	min_pulse_width	CLK ()	0.17240	0.67627	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	0.01544	0.01666	0.06820
	CLK	0.00918	0.01040	0.06209
sky130_fd_sc_hs__dlclkp_2	CLK	0.01847	0.01973	0.06852
	CLK	0.01176	0.01303	0.06242
sky130_fd_sc_hs__dlclkp_4	CLK	0.02411	0.02548	0.07020
	CLK	0.01722	0.01866	0.06366

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01706	0.01969	0.06989
	CLK	0.02343	0.02601	0.07609
sky130_fd_sc_hs__dlclkp_2	CLK	0.02002	0.02283	0.07131
	CLK	0.02681	0.02944	0.07765
sky130_fd_sc_hs__dlclkp_4	CLK	0.01756	0.02062	0.07050
	CLK	0.02439	0.02721	0.07504

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00173	0.00152	0.00149
	CLK	-0.00146	-0.00169	-0.00171
	(!CLK * !GCLK)	0.01108	0.01107	0.02399
	(!CLK * !GCLK)	0.00764	0.00762	0.02055
sky130_fd_sc_hs__dlclkp_2	CLK	0.00131	0.00131	0.00131
	CLK	-0.00188	-0.00189	-0.00190
	(!CLK * !GCLK)	0.01120	0.01118	0.02408
	(!CLK * !GCLK)	0.00778	0.00776	0.02066
sky130_fd_sc_hs__dlclkp_4	CLK	0.00127	0.00128	0.00128
	CLK	-0.00187	-0.00189	-0.00189
	(!CLK * !GCLK)	0.01095	0.01093	0.02379
	(!CLK * !GCLK)	0.00771	0.00768	0.02054

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00145	-0.00148	-0.00147
	CLK	0.00172	0.00174	0.00174
	(!CLK * !GCLK)	0.00741	0.00733	0.02030
	(!CLK * !GCLK)	0.01086	0.01078	0.02373
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00123	-0.00130	-0.00131
	CLK	0.00196	0.00192	0.00190
	(!CLK * !GCLK)	0.00774	0.00770	0.02060
	(!CLK * !GCLK)	0.01117	0.01113	0.02401
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00119	-0.00126	-0.00127
	CLK	0.00195	0.00192	0.00190
	(!CLK * !GCLK)	0.00829	0.00821	0.02113
	(!CLK * !GCLK)	0.01154	0.01148	0.02437

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00963	0.01034	0.03868
	(!GATE * !GCLK)	0.00367	0.00433	0.03270
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.01013	0.01080	0.03903
	(!GATE * !GCLK)	0.00375	0.00437	0.03263
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.01008	0.01066	0.03855
	(!GATE * !GCLK)	0.00348	0.00401	0.03193

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01309	0.01431	0.04629
	(GATE * !GCLK)	0.01904	0.02029	0.05226
	(!GATE * !GCLK)	0.00445	0.00569	0.03450
	(!GATE * !GCLK)	0.01042	0.01170	0.04047
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01346	0.01468	0.04657
	(GATE * !GCLK)	0.01988	0.02114	0.05302
	(!GATE * !GCLK)	0.00467	0.00590	0.03468
	(!GATE * !GCLK)	0.01107	0.01233	0.04111
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01307	0.01421	0.04569
	(GATE * !GCLK)	0.01984	0.02102	0.05248
	(!GATE * !GCLK)	0.00440	0.00558	0.03394
	(!GATE * !GCLK)	0.01101	0.01223	0.04059

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00232	0.00256	0.00282	1.05119	1.06517
sky130_fd_sc_hs__dlrbn_2	0.00232	0.00255	0.00292	1.82786	2.06482

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	0.79004	1.09016
sky130_fd_sc_hs__dlrbn_2	0.00000	0.73975	0.99089

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)	0.26836	0.77421	6.44618
	GATE_N->Q (-R)	0.31733	1.00078	8.57184
	RESET_B->Q (RR)	0.09115	0.62396	6.41617
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.27519	0.69651	6.26733
	GATE_N->Q (-R)	0.32746	0.92812	8.42185
	RESET_B->Q (RR)	0.09838	0.56343	6.30006

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.20689	0.60955	4.15382
	GATE_N->Q (-F)	0.22575	0.66810	4.45098
	RESET_B->Q (FF)	0.09825	0.57512	4.54652
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.22753	0.59863	3.89459
	GATE_N->Q (-F)	0.24686	0.65772	4.19112
	RESET_B->Q (FF)	0.11459	0.57813	4.40265

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)	0.25445	0.90431	8.23458
	GATE_N->Q_N (-R)	0.27346	0.96256	8.53078
	RESET_B->Q_N (FR)	0.14749	0.85330	8.43720
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.29692	0.85314	8.47660
	GATE_N->Q_N (-R)	0.31645	0.91216	8.77175
	RESET_B->Q_N (FR)	0.18616	0.82151	8.77779

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)	0.30369	0.54085	2.38797
	GATE_N->Q_N (-F)	0.35270	0.76736	4.51455
	RESET_B->Q_N (RF)	0.12656	0.38571	2.21542
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.34523	0.56465	2.62976
	GATE_N->Q_N (-F)	0.39762	0.79634	4.78417
	RESET_B->Q_N (RF)	0.16788	0.42899	2.57674

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 ()**	0.11923	0.67627	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.14961	0.67627	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	0.01138	0.01177	0.02390
	D	0.00969	0.01008	0.02219
	GATE_N	0.01167	0.01239	0.02657
	GATE_N	0.01328	0.01399	0.02818
	RESET_B	0.00752	0.00766	0.01514
	RESET_B	0.00554	0.00564	0.01314
sky130_fd_sc_hs__dlrbn_2	D	0.01374	0.01464	0.02671
	D	0.01207	0.01280	0.02507
	GATE_N	0.01403	0.01509	0.02927
	GATE_N	0.01564	0.01672	0.03078
	RESET_B	0.01008	0.01048	0.01698
	RESET_B	0.00804	0.00844	0.01498

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00891	0.00982	0.02209
	D	0.01060	0.01144	0.02355
	GATE_N	0.01079	0.01164	0.02656
	GATE_N	0.01261	0.01345	0.02818
	RESET_B	0.00783	0.00817	0.01733
	RESET_B	0.00969	0.01001	0.01895
sky130_fd_sc_hs__dlrbn_2	D	0.01151	0.01278	0.02484
	D	0.01318	0.01441	0.02640
	GATE_N	0.01337	0.01463	0.02927
	GATE_N	0.01516	0.01641	0.03091
	RESET_B	0.01032	0.01113	0.02008
	RESET_B	0.01222	0.01293	0.02160

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00893	0.00978	0.02233
	D	0.01062	0.01145	0.02379
	GATE_N	0.01081	0.01166	0.02655
	GATE_N	0.01263	0.01347	0.02836
	RESET_B	0.00785	0.00818	0.01746
	RESET_B	0.00970	0.01002	0.01918
sky130_fd_sc_hs__dlrbn_2	D	0.01153	0.01284	0.02525
	D	0.01320	0.01444	0.02668
	GATE_N	0.01339	0.01467	0.02941
	GATE_N	0.01518	0.01645	0.03116
	RESET_B	0.01034	0.01110	0.01991
	RESET_B	0.01224	0.01295	0.02172

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01137	0.01176	0.02370
	D	0.00967	0.01006	0.02199
	GATE_N	0.01166	0.01237	0.02639
	GATE_N	0.01327	0.01398	0.02796
	RESET_B	0.00751	0.00761	0.01501
	RESET_B	0.00553	0.00563	0.01302
sky130_fd_sc_hs__dlrbn_2	D	0.01373	0.01455	0.02620
	D	0.01205	0.01279	0.02450
	GATE_N	0.01402	0.01510	0.02925
	GATE_N	0.01563	0.01670	0.03046
	RESET_B	0.01007	0.01048	0.01663
	RESET_B	0.00803	0.00844	0.01449

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)	0.00502	0.00568	0.02934
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00184	0.00248	0.02615
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00927	0.00974	0.03365
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00628	0.00675	0.03066
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)	0.00500	0.00559	0.02901
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00183	0.00242	0.02585
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00877	0.00922	0.03287
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00581	0.00625	0.02991

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)	0.00141	0.00263	0.02681
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00458	0.00581	0.03000
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00683	0.00792	0.03238
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00982	0.01092	0.03537
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)	0.00133	0.00254	0.02640
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00448	0.00570	0.02956
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00701	0.00808	0.03223
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00997	0.01106	0.03520

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)	0.00883	0.00949	0.03747
	(D * RESET_B * Q * !Q_N)	0.00539	0.00604	0.03403
	(D * !RESET_B * !Q * Q_N)	0.01375	0.01439	0.04217
	(D * !RESET_B * !Q * Q_N)	0.01013	0.01076	0.03856
	(!D * !Q * Q_N)	0.00935	0.01005	0.03771
	(!D * !Q * Q_N)	0.00591	0.00661	0.03427
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00885	0.00945	0.03712
	(D * RESET_B * Q * !Q_N)	0.00544	0.00604	0.03371
	(D * !RESET_B * !Q * Q_N)	0.01393	0.01449	0.04208
	(D * !RESET_B * !Q * Q_N)	0.01033	0.01089	0.03849
	(!D * !Q * Q_N)	0.00924	0.00991	0.03731
	(!D * !Q * Q_N)	0.00584	0.00649	0.03390

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)	0.00682	0.00807	0.03655
	(D * RESET_B * Q * !Q_N)	0.01025	0.01151	0.03998
	(D * !RESET_B * !Q * Q_N)	0.00978	0.01097	0.03897
	(D * !RESET_B * !Q * Q_N)	0.01340	0.01459	0.04260
	(!D * !Q * Q_N)	0.00620	0.00746	0.03603
	(!D * !Q * Q_N)	0.00962	0.01090	0.03946
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00671	0.00795	0.03629
	(D * RESET_B * Q * !Q_N)	0.01010	0.01136	0.03970
	(D * !RESET_B * !Q * Q_N)	0.00932	0.01048	0.03809
	(D * !RESET_B * !Q * Q_N)	0.01291	0.01408	0.04169
	(!D * !Q * Q_N)	0.00619	0.00745	0.03587
	(!D * !Q * Q_N)	0.00958	0.01086	0.03928

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)	0.00148	0.00150	0.00149
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00192	-0.00193	-0.00193
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00157	0.00159	0.00158
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00194	-0.00196	-0.00195

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)	-0.00141	-0.00147	-0.00147
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00201	0.00197	0.00195
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00150	-0.00157	-0.00157
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00203	0.00199	0.00197

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00215	0.00245	0.00291	1.05470	1.04575
sky130_fd_sc_hs__dlrbp_2	0.00216	0.00244	0.00291	2.07669	2.12822

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	0.79004	1.09016
sky130_fd_sc_hs__dlrbp_2	0.00000	0.73975	0.99090

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)	0.26005	0.76459	6.47002
	GATE->Q (-R)	0.23069	0.73812	6.35444
	RESET_B->Q (RR)	0.09265	0.63015	6.48555
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.26798	0.66872	6.33977
	GATE->Q (-R)	0.23626	0.63826	6.21626
	RESET_B->Q (RR)	0.09727	0.54753	6.45014

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.20557	0.60591	4.16860
	GATE->Q (-F)	0.22128	0.47093	2.15599
	RESET_B->Q (FF)	0.09990	0.58015	4.57439
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.22584	0.60608	4.24705
	GATE->Q (-F)	0.24094	0.46870	2.22815
	RESET_B->Q (FF)	0.10949	0.58083	4.73812

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)	0.25540	0.90765	8.28109
	GATE->Q_N (-R)	0.27119	0.77255	6.26805
	RESET_B->Q_N (FR)	0.15148	0.86555	8.49408
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.29366	0.83251	8.27761
	GATE->Q_N (-R)	0.30892	0.69517	6.25868
	RESET_B->Q_N (FR)	0.17694	0.79731	8.55882

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)	0.29688	0.52706	2.29677
	GATE->Q_N (-F)	0.26750	0.50048	2.17971
	RESET_B->Q_N (RF)	0.12947	0.38756	2.16996
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.33050	0.52972	2.42729
	GATE->Q_N (-F)	0.29889	0.49909	2.30297
	RESET_B->Q_N (RF)	0.15922	0.40491	2.41602

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 ()**	0.11923	0.67627	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.13948	0.67627	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	0.01078	0.01116	0.02320
	D	0.00920	0.00957	0.02161
	GATE	0.01231	0.01270	0.02713
	GATE	0.01052	0.01087	0.02537
	RESET_B	0.00756	0.00769	0.01511
	RESET_B	0.00552	0.00561	0.01308
sky130_fd_sc_hs__dlrbp_2	D	0.01349	0.01429	0.02640
	D	0.01191	0.01263	0.02480
	GATE	0.01495	0.01573	0.03041
	GATE	0.01318	0.01389	0.02862
	RESET_B	0.01017	0.01059	0.01858
	RESET_B	0.00812	0.00852	0.01646

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00925	0.01008	0.02221
	D	0.01084	0.01167	0.02363
	GATE	0.01266	0.01330	0.02725
	GATE	0.01112	0.01173	0.02573
	RESET_B	0.00794	0.00830	0.01733
	RESET_B	0.00985	0.01018	0.01907
sky130_fd_sc_hs__dlrbp_2	D	0.01184	0.01306	0.02498
	D	0.01344	0.01461	0.02655
	GATE	0.01524	0.01620	0.03027
	GATE	0.01368	0.01465	0.02872
	RESET_B	0.01049	0.01110	0.02068
	RESET_B	0.01239	0.01298	0.02225

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00927	0.01014	0.02236
	D	0.01086	0.01170	0.02389
	GATE	0.01268	0.01332	0.02750
	GATE	0.01114	0.01175	0.02600
	RESET_B	0.00795	0.00830	0.01767
	RESET_B	0.00987	0.01018	0.01935
sky130_fd_sc_hs__dlrbp_2	D	0.01186	0.01308	0.02545
	D	0.01345	0.01463	0.02688
	GATE	0.01526	0.01636	0.03073
	GATE	0.01370	0.01468	0.02914
	RESET_B	0.01050	0.01111	0.02060
	RESET_B	0.01240	0.01300	0.02246

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01077	0.01114	0.02299
	D	0.00918	0.00956	0.02141
	GATE	0.01230	0.01267	0.02682
	GATE	0.01051	0.01085	0.02505
	RESET_B	0.00755	0.00767	0.01501
	RESET_B	0.00551	0.00560	0.01298
sky130_fd_sc_hs__dlrbp_2	D	0.01348	0.01433	0.02606
	D	0.01190	0.01262	0.02444
	GATE	0.01494	0.01573	0.02993
	GATE	0.01316	0.01388	0.02813
	RESET_B	0.01015	0.01059	0.01834
	RESET_B	0.00811	0.00851	0.01622

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)	0.00801	0.00852	0.03221
	(GATE * !RESET_B * !Q * Q_N)	0.00528	0.00578	0.02948
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00486	0.00553	0.02901
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00192	0.00258	0.02607
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00808	0.00858	0.03225
	(GATE * !RESET_B * !Q * Q_N)	0.00534	0.00584	0.02951
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00486	0.00552	0.02898
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00190	0.00255	0.02602

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)	0.00714	0.00826	0.03243
	(GATE * !RESET_B * !Q * Q_N)	0.00986	0.01100	0.03517
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00108	0.00233	0.02625
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00400	0.00527	0.02918
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00723	0.00833	0.03251
	(GATE * !RESET_B * !Q * Q_N)	0.00997	0.01109	0.03525
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00117	0.00242	0.02632
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00413	0.00537	0.02927

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)	0.00915	0.00977	0.03743
	(D * RESET_B * Q * !Q_N)	0.00582	0.00644	0.03410
	(D * !RESET_B * !Q * Q_N)	0.01071	0.01123	0.03959
	(D * !RESET_B * !Q * Q_N)	0.00759	0.00810	0.03646
	(!D * !Q * Q_N)	0.00913	0.00979	0.03733
	(!D * !Q * Q_N)	0.00580	0.00646	0.03401
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00916	0.00979	0.03747
	(D * RESET_B * Q * !Q_N)	0.00581	0.00644	0.03413
	(D * !RESET_B * !Q * Q_N)	0.01069	0.01122	0.03961
	(D * !RESET_B * !Q * Q_N)	0.00756	0.00809	0.03648
	(!D * !Q * Q_N)	0.00909	0.00976	0.03737
	(!D * !Q * Q_N)	0.00574	0.00642	0.03403

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)	0.00563	0.00692	0.03519
	(D * RESET_B * Q * !Q_N)	0.00894	0.01025	0.03852
	(D * !RESET_B * !Q * Q_N)	0.00958	0.01077	0.04022
	(D * !RESET_B * !Q * Q_N)	0.01270	0.01390	0.04336
	(!D * !Q * Q_N)	0.00558	0.00683	0.03528
	(!D * !Q * Q_N)	0.00889	0.01017	0.03861
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00558	0.00688	0.03516
	(D * RESET_B * Q * !Q_N)	0.00892	0.01023	0.03850
	(D * !RESET_B * !Q * Q_N)	0.00950	0.01071	0.04014
	(D * !RESET_B * !Q * Q_N)	0.01262	0.01384	0.04327
	(!D * !Q * Q_N)	0.00556	0.00685	0.03529
	(!D * !Q * Q_N)	0.00890	0.01019	0.03864

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)	0.00151	0.00152	0.00151
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00197	-0.00198	-0.00197
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00152	0.00154	0.00153
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00197	-0.00198	-0.00197

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)	-0.00143	-0.00150	-0.00150
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00206	0.00202	0.00200
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00145	-0.00152	-0.00151
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00205	0.00202	0.00199

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00213	0.00247	0.00277	1.06465
sky130_fd_sc_hs__dlrtn_2	0.00216	0.00245	0.00287	2.08239
sky130_fd_sc_hs__dlrtn_4	0.00215	0.00247	0.00467	3.91558

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	0.61274	0.87472
sky130_fd_sc_hs__dlrtn_2	0.00000	0.60255	0.84384
sky130_fd_sc_hs__dlrtn_4	0.00000	1.00448	1.79598

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)	0.24811	0.74525	6.35147
	GATE_N->Q (-R)	0.28778	0.95503	8.42809
	RESET_B->Q (RR)	0.07997	0.58865	6.28693
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.25797	0.65986	6.38716
	GATE_N->Q (-R)	0.29738	0.86980	8.46234
	RESET_B->Q (RR)	0.08491	0.51513	6.35850
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.28574	0.61640	6.40693
	GATE_N->Q (-R)	0.32555	0.82844	8.47754
	RESET_B->Q (RR)	0.09139	0.45081	6.46813

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.19266	0.58821	4.16173
	GATE_N->Q (-F)	0.20517	0.63550	4.42254
	RESET_B->Q (FF)	0.08919	0.54092	4.45402
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.20116	0.56271	4.10333
	GATE_N->Q (-F)	0.21329	0.60985	4.36575
	RESET_B->Q (FF)	0.09640	0.53780	4.53507
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.21359	0.55262	4.17662
	GATE_N->Q (-F)	0.22945	0.60723	4.45771
	RESET_B->Q (FF)	0.10332	0.50739	4.52890

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 ()**	0.10657	0.67627	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.12429	0.67627	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.14455	0.67627	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	0.01593	0.01655	0.04055
	D	0.01279	0.01342	0.03762
	GATE_N	0.01637	0.01767	0.04612
	GATE_N	0.01949	0.02079	0.04926
	RESET_B	0.00954	0.00965	0.02694
	RESET_B	0.00565	0.00575	0.02330
sky130_fd_sc_hs__dlrtn_2	D	0.01830	0.01933	0.04342
	D	0.01518	0.01623	0.04072
	GATE_N	0.01877	0.02052	0.04909
	GATE_N	0.02191	0.02369	0.05231
	RESET_B	0.01183	0.01218	0.02630
	RESET_B	0.00781	0.00818	0.02267
sky130_fd_sc_hs__dlrtn_4	D	0.02619	0.02801	0.05263
	D	0.02288	0.02477	0.05006
	GATE_N	0.02668	0.02927	0.05826
	GATE_N	0.02962	0.03222	0.06139
	RESET_B	0.02078	0.02195	0.06169
	RESET_B	0.01423	0.01547	0.05571

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01299	0.01442	0.03901
	D	0.01612	0.01753	0.04178
	GATE_N	0.01555	0.01707	0.04700
	GATE_N	0.01914	0.02064	0.05028
	RESET_B	0.01026	0.01108	0.03062
	RESET_B	0.01389	0.01462	0.03376
sky130_fd_sc_hs__dlrtn_2	D	0.01565	0.01778	0.04260
	D	0.01875	0.02059	0.04487
	GATE_N	0.01832	0.02032	0.05018
	GATE_N	0.02181	0.02373	0.05335
	RESET_B	0.01283	0.01390	0.03090
	RESET_B	0.01659	0.01738	0.03451
sky130_fd_sc_hs__dlrtn_4	D	0.02235	0.02547	0.04977
	D	0.02565	0.02824	0.05265
	GATE_N	0.02507	0.02773	0.05831
	GATE_N	0.02879	0.03141	0.06130
	RESET_B	0.02005	0.02239	0.06335
	RESET_B	0.02625	0.02848	0.06930

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)	0.00469	0.00525	0.02894
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00178	0.00233	0.02604
	(!GATE_N * !RESET_B * !Q)	0.00786	0.00839	0.03219
	(!GATE_N * !RESET_B * !Q)	0.00515	0.00567	0.02949
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00473	0.00543	0.02897
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00180	0.00249	0.02604
	(!GATE_N * !RESET_B * !Q)	0.00789	0.00840	0.03221
	(!GATE_N * !RESET_B * !Q)	0.00516	0.00567	0.02949
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00472	0.00528	0.02900
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00180	0.00235	0.02608
	(!GATE_N * !RESET_B * !Q)	0.00831	0.00883	0.03264
	(!GATE_N * !RESET_B * !Q)	0.00561	0.00613	0.02994

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)	0.00147	0.00271	0.02680
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00437	0.00563	0.02971
	(!GATE_N * !RESET_B * !Q)	0.00755	0.00866	0.03303
	(!GATE_N * !RESET_B * !Q)	0.01026	0.01139	0.03575
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00145	0.00269	0.02677
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00438	0.00564	0.02971
	(!GATE_N * !RESET_B * !Q)	0.00762	0.00872	0.03310
	(!GATE_N * !RESET_B * !Q)	0.01035	0.01147	0.03583
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00141	0.00266	0.02676
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00433	0.00560	0.02969
	(!GATE_N * !RESET_B * !Q)	0.00875	0.00987	0.03422
	(!GATE_N * !RESET_B * !Q)	0.01146	0.01259	0.03693

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)	0.00868	0.00934	0.03750
	(D * RESET_B * Q)	0.00531	0.00597	0.03414
	(D * !RESET_B * !Q)	0.01360	0.01423	0.04232
	(D * !RESET_B * !Q)	0.01005	0.01068	0.03878
	(!D * !Q)	0.00862	0.00932	0.03722
	(!D * !Q)	0.00526	0.00595	0.03386
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00864	0.00932	0.03748
	(D * RESET_B * Q)	0.00531	0.00598	0.03415
	(D * !RESET_B * !Q)	0.01365	0.01430	0.04244
	(D * !RESET_B * !Q)	0.01013	0.01077	0.03891
	(!D * !Q)	0.00856	0.00928	0.03718
	(!D * !Q)	0.00523	0.00595	0.03386
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00872	0.00938	0.03753
	(D * RESET_B * Q)	0.00539	0.00604	0.03419
	(D * !RESET_B * !Q)	0.01483	0.01548	0.04361
	(D * !RESET_B * !Q)	0.01128	0.01193	0.04008
	(!D * !Q)	0.00859	0.00928	0.03717
	(!D * !Q)	0.00525	0.00595	0.03383

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)	0.00576	0.00702	0.03555
	(D * RESET_B * Q)	0.00911	0.01039	0.03891
	(D * !RESET_B * !Q)	0.00823	0.00944	0.03754
	(D * !RESET_B * !Q)	0.01179	0.01300	0.04110
	(!D * !Q)	0.00569	0.00697	0.03558
	(!D * !Q)	0.00904	0.01034	0.03893
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00583	0.00710	0.03563
	(D * RESET_B * Q)	0.00914	0.01042	0.03896
	(D * !RESET_B * !Q)	0.00832	0.00952	0.03765
	(D * !RESET_B * !Q)	0.01184	0.01305	0.04118
	(!D * !Q)	0.00578	0.00707	0.03568
	(!D * !Q)	0.00910	0.01041	0.03901
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00587	0.00712	0.03565
	(D * RESET_B * Q)	0.00919	0.01047	0.03897
	(D * !RESET_B * !Q)	0.00876	0.01000	0.03812
	(D * !RESET_B * !Q)	0.01232	0.01356	0.04167
	(!D * !Q)	0.00586	0.00714	0.03573
	(!D * !Q)	0.00919	0.01048	0.03906

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)	0.00150	0.00152	0.00150
	(D * GATE_N * !Q) + (!D * !Q)	-0.00181	-0.00182	-0.00181
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00153	0.00155	0.00154
	(D * GATE_N * !Q) + (!D * !Q)	-0.00194	-0.00195	-0.00195
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00259	0.00262	0.00259
	(D * GATE_N * !Q) + (!D * !Q)	-0.00299	-0.00301	-0.00299

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)	-0.00143	-0.00149	-0.00149
	(D * GATE_N * !Q) + (!D * !Q)	0.00189	0.00185	0.00183
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00146	-0.00153	-0.00153
	(D * GATE_N * !Q) + (!D * !Q)	0.00203	0.00199	0.00197
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00243	-0.00258	-0.00257
	(D * GATE_N * !Q) + (!D * !Q)	0.00311	0.00305	0.00302

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00230	0.00249	0.00282	1.08303
sky130_fd_sc_hs__dlrtp_2	0.00227	0.00244	0.00293	2.10291
sky130_fd_sc_hs__dlrtp_4	0.00226	0.00243	0.00445	3.93369

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtp_1	0.00000	0.61274	0.87472
sky130_fd_sc_hs__dlrtp_2	0.00000	0.60255	0.84384
sky130_fd_sc_hs__dlrtp_4	0.00000	1.00448	1.79598

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)	0.24633	0.74404	6.43491
	GATE->Q (-R)	0.21619	0.71674	6.31587
	RESET_B->Q (RR)	0.08047	0.59316	6.39686
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.25725	0.65730	6.40217
	GATE->Q (-R)	0.22647	0.62721	6.28120
	RESET_B->Q (RR)	0.08465	0.51609	6.41646
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.28396	0.61367	6.38782
	GATE->Q (-R)	0.25636	0.58815	6.28503
	RESET_B->Q (RR)	0.09115	0.45020	6.47339

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.20038	0.60718	4.34740
	GATE->Q (-F)	0.21594	0.47281	2.34335
	RESET_B->Q (FF)	0.08977	0.54834	4.58187
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.21091	0.58084	4.24387
	GATE->Q (-F)	0.22402	0.44095	2.22225
	RESET_B->Q (FF)	0.09373	0.53616	4.60554
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.22103	0.56289	4.21358
	GATE->Q (-F)	0.23363	0.42511	2.20222
	RESET_B->Q (FF)	0.10233	0.50676	4.53884

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 ()**	0.10404	0.67627	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.11923	0.67627	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.14202	0.67627	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	0.01603	0.01644	0.04029
	D	0.01256	0.01299	0.03698
	GATE	0.01922	0.01965	0.04831
	GATE	0.01557	0.01600	0.04486
	RESET_B	0.00919	0.00919	0.02607
	RESET_B	0.00522	0.00521	0.02226
sky130_fd_sc_hs__dlrtp_2	D	0.01883	0.01970	0.04359
	D	0.01536	0.01625	0.04047
	GATE	0.02175	0.02263	0.05150
	GATE	0.01814	0.01903	0.04840
	RESET_B	0.01186	0.01214	0.02742
	RESET_B	0.00776	0.00805	0.02364
sky130_fd_sc_hs__dlrtp_4	D	0.02651	0.02825	0.05246
	D	0.02298	0.02477	0.04971
	GATE	0.02935	0.03115	0.06025
	GATE	0.02566	0.02747	0.05762
	RESET_B	0.02053	0.02178	0.06294
	RESET_B	0.01427	0.01561	0.05724

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.01263	0.01422	0.03851
	D	0.01609	0.01749	0.04159
	GATE	0.01981	0.02091	0.04901
	GATE	0.01660	0.01759	0.04574
	RESET_B	0.01024	0.01103	0.03034
	RESET_B	0.01392	0.01467	0.03359
sky130_fd_sc_hs__dlrtp_2	D	0.01508	0.01688	0.04090
	D	0.01854	0.02033	0.04435
	GATE	0.02194	0.02341	0.05169
	GATE	0.01881	0.02023	0.04818
	RESET_B	0.01256	0.01347	0.03189
	RESET_B	0.01640	0.01722	0.03468
sky130_fd_sc_hs__dlrtp_4	D	0.02208	0.02464	0.04878
	D	0.02560	0.02815	0.05220
	GATE	0.02872	0.03096	0.05962
	GATE	0.02568	0.02786	0.05599
	RESET_B	0.02003	0.02276	0.06519
	RESET_B	0.02595	0.02831	0.06952

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)	0.00834	0.00880	0.03247
	(GATE * !RESET_B * !Q)	0.00533	0.00578	0.02945
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00510	0.00569	0.02915
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00186	0.00245	0.02591
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00845	0.00889	0.03251
	(GATE * !RESET_B * !Q)	0.00544	0.00588	0.02951
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00514	0.00571	0.02915
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00192	0.00248	0.02593
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00873	0.00916	0.03265
	(GATE * !RESET_B * !Q)	0.00573	0.00615	0.02966
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00512	0.00569	0.02903
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00191	0.00247	0.02582

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)	0.00702	0.00811	0.03227
	(GATE * !RESET_B * !Q)	0.01003	0.01113	0.03530
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00106	0.00227	0.02616
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00429	0.00553	0.02940
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00722	0.00829	0.03243
	(GATE * !RESET_B * !Q)	0.01023	0.01131	0.03545
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00113	0.00232	0.02619
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00434	0.00556	0.02941
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00829	0.00936	0.03339
	(GATE * !RESET_B * !Q)	0.01131	0.01239	0.03641
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00109	0.00228	0.02606
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00429	0.00550	0.02927

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)	0.00956	0.01021	0.03778
	(D * RESET_B * Q)	0.00613	0.00676	0.03436
	(D * !RESET_B * !Q)	0.01119	0.01173	0.03999
	(D * !RESET_B * !Q)	0.00799	0.00853	0.03679
	(!D * !Q)	0.00942	0.01008	0.03755
	(!D * !Q)	0.00599	0.00667	0.03413
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00934	0.00999	0.03760
	(D * RESET_B * Q)	0.00596	0.00660	0.03422
	(D * !RESET_B * !Q)	0.01104	0.01156	0.03986
	(D * !RESET_B * !Q)	0.00787	0.00839	0.03669
	(!D * !Q)	0.00917	0.00986	0.03739
	(!D * !Q)	0.00579	0.00647	0.03402
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00921	0.00985	0.03732
	(D * RESET_B * Q)	0.00584	0.00646	0.03395
	(D * !RESET_B * !Q)	0.01129	0.01180	0.03985
	(D * !RESET_B * !Q)	0.00813	0.00863	0.03669
	(!D * !Q)	0.00907	0.00976	0.03714
	(!D * !Q)	0.00571	0.00639	0.03377

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)	0.00560	0.00687	0.03513
	(D * RESET_B * Q)	0.00902	0.01030	0.03855
	(D * !RESET_B * !Q)	0.00958	0.01074	0.04022
	(D * !RESET_B * !Q)	0.01278	0.01394	0.04343
	(!D * !Q)	0.00567	0.00694	0.03535
	(!D * !Q)	0.00909	0.01038	0.03878
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00563	0.00690	0.03514
	(D * RESET_B * Q)	0.00900	0.01028	0.03852
	(D * !RESET_B * !Q)	0.00976	0.01093	0.04038
	(D * !RESET_B * !Q)	0.01293	0.01410	0.04355
	(!D * !Q)	0.00573	0.00701	0.03539
	(!D * !Q)	0.00909	0.01037	0.03877
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00558	0.00685	0.03505
	(D * RESET_B * Q)	0.00894	0.01022	0.03842
	(D * !RESET_B * !Q)	0.01087	0.01201	0.04129
	(D * !RESET_B * !Q)	0.01404	0.01519	0.04446
	(!D * !Q)	0.00560	0.00687	0.03496
	(!D * !Q)	0.00896	0.01024	0.03833

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)	0.00150	0.00151	0.00150
	(D * !GATE * !Q) + (!D * !Q)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00151	0.00153	0.00151
	(D * !GATE * !Q) + (!D * !Q)	-0.00198	-0.00199	-0.00199
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00251	0.00255	0.00252
	(D * !GATE * !Q) + (!D * !Q)	-0.00285	-0.00287	-0.00285

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)	-0.00141	-0.00150	-0.00149
	(D * !GATE * !Q) + (!D * !Q)	0.00193	0.00191	0.00188
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00144	-0.00151	-0.00150
	(D * !GATE * !Q) + (!D * !Q)	0.00207	0.00203	0.00201
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00237	-0.00251	-0.00251
	(D * !GATE * !Q) + (!D * !Q)	0.00297	0.00291	0.00288

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00229	0.00250	1.04092	1.06601
sky130_fd_sc_hs__dlxbn_2	0.00217	0.00247	1.82602	2.07577

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	0.72108	1.09016
sky130_fd_sc_hs__dlxbn_2	0.00000	0.70343	0.99090

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)	0.24918	0.75812	6.40031
	GATE_N->Q (-R)	0.28993	0.96993	8.48031
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.25615	0.67337	6.23698
	GATE_N->Q (-R)	0.29638	0.88444	8.31171

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.20416	0.61014	4.23617
	GATE_N->Q (-F)	0.21749	0.65925	4.50263
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.21329	0.57715	3.88003
	GATE_N->Q (-F)	0.22710	0.62674	4.14782

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)	0.25381	0.94260	8.84788
	GATE_N->Q_N (-R)	0.26726	0.99150	9.11512
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.28020	0.83564	8.50255
	GATE_N->Q_N (-R)	0.29424	0.88485	8.77006

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)	0.28577	0.53094	2.51057
	GATE_N->Q_N (-F)	0.32655	0.74272	4.59051
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.32157	0.54119	2.61927
	GATE_N->Q_N (-F)	0.36186	0.75267	4.69355

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01079	0.01145	0.02359
	D	0.00924	0.00989	0.02203
	GATE_N	0.01095	0.01198	0.02645
	GATE_N	0.01264	0.01367	0.02796
sky130_fd_sc_hs__dlxbn_2	D	0.01333	0.01446	0.02672
	D	0.01185	0.01288	0.02532
	GATE_N	0.01352	0.01488	0.02928
	GATE_N	0.01521	0.01659	0.03094

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00937	0.01033	0.02264
	D	0.01092	0.01187	0.02402
	GATE_N	0.01084	0.01184	0.02657
	GATE_N	0.01253	0.01353	0.02825
sky130_fd_sc_hs__dlxbn_2	D	0.01187	0.01326	0.02527
	D	0.01335	0.01466	0.02675
	GATE_N	0.01330	0.01464	0.02960
	GATE_N	0.01499	0.01632	0.03107

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00939	0.01036	0.02307
	D	0.01094	0.01190	0.02426
	GATE_N	0.01086	0.01186	0.02760
	GATE_N	0.01255	0.01355	0.02849
sky130_fd_sc_hs__dlxbn_2	D	0.01189	0.01326	0.02600
	D	0.01337	0.01469	0.02713
	GATE_N	0.01332	0.01467	0.02959
	GATE_N	0.01501	0.01635	0.03127

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01078	0.01144	0.02338
	D	0.00923	0.00987	0.02181
	GATE_N	0.01094	0.01196	0.02597
	GATE_N	0.01263	0.01366	0.02767
sky130_fd_sc_hs__dlxbn_2	D	0.01332	0.01436	0.02632
	D	0.01184	0.01287	0.02476
	GATE_N	0.01351	0.01490	0.02903
	GATE_N	0.01520	0.01658	0.03058

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)	0.00496	0.00562	0.02921
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00185	0.00251	0.02611
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00486	0.00541	0.02913
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00190	0.00244	0.02617

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)	0.00126	0.00248	0.02659
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00436	0.00559	0.02970
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00131	0.00255	0.02667
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00427	0.00552	0.02962

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)	0.00898	0.00962	0.03776
	(D * Q * !Q_N)	0.00559	0.00622	0.03436
	(!D * !Q * Q_N)	0.00883	0.00953	0.03738
	(!D * !Q * Q_N)	0.00544	0.00613	0.03399
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00895	0.00959	0.03774
	(D * Q * !Q_N)	0.00557	0.00620	0.03436
	(!D * !Q * Q_N)	0.00882	0.00950	0.03736
	(!D * !Q * Q_N)	0.00543	0.00612	0.03398

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)	0.00587	0.00709	0.03560
	(D * Q * !Q_N)	0.00926	0.01049	0.03899
	(!D * !Q * Q_N)	0.00589	0.00713	0.03571
	(!D * !Q * Q_N)	0.00928	0.01054	0.03910
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00583	0.00708	0.03556
	(D * Q * !Q_N)	0.00921	0.01046	0.03894
	(!D * !Q * Q_N)	0.00584	0.00709	0.03566
	(!D * !Q * Q_N)	0.00922	0.01047	0.03904

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00227	0.00251	1.05635	1.06645

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	0.72108	1.09016

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)	0.24397	0.75490	6.46907
	GATE->Q (-R)	0.21376	0.72569	6.34420

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.21134	0.62304	4.30286
	GATE->Q (-F)	0.22168	0.47996	2.27459

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)	0.26167	0.95211	8.87579
	GATE->Q_N (-R)	0.27212	0.80898	6.84603

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)	0.28074	0.52390	2.48401
	GATE->Q_N (-F)	0.25055	0.49473	2.35881

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01079	0.01144	0.02348
	D	0.00925	0.00990	0.02193
	GATE	0.01218	0.01291	0.02741
	GATE	0.01049	0.01113	0.02572

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00921	0.01017	0.02230
	D	0.01074	0.01170	0.02369
	GATE	0.01255	0.01334	0.02735
	GATE	0.01085	0.01158	0.02562

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00923	0.01018	0.02289
	D	0.01076	0.01171	0.02396
	GATE	0.01257	0.01342	0.02756
	GATE	0.01087	0.01160	0.02584

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01078	0.01142	0.02330
	D	0.00924	0.00989	0.02173
	GATE	0.01217	0.01284	0.02712
	GATE	0.01048	0.01111	0.02541

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)	0.00508	0.00570	0.02912
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00200	0.00261	0.02604

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)	0.00112	0.00234	0.02621
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00419	0.00542	0.02929

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)	0.00905	0.00968	0.03736
	(D * Q * !Q_N)	0.00565	0.00626	0.03395
	(!D * !Q * Q_N)	0.00908	0.00973	0.03734
	(!D * !Q * Q_N)	0.00567	0.00632	0.03394

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)	0.00549	0.00679	0.03502
	(D * Q * !Q_N)	0.00889	0.01019	0.03842
	(!D * !Q * Q_N)	0.00538	0.00667	0.03507
	(!D * !Q * Q_N)	0.00878	0.01006	0.03848

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00227	0.00253	1.06725
sky130_fd_sc_hs__dlxtn_2	0.00232	0.00252	1.99454
sky130_fd_sc_hs__dlxtn_4	0.00231	0.00251	3.95266

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.58528	0.79321
sky130_fd_sc_hs__dlxtn_2	0.00000	0.57280	0.84384
sky130_fd_sc_hs__dlxtn_4	0.00000	0.90378	1.20998

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)	0.23280	0.73386	6.37137
	GATE_N->Q (-R)	0.27413	0.94723	8.45526
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.23588	0.63115	6.15227
	GATE_N->Q (-R)	0.27535	0.84066	8.22695
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.26433	0.59072	6.40893
	GATE_N->Q (-R)	0.30236	0.79993	8.47330

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.18902	0.58443	4.14917
	GATE_N->Q (-F)	0.20438	0.63639	4.42094
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.19731	0.55686	4.02018
	GATE_N->Q (-F)	0.21116	0.60647	4.28887
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.21243	0.55482	4.25736
	GATE_N->Q (-F)	0.22912	0.61058	4.54408

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01531	0.01613	0.04007
	D	0.01210	0.01293	0.03706
	GATE_N	0.01556	0.01710	0.04552
	GATE_N	0.01903	0.02058	0.04904
sky130_fd_sc_hs__dlxtn_2	D	0.01793	0.01902	0.04307
	D	0.01467	0.01577	0.04052
	GATE_N	0.01808	0.01997	0.04850
	GATE_N	0.02153	0.02343	0.05206
sky130_fd_sc_hs__dlxtn_4	D	0.02544	0.02696	0.05110
	D	0.02217	0.02370	0.04856
	GATE_N	0.02557	0.02793	0.05658
	GATE_N	0.02902	0.03143	0.06022

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01282	0.01423	0.03889
	D	0.01602	0.01740	0.04166
	GATE_N	0.01564	0.01715	0.04735
	GATE_N	0.01911	0.02061	0.05024
sky130_fd_sc_hs__dlxtn_2	D	0.01516	0.01697	0.04185
	D	0.01842	0.02013	0.04444
	GATE_N	0.01794	0.01982	0.05010
	GATE_N	0.02140	0.02322	0.05265
sky130_fd_sc_hs__dlxtn_4	D	0.02217	0.02470	0.05286
	D	0.02543	0.02785	0.05228
	GATE_N	0.02499	0.02749	0.05766
	GATE_N	0.02847	0.03094	0.06076

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00497	0.00558	0.02907
	GATE_N	0.00177	0.00235	0.02586
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00499	0.00557	0.02909
	GATE_N	0.00172	0.00229	0.02582
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00501	0.00559	0.02910
	GATE_N	0.00174	0.00232	0.02583

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00155	0.00275	0.02677
	GATE_N	0.00475	0.00597	0.02998
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00153	0.00273	0.02676
	GATE_N	0.00479	0.00601	0.03002
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00156	0.00275	0.02678
	GATE_N	0.00482	0.00603	0.03004

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00935	0.00997	0.03802
	(D * Q)	0.00587	0.00649	0.03454
	(!D * !Q)	0.00919	0.00986	0.03752
	(!D * !Q)	0.00570	0.00637	0.03404
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00913	0.00978	0.03787
	(D * Q)	0.00568	0.00632	0.03441
	(!D * !Q)	0.00893	0.00962	0.03738
	(!D * !Q)	0.00548	0.00617	0.03392
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00922	0.00984	0.03791
	(D * Q)	0.00576	0.00637	0.03445
	(!D * !Q)	0.00902	0.00967	0.03740
	(!D * !Q)	0.00555	0.00622	0.03394

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00589	0.00712	0.03555
	(D * Q)	0.00936	0.01060	0.03903
	(!D * !Q)	0.00593	0.00720	0.03567
	(!D * !Q)	0.00940	0.01069	0.03915
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00582	0.00705	0.03552
	(D * Q)	0.00927	0.01052	0.03898
	(!D * !Q)	0.00590	0.00718	0.03568
	(!D * !Q)	0.00934	0.01064	0.03914
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00587	0.00711	0.03555
	(D * Q)	0.00932	0.01058	0.03901
	(!D * !Q)	0.00594	0.00723	0.03570
	(!D * !Q)	0.00940	0.01068	0.03917

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00223	0.00257	1.04807

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.54261	0.79097

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)	0.27655	0.78034	6.48655
	GATE->Q (-R)	0.22169	0.72840	6.35863

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.20380	0.60519	4.26850
	GATE->Q (-F)	0.21696	0.47224	2.28501

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01662	0.01745	0.04137
	D	0.01331	0.01415	0.03821
	GATE	0.01983	0.02039	0.04254
	GATE	0.01621	0.01677	0.03911

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01449	0.01596	0.04039
	D	0.01779	0.01924	0.04359
	GATE	0.02119	0.02225	0.04827
	GATE	0.01791	0.01887	0.04478

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00468	0.00539	0.02921
	!GATE	0.00153	0.00225	0.02607

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00128	0.00241	0.02657
	!GATE	0.00441	0.00557	0.02971

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00984	0.01055	0.03845
	(D * Q)	0.00638	0.00708	0.03499
	(!D * !Q)	0.00949	0.01023	0.03801
	(!D * !Q)	0.00603	0.00676	0.03455

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00483	0.00613	0.03465
	(D * Q)	0.00827	0.00959	0.03811
	(!D * !Q)	0.00521	0.00652	0.03510
	(!D * !Q)	0.00866	0.00998	0.03856

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00179	1.06514
sky130_fd_sc_hs__dlygate4sd2_1	0.00181	1.06007
sky130_fd_sc_hs__dlygate4sd3_1	0.00183	1.05808

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.03698	0.05751
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.03492	0.05545
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.03530	0.05584

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)**	0.16132	0.66723	6.19149
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.20590	0.71794	6.27489
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.36024	0.89323	6.55977

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.20398	0.67491	4.80266
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.24954	0.73641	4.88915
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.37688	0.90889	5.16715

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01168	0.01160	0.01934
	A	0.00916	0.00908	0.01712
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01220	0.01209	0.01948
	A	0.00966	0.00955	0.01715
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01386	0.01377	0.02081
	A	0.01129	0.01121	0.01833

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00879	0.00904	0.01694
	A	0.01131	0.01155	0.01890
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00934	0.00951	0.01688
	A	0.01188	0.01205	0.01890
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01144	0.01115	0.01771
	A	0.01400	0.01393	0.02008

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00232	0.00431	0.53489
sky130_fd_sc_hs__ebufn_2	0.00252	0.00564	0.90034
sky130_fd_sc_hs__ebufn_4	0.00277	0.00865	1.77673
sky130_fd_sc_hs__ebufn_8	0.00533	0.01439	3.14791

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ebufn_1	0.00000	0.35524	0.58682
sky130_fd_sc_hs__ebufn_2	0.00000	0.18504	0.27096
sky130_fd_sc_hs__ebufn_4	0.00000	0.10865	0.22392
sky130_fd_sc_hs__ebufn_8	0.00000	0.17998	0.44164

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)	0.08066	0.73261	6.53989
	TE_B->Z (RR)	0.02748	0.37830	4.86218
	TE_B->Z (FR)	0.06441	0.95315	10.73710
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.07400	0.63422	6.51613
	TE_B->Z (RR)	0.02956	0.37909	4.86296
	TE_B->Z (FR)	0.06395	0.84107	10.68620
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.08153	0.55899	6.57874
	TE_B->Z (RR)	0.03764	0.38111	4.86492
	TE_B->Z (FR)	0.06017	0.71321	10.57060
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.08733	0.48849	6.63197
	TE_B->Z (RR)	0.06182	0.38550	4.86918
	TE_B->Z (FR)	0.06760	0.63116	10.43560

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.08080	0.48231	3.66789
	TE_B->Z (RF)	0.02732	0.37828	4.86220
	TE_B->Z (FF)	0.06524	0.43561	3.54698
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.09234	0.49796	3.77883
	TE_B->Z (RF)	0.02922	0.37907	4.86297
	TE_B->Z (FF)	0.07041	0.42785	3.60181
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.12226	0.55908	4.16842
	TE_B->Z (RF)	0.03755	0.38106	4.86496
	TE_B->Z (FF)	0.08396	0.45716	3.88157
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.11882	0.53171	4.30056
	TE_B->Z (RF)	0.06092	0.38538	4.86927
	TE_B->Z (FF)	0.11842	0.51782	4.25253

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00659	0.00741	0.03125
	A	0.00324	0.00407	0.02796
	TE_B	0.00296	0.00434	0.02866
	TE_B	0.00894	0.01034	0.03472
sky130_fd_sc_hs__ebufn_2	A	0.00938	0.01052	0.03493
	A	0.00581	0.00695	0.03147
	TE_B	0.00576	0.00698	0.03200
	TE_B	0.01356	0.01482	0.03994
sky130_fd_sc_hs__ebufn_4	A	0.01498	0.01646	0.03806
	A	0.01103	0.01253	0.03428
	TE_B	0.01162	0.01255	0.03519
	TE_B	0.02367	0.02462	0.04746
sky130_fd_sc_hs__ebufn_8	A	0.02907	0.03224	0.07637
	A	0.02141	0.02460	0.06890
	TE_B	0.02382	0.02448	0.04602
	TE_B	0.04396	0.04466	0.06641

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00317	0.00465	0.02855
	A	0.00651	0.00796	0.03178
	TE_B	0.00336	0.00500	0.02914
	TE_B	0.00923	0.01086	0.03493
sky130_fd_sc_hs__ebufn_2	A	0.00568	0.00747	0.03140
	A	0.00925	0.01094	0.03493
	TE_B	0.00660	0.00808	0.03286
	TE_B	0.01412	0.01555	0.04023
sky130_fd_sc_hs__ebufn_4	A	0.01087	0.01345	0.03452
	A	0.01480	0.01714	0.03838
	TE_B	0.01311	0.01440	0.03725
	TE_B	0.02469	0.02595	0.04817
sky130_fd_sc_hs__ebufn_8	A	0.02138	0.02572	0.07074
	A	0.02903	0.03321	0.07707
	TE_B	0.02669	0.02760	0.04973
	TE_B	0.04590	0.04679	0.06805

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00435	0.00508	0.02885
	(TE_B * Z)	0.00097	0.00169	0.02547
	(TE_B * !Z)	0.00425	0.00495	0.02867
	(TE_B * !Z)	0.00088	0.00158	0.02530
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00603	0.00677	0.03112
	(TE_B * Z)	0.00234	0.00305	0.02742
	(TE_B * !Z)	0.00569	0.00630	0.03060
	(TE_B * !Z)	0.00201	0.00260	0.02692
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00888	0.00938	0.03078
	(TE_B * Z)	0.00479	0.00526	0.02668
	(TE_B * !Z)	0.00830	0.00866	0.02993
	(TE_B * !Z)	0.00425	0.00458	0.02588
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01646	0.01737	0.06117
	(TE_B * Z)	0.00850	0.00939	0.05320
	(TE_B * !Z)	0.01531	0.01608	0.05944
	(TE_B * !Z)	0.00741	0.00816	0.05155

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00057	0.00186	0.02583
	(TE_B * Z)	0.00396	0.00528	0.02925
	(TE_B * !Z)	0.00064	0.00197	0.02602
	(TE_B * !Z)	0.00401	0.00535	0.02938
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00122	0.00228	0.02660
	(TE_B * Z)	0.00496	0.00605	0.03038
	(TE_B * !Z)	0.00150	0.00264	0.02717
	(TE_B * !Z)	0.00515	0.00631	0.03083
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00233	0.00313	0.02482
	(TE_B * Z)	0.00654	0.00735	0.02907
	(TE_B * !Z)	0.00284	0.00371	0.02570
	(TE_B * !Z)	0.00686	0.00775	0.02975
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00395	0.00575	0.04978
	(TE_B * Z)	0.01210	0.01396	0.05805
	(TE_B * !Z)	0.00499	0.00691	0.05153
	(TE_B * !Z)	0.01281	0.01476	0.05938

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00369	0.00420	0.02818
	(A * Z)	-0.00220	-0.00171	0.02228
	(!A * !Z)	0.00374	0.00422	0.02821
	(!A * !Z)	-0.00214	-0.00166	0.02232
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00412	0.00438	0.02905
	(A * Z)	-0.00340	-0.00316	0.02150
	(!A * !Z)	0.00428	0.00449	0.02914
	(!A * !Z)	-0.00324	-0.00307	0.02159
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00518	0.00487	0.02657
	(A * Z)	-0.00636	-0.00679	0.01495
	(!A * !Z)	0.00531	0.00494	0.02663
	(!A * !Z)	-0.00622	-0.00668	0.01504
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00713	0.00594	0.02573
	(A * Z)	-0.01205	-0.01341	0.00644
	(!A * !Z)	0.00712	0.00597	0.02600
	(!A * !Z)	-0.01202	-0.01330	0.00673

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00083	0.00227	0.02650
	(A * Z)	0.00670	0.00818	0.03239
	(!A * !Z)	0.00081	0.00230	0.02647
	(!A * !Z)	0.00670	0.00822	0.03235
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00207	0.00338	0.02825
	(A * Z)	0.00961	0.01097	0.03581
	(!A * !Z)	0.00204	0.00338	0.02820
	(!A * !Z)	0.00955	0.01088	0.03575
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00441	0.00539	0.02790
	(A * Z)	0.01597	0.01704	0.03954
	(!A * !Z)	0.00446	0.00566	0.02792
	(!A * !Z)	0.01599	0.01724	0.03954
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00914	0.01006	0.03133
	(A * Z)	0.02835	0.02939	0.05063
	(!A * !Z)	0.00943	0.01019	0.03160
	(!A * !Z)	0.02855	0.02944	0.05086

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00183	0.00360	0.00290	1.07699	1.07948

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.49057	0.80035

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)	0.19921	0.72745	6.34541

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.18934	0.50670	2.45791

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)	0.27824	0.78879	6.41941

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)	0.26830	0.54246	2.37178

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)	-0.09643	-0.18391	-0.77380
	setup	CLK (R)	0.12153	0.20145	0.78693

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)	-0.32254	-0.46580	-3.66093
	setup	CLK (R)	0.42488	0.54283	3.82029

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)	-0.09643	-0.18391	-0.77380
	setup	CLK (R)	0.12153	0.20145	0.78693

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)	-0.32254	-0.46580	-3.66093
	setup	CLK (R)	0.42488	0.54283	3.82029

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)	-0.00204	0.00574	0.18401
	setup	CLK (R)	0.45811	0.47165	0.76151

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)	-0.16077	-0.29231	-2.54821
	setup	CLK (R)	0.37028	0.49384	3.54602

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)	-0.00204	0.00574	0.18401
	hold	CLK (R)	-0.17245	-0.21072	-0.42293
	setup	CLK (R)	0.12112	0.18290	0.76151
	setup	CLK (R)	0.45811	0.47165	0.75720

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)	-0.34596	-0.47734	-3.53116
	hold	CLK (R)	-0.16077	-0.29231	-2.54821
	setup	CLK (R)	0.37028	0.49384	3.54602
	setup	CLK (R)	0.17894	0.30111	2.55641

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 ()	0.08884	0.67627	16.50020
	min_pulse_width	CLK ()	0.14961	0.67627	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 ()	0.16227	0.67627	16.50020
	min_pulse_width	CLK ()	0.28381	0.67627	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	0.01482	0.01521	0.02673
	CLK	0.01289	0.01320	0.02480

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01450	0.01462	0.02618
	CLK	0.01242	0.01254	0.02408

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01452	0.01474	0.02654
	CLK	0.01244	0.01257	0.02441

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01480	0.01511	0.02664
	CLK	0.01287	0.01318	0.02469

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00561	0.00563	0.01151
	(CLK * DE)	0.00291	0.00290	0.00880
	(CLK * !DE)	0.00110	0.00111	0.00111
	(CLK * !DE)	-0.00062	-0.00063	-0.00062
	(!CLK * DE * Q * !Q_N)	0.01267	0.01276	0.01940
	(!CLK * DE * Q * !Q_N)	0.00995	0.01005	0.01668
	(!CLK * DE * !Q * Q_N)	0.01206	0.01216	0.01868
	(!CLK * DE * !Q * Q_N)	0.00931	0.00941	0.01594
	(!CLK * !DE)	0.00111	0.00111	0.00111
	(!CLK * !DE)	-0.00062	-0.00063	-0.00062

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00204	0.00202	0.00762
	(CLK * DE)	0.00479	0.00476	0.01036
	(CLK * !DE)	-0.00035	-0.00035	-0.00034
	(CLK * !DE)	0.00138	0.00138	0.00137
	(!CLK * DE * Q * !Q_N)	0.00939	0.00937	0.01703
	(!CLK * DE * Q * !Q_N)	0.01212	0.01208	0.01974
	(!CLK * DE * !Q * Q_N)	0.00994	0.00992	0.01778
	(!CLK * DE * !Q * Q_N)	0.01268	0.01266	0.02052
	(!CLK * !DE)	-0.00035	-0.00035	-0.00034
	(!CLK * !DE)	0.00138	0.00138	0.00137

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00892	0.00920	0.02967
	CLK	0.00277	0.00301	0.02350
	(!CLK * D * Q * !Q_N)	0.00496	0.00519	0.02086
	(!CLK * D * Q * !Q_N)	-0.00006	0.00013	0.01582
	(!CLK * D * !Q * Q_N)	0.01589	0.01617	0.03722
	(!CLK * D * !Q * Q_N)	0.00974	0.01001	0.03106
	(!CLK * !D * Q * !Q_N)	0.01545	0.01567	0.03136
	(!CLK * !D * Q * !Q_N)	0.01145	0.01165	0.02733
	(!CLK * !D * !Q * Q_N)	0.00495	0.00523	0.02088
	(!CLK * !D * !Q * Q_N)	-0.00004	0.00022	0.01588

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00285	0.00344	0.02394
	CLK	0.00901	0.00960	0.03008
	(!CLK * D * Q * !Q_N)	-0.00010	0.00061	0.01636
	(!CLK * D * Q * !Q_N)	0.00492	0.00566	0.02139
	(!CLK * D * !Q * Q_N)	0.01068	0.01129	0.03329
	(!CLK * D * !Q * Q_N)	0.01685	0.01745	0.03944
	(!CLK * !D * Q * !Q_N)	0.01233	0.01300	0.02853
	(!CLK * !D * Q * !Q_N)	0.01633	0.01704	0.03257
	(!CLK * !D * !Q * Q_N)	-0.00014	0.00067	0.01632
	(!CLK * !D * !Q * Q_N)	0.00483	0.00568	0.02133

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)	0.01406	0.01425	0.03653
	(D * Q * !Q_N)	0.01002	0.01020	0.03250
	(D * !DE * !Q * Q_N)	0.01369	0.01389	0.03623
	(D * !DE * !Q * Q_N)	0.00965	0.00985	0.03220
	(!D * !Q * Q_N)	0.01369	0.01389	0.03624
	(!D * !Q * Q_N)	0.00965	0.00985	0.03220
	(!D * !DE * Q * !Q_N)	0.01405	0.01425	0.03653
	(!D * !DE * Q * !Q_N)	0.01001	0.01020	0.03250

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)	0.00718	0.00788	0.03083
	(D * Q * !Q_N)	0.01121	0.01192	0.03487
	(D * DE * !Q * Q_N)	0.01437	0.01491	0.03832
	(D * DE * !Q * Q_N)	0.01840	0.01895	0.04235
	(D * !DE * !Q * Q_N)	0.00754	0.00818	0.03109
	(D * !DE * !Q * Q_N)	0.01157	0.01220	0.03512
	(!D * DE * Q * !Q_N)	0.01610	0.01690	0.04047
	(!D * DE * Q * !Q_N)	0.02012	0.02092	0.04450
	(!D * !Q * Q_N)	0.00755	0.00822	0.03110
	(!D * !Q * Q_N)	0.01157	0.01226	0.03513
	(!D * !DE * Q * !Q_N)	0.00718	0.00787	0.03083
	(!D * !DE * Q * !Q_N)	0.01121	0.01192	0.03487

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00186	0.00347	0.00284	1.06684

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.50355	0.88596

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)	0.18883	0.71119	6.26241

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.17476	0.47408	2.31140

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)	-0.09141	-0.18239	-0.77386
	setup	CLK (R)	0.12030	0.20018	0.79361

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)	-0.31729	-0.46165	-3.65201
	setup	CLK (R)	0.42342	0.54329	3.83379

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)	-0.00377	0.00396	0.17655
	setup	CLK (R)	0.45740	0.46884	0.80926

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)	-0.15873	-0.29004	-2.56265
	setup	CLK (R)	0.36746	0.48944	3.54165

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)	-0.00377	0.00396	0.17655
	hold	CLK (R)	-0.17123	-0.20357	-0.41439
	setup	CLK (R)	0.11777	0.18187	0.76296
	setup	CLK (R)	0.45740	0.46884	0.80926

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)	-0.34297	-0.47459	-3.52559
	hold	CLK (R)	-0.15873	-0.29004	-2.56265
	setup	CLK (R)	0.36746	0.48944	3.54165
	setup	CLK (R)	0.17354	0.30152	2.56839

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 ()	0.08378	0.67627	16.50020
	min_pulse_width	CLK ()	0.13442	0.67627	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 ()	0.15721	0.67627	16.50020
	min_pulse_width	CLK ()	0.28634	0.67627	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	0.02495	0.02550	0.04870
	CLK	0.02113	0.02169	0.04519

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.02409	0.02444	0.04802
	CLK	0.02001	0.02036	0.04375

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00544	0.00544	0.01136
	(CLK * DE)	0.00271	0.00269	0.00863
	(CLK * !DE)	0.00112	0.00113	0.00112
	(CLK * !DE)	-0.00064	-0.00064	-0.00064
	(!CLK * DE * Q)	0.01245	0.01254	0.01923
	(!CLK * DE * Q)	0.00973	0.00980	0.01650
	(!CLK * DE * !Q)	0.01184	0.01193	0.01851
	(!CLK * DE * !Q)	0.00907	0.00916	0.01574
	(!CLK * !DE)	0.00111	0.00112	0.00112
	(!CLK * !DE)	-0.00064	-0.00064	-0.00064

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00196	0.00194	0.00757
	(CLK * DE)	0.00474	0.00470	0.01033
	(CLK * !DE)	-0.00034	-0.00034	-0.00033
	(CLK * !DE)	0.00141	0.00141	0.00141
	(!CLK * DE * Q)	0.00895	0.00893	0.01662
	(!CLK * DE * Q)	0.01170	0.01166	0.01936
	(!CLK * DE * !Q)	0.00953	0.00952	0.01743
	(!CLK * DE * !Q)	0.01231	0.01228	0.02020
	(!CLK * !DE)	-0.00034	-0.00033	-0.00033
	(!CLK * !DE)	0.00141	0.00141	0.00141

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00864	0.00894	0.02947
	CLK	0.00267	0.00295	0.02349
	(!CLK * D * Q)	0.00483	0.00507	0.02078
	(!CLK * D * Q)	-0.00002	0.00021	0.01593
	(!CLK * D * !Q)	0.01552	0.01585	0.03696
	(!CLK * D * !Q)	0.00955	0.00986	0.03098
	(!CLK * !D * Q)	0.01487	0.01509	0.03083
	(!CLK * !D * Q)	0.01103	0.01126	0.02699
	(!CLK * !D * !Q)	0.00481	0.00513	0.02081
	(!CLK * !D * !Q)	0.00003	0.00030	0.01601

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00280	0.00339	0.02391
	CLK	0.00878	0.00937	0.02987
	(!CLK * D * Q)	-0.00006	0.00065	0.01641
	(!CLK * D * Q)	0.00477	0.00551	0.02125
	(!CLK * D * !Q)	0.01031	0.01092	0.03293
	(!CLK * D * !Q)	0.01629	0.01690	0.03888
	(!CLK * !D * Q)	0.01214	0.01282	0.02838
	(!CLK * !D * Q)	0.01595	0.01664	0.03224
	(!CLK * !D * !Q)	-0.00012	0.00070	0.01636
	(!CLK * !D * !Q)	0.00466	0.00552	0.02118

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01347	0.01369	0.03610
	(D * Q)	0.00952	0.00973	0.03215
	(D * !DE * !Q)	0.01353	0.01369	0.03624
	(D * !DE * !Q)	0.00959	0.00974	0.03228
	(!D * !Q)	0.01354	0.01369	0.03624
	(!D * !Q)	0.00959	0.00974	0.03229
	(!D * !DE * Q)	0.01347	0.01369	0.03610
	(!D * !DE * Q)	0.00952	0.00973	0.03215

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00719	0.00791	0.03094
	(D * Q)	0.01114	0.01187	0.03489
	(D * DE * !Q)	0.01391	0.01446	0.03796
	(D * DE * !Q)	0.01787	0.01842	0.04191
	(D * !DE * !Q)	0.00712	0.00778	0.03074
	(D * !DE * !Q)	0.01108	0.01174	0.03469
	(!D * DE * Q)	0.01570	0.01646	0.04009
	(!D * DE * Q)	0.01966	0.02041	0.04405
	(!D * !Q)	0.00712	0.00778	0.03074
	(!D * !Q)	0.01108	0.01174	0.03469
	(!D * !DE * Q)	0.00718	0.00791	0.03094
	(!D * !DE * Q)	0.01114	0.01187	0.03489

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00282	0.00317	0.53155
sky130_fd_sc_hs__einvn_2	0.00529	0.00479	0.96763
sky130_fd_sc_hs__einvn_4	0.01055	0.00860	1.84699
sky130_fd_sc_hs__einvn_8	0.02112	0.01433	3.27610

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	0.16198	0.22745
sky130_fd_sc_hs__einvn_2	0.00000	0.17243	0.22844
sky130_fd_sc_hs__einvn_4	0.00000	0.07911	0.21772
sky130_fd_sc_hs__einvn_8	0.00000	0.12090	0.42925

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)	0.05420	0.94776	10.88210
	TE_B->Z (RR)	0.02874	0.37795	4.86189
	TE_B->Z (FR)	0.06329	0.95149	10.69830
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.03716	0.80850	10.81280
	TE_B->Z (RR)	0.03724	0.37966	4.86357
	TE_B->Z (FR)	0.05663	0.81610	10.61720
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.03431	0.70156	10.78350
	TE_B->Z (RR)	0.03835	0.38113	4.86498
	TE_B->Z (FR)	0.05395	0.69612	10.43420
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.03611	0.62573	10.66190
	TE_B->Z (RR)	0.06055	0.38753	4.87121
	TE_B->Z (FR)	0.06302	0.61079	10.14140

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.02171	0.40768	4.63913
	TE_B->Z (RF)	0.02834	0.37794	4.86188
	TE_B->Z (FF)	0.06445	0.44359	3.48281
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01812	0.35423	4.74306
	TE_B->Z (RF)	0.03657	0.37967	4.86358
	TE_B->Z (FF)	0.07460	0.45320	3.70869
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01753	0.30420	4.77859
	TE_B->Z (RF)	0.03806	0.38109	4.86502
	TE_B->Z (FF)	0.07636	0.43675	3.84703
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.01950	0.27724	5.01457
	TE_B->Z (RF)	0.05973	0.38748	4.87136
	TE_B->Z (FF)	0.10653	0.49123	4.19949

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00047	-0.00005	0.00458
	A	0.00338	0.00379	0.00846
	TE_B	0.00199	0.00282	0.01913
	TE_B	0.00773	0.00857	0.02493
sky130_fd_sc_hs__einvn_2	A	-0.00190	-0.00089	0.00815
	A	0.00554	0.00656	0.01567
	TE_B	0.00305	0.00385	0.01995
	TE_B	0.01239	0.01319	0.02943
sky130_fd_sc_hs__einvn_4	A	-0.00378	-0.00120	0.01598
	A	0.01106	0.01366	0.03099
	TE_B	0.00629	0.00731	0.03054
	TE_B	0.02365	0.02473	0.04791
sky130_fd_sc_hs__einvn_8	A	-0.00707	-0.00277	0.03191
	A	0.02264	0.02700	0.06200
	TE_B	0.01313	0.01391	0.03616
	TE_B	0.04392	0.04477	0.06772

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00355	0.00367	0.00595
	A	-0.00028	-0.00016	0.00210
	TE_B	0.00377	0.00467	0.01989
	TE_B	0.00683	0.00769	0.02284
sky130_fd_sc_hs__einvn_2	A	0.00584	0.00653	0.01142
	A	-0.00157	-0.00088	0.00334
	TE_B	0.00641	0.00730	0.02316
	TE_B	0.01051	0.01137	0.02723
sky130_fd_sc_hs__einvn_4	A	0.01179	0.01269	0.02261
	A	-0.00298	-0.00213	0.00688
	TE_B	0.01324	0.01457	0.03733
	TE_B	0.01987	0.02117	0.04390
sky130_fd_sc_hs__einvn_8	A	0.02351	0.02535	0.04484
	A	-0.00613	-0.00439	0.01378
	TE_B	0.02677	0.02767	0.05058
	TE_B	0.03584	0.03671	0.05866

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00078	0.00079	0.00078
	(TE_B * Z)	-0.00128	-0.00128	-0.00127
	(TE_B * !Z)	0.00086	0.00088	0.00086
	(TE_B * !Z)	-0.00115	-0.00117	-0.00115
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00148	0.00149	0.00144
	(TE_B * Z)	-0.00248	-0.00250	-0.00249
	(TE_B * !Z)	0.00174	0.00175	0.00174
	(TE_B * !Z)	-0.00207	-0.00208	-0.00207
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00271	0.00273	0.00263
	(TE_B * Z)	-0.00492	-0.00496	-0.00494
	(TE_B * !Z)	0.00316	0.00318	0.00318
	(TE_B * !Z)	-0.00422	-0.00426	-0.00424
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00521	0.00525	0.00505
	(TE_B * Z)	-0.00973	-0.00980	-0.00975
	(TE_B * !Z)	0.00620	0.00625	0.00622
	(TE_B * !Z)	-0.00840	-0.00847	-0.00838

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00077	-0.00076	-0.00076
	(TE_B * Z)	0.00128	0.00128	0.00127
	(TE_B * !Z)	-0.00086	-0.00088	-0.00086
	(TE_B * !Z)	0.00118	0.00119	0.00117
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00141	-0.00142	-0.00141
	(TE_B * Z)	0.00248	0.00250	0.00249
	(TE_B * !Z)	-0.00174	-0.00175	-0.00174
	(TE_B * !Z)	0.00216	0.00217	0.00208
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00258	-0.00260	-0.00259
	(TE_B * Z)	0.00492	0.00496	0.00494
	(TE_B * !Z)	-0.00316	-0.00318	-0.00318
	(TE_B * !Z)	0.00440	0.00440	0.00424
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00500	-0.00504	-0.00501
	(TE_B * Z)	0.00973	0.00980	0.00975
	(TE_B * !Z)	-0.00620	-0.00625	-0.00622
	(TE_B * !Z)	0.00862	0.00863	0.00838

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00265	0.00296	0.01910
	(A * !Z)	-0.00164	-0.00143	0.01473
	(!A * Z)	0.00253	0.00289	0.01906
	(!A * Z)	-0.00164	-0.00141	0.01475
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00321	0.00323	0.01878
	(A * !Z)	-0.00338	-0.00348	0.01214
	(!A * Z)	0.00290	0.00311	0.01870
	(!A * Z)	-0.00336	-0.00343	0.01218
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00536	0.00505	0.02733
	(A * !Z)	-0.00631	-0.00690	0.01552
	(!A * Z)	0.00470	0.00474	0.02715
	(!A * Z)	-0.00631	-0.00673	0.01559
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00661	0.00574	0.02628
	(A * !Z)	-0.01249	-0.01402	0.00665
	(!A * Z)	0.00537	0.00508	0.02571
	(!A * Z)	-0.01253	-0.01376	0.00670

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00125	0.00221	0.01846
	(A * !Z)	0.00562	0.00660	0.02284
	(!A * Z)	0.00129	0.00219	0.01851
	(!A * Z)	0.00555	0.00647	0.02278
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00215	0.00294	0.01890
	(A * !Z)	0.00885	0.00969	0.02561
	(!A * Z)	0.00229	0.00307	0.01906
	(!A * Z)	0.00874	0.00958	0.02554
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00434	0.00564	0.02837
	(A * !Z)	0.01622	0.01761	0.04032
	(!A * Z)	0.00461	0.00567	0.02869
	(!A * Z)	0.01599	0.01712	0.04012
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00919	0.01005	0.03203
	(A * !Z)	0.02882	0.02968	0.05166
	(!A * Z)	0.00961	0.01050	0.03252
	(!A * Z)	0.02824	0.02913	0.05122

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00283	0.00280	0.49473
sky130_fd_sc_hs__einvp_2	0.00521	0.00435	0.98767
sky130_fd_sc_hs__einvp_4	0.01055	0.00784	1.84698
sky130_fd_sc_hs__einvp_8	0.02114	0.01235	3.24090

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.02770	0.14194
sky130_fd_sc_hs__einvp_2	0.00000	0.09749	0.33223
sky130_fd_sc_hs__einvp_4	0.00000	0.06355	0.26441
sky130_fd_sc_hs__einvp_8	0.00000	0.10534	0.47594

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)	0.05835	0.97576	10.95290
	TE->Z (FR)	0.09401	0.38258	4.86178
	TE->Z (RR)	0.08692	0.75592	6.33244
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.03629	0.80239	10.79360
	TE->Z (FR)	0.08721	0.37923	4.86282
	TE->Z (RR)	0.08525	0.61675	6.43275
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.03429	0.70057	10.75460
	TE->Z (FR)	0.10039	0.38164	4.86461
	TE->Z (RR)	0.08354	0.50940	6.28564
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.03622	0.62800	10.68180
	TE->Z (FR)	0.16810	0.48644	4.87021
	TE->Z (RR)	0.10519	0.49518	6.40260

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.02206	0.39735	4.42190
	TE->Z (FF)	0.09494	0.38462	4.86175
	TE->Z (RF)	0.02273	0.36377	4.00042
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01763	0.34630	4.63697
	TE->Z (FF)	0.08836	0.37914	4.86275
	TE->Z (RF)	0.02117	0.31387	4.11665
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01780	0.30763	4.82081
	TE->Z (FF)	0.10215	0.38133	4.86442
	TE->Z (RF)	0.02251	0.26186	4.00593
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.01968	0.28492	5.13149
	TE->Z (FF)	0.17125	0.49287	4.86961
	TE->Z (RF)	0.02776	0.21998	3.82252

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00067	-0.00014	0.00538
	A	0.00327	0.00379	0.00934
	TE	0.00642	0.00658	0.01383
	TE	0.00411	0.00425	0.01158
sky130_fd_sc_hs__einvp_2	A	-0.00187	-0.00063	0.00840
	A	0.00543	0.00671	0.01581
	TE	0.01009	0.01046	0.02638
	TE	0.00705	0.00740	0.02348
sky130_fd_sc_hs__einvp_4	A	-0.00364	-0.00143	0.01628
	A	0.01119	0.01343	0.03130
	TE	0.01920	0.01953	0.04227
	TE	0.01440	0.01475	0.03800
sky130_fd_sc_hs__einvp_8	A	-0.00704	-0.00293	0.03027
	A	0.02269	0.02684	0.06038
	TE	0.03366	0.03385	0.05495
	TE	0.02882	0.02901	0.05081

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00367	0.00380	0.00621
	A	-0.00025	-0.00013	0.00213
	TE	0.00819	0.00839	0.01601
	TE	0.00295	0.00306	0.01074
sky130_fd_sc_hs__einvp_2	A	0.00587	0.00635	0.01121
	A	-0.00143	-0.00099	0.00353
	TE	0.01311	0.01351	0.02974
	TE	0.00461	0.00495	0.02064
sky130_fd_sc_hs__einvp_4	A	0.01161	0.01261	0.02173
	A	-0.00316	-0.00228	0.00682
	TE	0.02518	0.02555	0.04809
	TE	0.00921	0.00951	0.03191
sky130_fd_sc_hs__einvp_8	A	0.02341	0.02511	0.04430
	A	-0.00624	-0.00460	0.01310
	TE	0.04562	0.04582	0.06827
	TE	0.01819	0.01830	0.03908

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00067	0.00067	0.00067
	(!TE * Z)	-0.00130	-0.00130	-0.00130
	(!TE * !Z)	0.00076	0.00076	0.00075
	(!TE * !Z)	-0.00119	-0.00120	-0.00118
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00123	0.00124	0.00120
	(!TE * Z)	-0.00261	-0.00264	-0.00263
	(!TE * !Z)	0.00145	0.00146	0.00146
	(!TE * !Z)	-0.00219	-0.00220	-0.00220
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00236	0.00234	0.00228
	(!TE * Z)	-0.00519	-0.00522	-0.00520
	(!TE * !Z)	0.00282	0.00284	0.00283
	(!TE * !Z)	-0.00437	-0.00440	-0.00438
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00461	0.00458	0.00448
	(!TE * Z)	-0.01003	-0.01010	-0.01004
	(!TE * !Z)	0.00549	0.00556	0.00552
	(!TE * !Z)	-0.00842	-0.00853	-0.00846

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00067	-0.00067	-0.00066
	(!TE * Z)	0.00130	0.00130	0.00130
	(!TE * !Z)	-0.00076	-0.00076	-0.00075
	(!TE * !Z)	0.00119	0.00120	0.00118
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00119	-0.00120	-0.00119
	(!TE * Z)	0.00261	0.00264	0.00263
	(!TE * !Z)	-0.00145	-0.00146	-0.00146
	(!TE * !Z)	0.00232	0.00232	0.00221
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00228	-0.00229	-0.00228
	(!TE * Z)	0.00519	0.00522	0.00520
	(!TE * !Z)	-0.00282	-0.00284	-0.00283
	(!TE * !Z)	0.00457	0.00460	0.00439
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00450	-0.00453	-0.00448
	(!TE * Z)	0.01003	0.01010	0.01004
	(!TE * !Z)	-0.00549	-0.00556	-0.00552
	(!TE * !Z)	0.00877	0.00884	0.00846

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00573	0.00592	0.01360
	(A * !Z)	0.00209	0.00227	0.00997
	(!A * Z)	0.00568	0.00586	0.01353
	(!A * Z)	0.00197	0.00213	0.00981
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00884	0.00922	0.02491
	(A * !Z)	0.00328	0.00363	0.01935
	(!A * Z)	0.00886	0.00926	0.02487
	(!A * Z)	0.00308	0.00342	0.01908
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01675	0.01712	0.03951
	(A * !Z)	0.00682	0.00713	0.02956
	(!A * Z)	0.01678	0.01716	0.03942
	(!A * Z)	0.00638	0.00674	0.02900
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.02893	0.02936	0.04998
	(A * !Z)	0.01370	0.01402	0.03468
	(!A * Z)	0.02897	0.02932	0.04982
	(!A * Z)	0.01282	0.01307	0.03360

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00115	-0.00094	0.00615
	(A * !Z)	0.00243	0.00271	0.00978
	(!A * Z)	-0.00121	-0.00093	0.00616
	(!A * Z)	0.00249	0.00277	0.00984
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00277	-0.00243	0.01316
	(A * !Z)	0.00270	0.00316	0.01868
	(!A * Z)	-0.00301	-0.00250	0.01310
	(!A * Z)	0.00279	0.00326	0.01878
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00511	-0.00479	0.01729
	(A * !Z)	0.00466	0.00520	0.02718
	(!A * Z)	-0.00550	-0.00493	0.01719
	(!A * Z)	0.00489	0.00544	0.02739
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00953	-0.00989	0.01070
	(A * !Z)	0.00526	0.00535	0.02588
	(!A * Z)	-0.01014	-0.01022	0.01048
	(!A * Z)	0.00576	0.00577	0.02625

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00289	0.00705	0.00507	0.52499	1.06592

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	1.45974	1.64319

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)	0.17742	0.76705	4.68835
	B->COUT (RR)	0.16281	0.68009	4.50332
	CIN->COUT (FR)	0.07790	0.81434	8.96629

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.21530	0.76784	4.43221
	B->COUT (FF)	0.19564	0.69990	4.26109
	CIN->COUT (RF)	0.04197	0.42427	4.46800

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)	-	0.27322	1.02712	8.96939
	B->SUM (-R)	-	0.26260	0.98931	8.87167
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.09813	0.66267	6.59853
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.15426	0.83130	8.38753

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)	-	0.30971	0.83002	4.94354
	B->SUM (-F)	-	0.25151	0.73634	4.70958
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.13853	0.68703	5.02871
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.14255	0.41823	2.28907

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01473	0.01507	0.02598
	A	0.01283	0.01313	0.02409
	B	0.01565	0.01651	0.04083
	B	0.01092	0.01176	0.03818
	CIN	0.00616	0.00731	0.02249
	CIN	0.00972	0.01088	0.02606

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01282	0.01344	0.02509
	A	0.01473	0.01533	0.02700
	B	0.01118	0.01266	0.03951
	B	0.01589	0.01738	0.04422
	CIN	0.01019	0.01063	0.02535
	CIN	0.00662	0.00707	0.02174

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02878	0.02939	0.05194
	A	-	0.02496	0.02559	0.04820
	B	-	0.02929	0.03161	0.08862
	B	-	0.01961	0.02344	0.07904
	CIN	(A * B) + (!A * !B)	0.00917	0.01136	0.06016
	CIN	(A * B) + (!A * !B)	0.01632	0.01851	0.06887
	CIN	(A * !B) + (!A * B)	0.01020	0.01067	0.02524
	CIN	(A * !B) + (!A * B)	0.00662	0.00711	0.02162

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02535	0.02694	0.05119
	A	-	0.02917	0.03073	0.05428
	B	-	0.02014	0.02485	0.08196
	B	-	0.03003	0.03470	0.09063
	CIN	(A * B) + (!A * !B)	0.01786	0.01919	0.06775
	CIN	(A * B) + (!A * !B)	0.01072	0.01205	0.06049
	CIN	(A * !B) + (!A * B)	0.00616	0.00728	0.02116
	CIN	(A * !B) + (!A * B)	0.00972	0.01084	0.02437

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00287	0.00896	0.00510	0.51621	1.03211

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	1.45974	1.68987

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)	0.23855	0.92806	6.50572
	B->COUT_N (FR)	0.17194	0.86499	8.95975
	CI->COUT_N (FR)	0.07142	0.79268	8.76347

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)	0.18610	0.51049	1.96379
	B->COUT_N (RF)	0.12385	0.47982	4.60203
	CI->COUT_N (RF)	0.04083	0.41620	4.41865

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)	-	0.24526	0.99072	8.68558
	B->SUM (-R)	-	0.21215	0.92310	8.51139
	CI->SUM (RR)	(A * B) + (!A * !B)	0.09414	0.65080	6.44845
	CI->SUM (FR)	(A * !B) + (!A * B)	0.15211	0.83669	8.38797

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)	-	0.28649	0.79626	4.81147
	B->SUM (-F)	-	0.21724	0.67477	4.48691
	CI->SUM (FF)	(A * B) + (!A * !B)	0.13674	0.65947	4.86677
	CI->SUM (RF)	(A * !B) + (!A * B)	0.15337	0.42196	2.25789

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	0.01227	0.01264	0.02433
	A	0.01423	0.01461	0.02637
	B	0.00862	0.01092	0.05011
	B	0.01479	0.01711	0.05641
	CI	0.00606	0.00669	0.02274
	CI	0.00964	0.01027	0.02633

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.01369	0.01358	0.02446
	A	0.01166	0.01150	0.02239
	B	0.01463	0.01588	0.05121
	B	0.00844	0.00969	0.04491
	CI	0.01031	0.01059	0.02601
	CI	0.00671	0.00698	0.02240

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02506	0.02578	0.04880
	A	-	0.02112	0.02186	0.04497
	B	-	0.02917	0.03778	0.12071
	B	-	0.01679	0.02540	0.10838
	CI	(A * B) + (!A * !B)	0.01754	0.01893	0.06742
	CI	(A * B) + (!A * !B)	0.01037	0.01186	0.06037
	CI	(A * !B) + (!A * B)	0.00606	0.00664	0.02179
	CI	(A * !B) + (!A * B)	0.00964	0.01023	0.02538

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02385	0.02566	0.04998
	A	-	0.02774	0.02958	0.05328
	B	-	0.01824	0.02686	0.11006
	B	-	0.03062	0.03927	0.12214
	CI	(A * B) + (!A * !B)	0.01055	0.01295	0.06239
	CI	(A * B) + (!A * !B)	0.01772	0.02014	0.06875
	CI	(A * !B) + (!A * B)	0.01031	0.01057	0.02596
	CI	(A * !B) + (!A * B)	0.00672	0.00698	0.02207

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00481	0.00709	0.00254	0.92995	1.03383
sky130_fd_sc_hs__fah_2	0.00485	0.00806	0.00268	1.83166	2.01814
sky130_fd_sc_hs__fah_4	0.00477	0.00731	0.00256	3.39378	3.99658

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fah_1	0.00000	1.45974	1.73655
sky130_fd_sc_hs__fah_2	0.00000	1.51882	1.79562
sky130_fd_sc_hs__fah_4	0.00000	1.63697	1.91378

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)	0.27058	0.83055	6.68912
	B->COUT (RR)	0.22122	0.83808	6.78473
	CI->COUT (RR)	0.13279	0.77212	7.10440
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.27719	0.70477	6.23001
	B->COUT (RR)	0.20645	0.69558	6.64235
	CI->COUT (RR)	0.12061	0.62023	6.51504
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.28129	0.65511	6.62671
	B->COUT (RR)	0.23193	0.66187	6.77298
	CI->COUT (RR)	0.15130	0.61438	7.15029

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.26876	0.70355	4.28597
	B->COUT (FF)	0.25547	0.75585	4.89471
	CI->COUT (FF)	0.17916	0.73386	4.95197
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.28993	0.71559	4.18003
	B->COUT (FF)	0.27697	0.75646	4.95215
	CI->COUT (FF)	0.17494	0.70910	4.72525
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.32650	0.76947	4.33901
	B->COUT (FF)	0.29553	0.78656	5.18928
	CI->COUT (FF)	0.21040	0.74983	5.09435

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)	-	0.27468	1.04652	9.21573
	B->SUM (-R)	-	0.25152	0.99727	9.09128
	CI->SUM (RR)	(A * B) + (!A * !B)	0.13005	0.71390	6.62082
	CI->SUM (FR)	(A * !B) + (!A * B)	0.25304	1.04131	9.26410
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.27775	0.91737	8.68230
	B->SUM (-R)	-	0.26364	0.88584	8.67063
	CI->SUM (RR)	(A * B) + (!A * !B)	0.12137	0.61461	6.62029
	CI->SUM (FR)	(A * !B) + (!A * B)	0.24844	0.90041	8.72697
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.29471	0.87219	9.22173
	B->SUM (-R)	-	0.27190	0.83421	9.17870
	CI->SUM (RR)	(A * B) + (!A * !B)	0.15853	0.60818	6.87756
	CI->SUM (FR)	(A * !B) + (!A * B)	0.31403	0.94016	9.49192

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)	-	0.26960	0.72097	4.46571
	B->SUM (-F)	-	0.26806	0.77802	7.13837
	CI->SUM (FF)	(A * B) + (!A * !B)	0.17339	0.73275	4.94450
	CI->SUM (RF)	(A * !B) + (!A * B)	0.23260	0.61348	2.90873
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.30121	0.73169	4.40697
	B->SUM (-F)	-	0.28535	0.76349	7.53541
	CI->SUM (FF)	(A * B) + (!A * !B)	0.18291	0.71359	4.94093
	CI->SUM (RF)	(A * !B) + (!A * B)	0.20944	0.54497	2.59201
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.32432	0.78590	4.62681
	B->SUM (-F)	-	0.30777	0.81824	7.21608
	CI->SUM (FF)	(A * B) + (!A * !B)	0.21974	0.75997	5.26556
	CI->SUM (RF)	(A * !B) + (!A * B)	0.30929	0.69693	3.29227

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01882	0.01940	0.04443
	A	0.01552	0.01609	0.04117
	B	0.01710	0.01788	0.04639
	B	0.01250	0.01318	0.04154
	CI	0.01174	0.01206	0.02287
	CI	0.01016	0.01048	0.02128
sky130_fd_sc_hs__fah_2	A	0.02126	0.02215	0.04665
	A	0.01778	0.01851	0.04332
	B	0.01952	0.02088	0.04596
	B	0.01409	0.01529	0.04055
	CI	0.01246	0.01300	0.02383
	CI	0.01057	0.01097	0.02202
sky130_fd_sc_hs__fah_4	A	0.02576	0.02615	0.05187
	A	0.02248	0.02284	0.04877
	B	0.02401	0.02471	0.05230
	B	0.01908	0.01978	0.04736
	CI	0.01982	0.01989	0.03102
	CI	0.01817	0.01829	0.02929

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01559	0.01674	0.04201
	A	0.01873	0.01988	0.04504
	B	0.01296	0.01460	0.04230
	B	0.01771	0.01934	0.04702
	CI	0.00983	0.01046	0.02196
	CI	0.01141	0.01206	0.02336
sky130_fd_sc_hs__fah_2	A	0.01776	0.01937	0.04359
	A	0.02124	0.02285	0.04704
	B	0.01337	0.01526	0.04201
	B	0.01880	0.02067	0.04715
	CI	0.01079	0.01136	0.02279
	CI	0.01267	0.01330	0.02437
sky130_fd_sc_hs__fah_4	A	0.02206	0.02303	0.04865
	A	0.02527	0.02629	0.05138
	B	0.01947	0.02091	0.04947
	B	0.02434	0.02587	0.05370
	CI	0.01770	0.01797	0.02957
	CI	0.01935	0.01961	0.03061

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.03305	0.03359	0.08202
	A	-	0.02632	0.02686	0.07548
	B	-	0.02956	0.03369	0.09640
	B	-	0.01995	0.02405	0.08684
	CI	(A * B) + (!A * !B)	0.01600	0.01594	0.03429
	CI	(A * B) + (!A * !B)	0.01244	0.01237	0.03078
	CI	(A * !B) + (!A * B)	0.00984	0.01048	0.02299
	CI	(A * !B) + (!A * B)	0.01142	0.01208	0.02350
sky130_fd_sc_hs__fah_2	A	-	0.03525	0.03583	0.08376
	A	-	0.02828	0.02887	0.07718
	B	-	0.03208	0.03697	0.09589
	B	-	0.02121	0.02609	0.08526
	CI	(A * B) + (!A * !B)	0.01649	0.01744	0.04067
	CI	(A * B) + (!A * !B)	0.01270	0.01369	0.03655
	CI	(A * !B) + (!A * B)	0.01080	0.01138	0.02356
	CI	(A * !B) + (!A * B)	0.01268	0.01331	0.02473
sky130_fd_sc_hs__fah_4	A	-	0.03757	0.03883	0.08858
	A	-	0.03083	0.03214	0.08266
	B	-	0.03546	0.04189	0.11095
	B	-	0.02541	0.03184	0.10090
	CI	(A * B) + (!A * !B)	0.02366	0.02427	0.04369
	CI	(A * B) + (!A * !B)	0.02005	0.02072	0.04009
	CI	(A * !B) + (!A * B)	0.01772	0.01807	0.03178
	CI	(A * !B) + (!A * B)	0.01936	0.01971	0.03100

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02459	0.02657	0.07487
	A	-	0.03159	0.03357	0.08180
	B	-	0.02161	0.02780	0.31370
	B	-	0.03153	0.03768	0.32288
	CI	(A * B) + (!A * !B)	0.01170	0.01248	0.03437
	CI	(A * B) + (!A * !B)	0.01527	0.01605	0.03756
	CI	(A * !B) + (!A * B)	0.01173	0.01205	0.02254
	CI	(A * !B) + (!A * B)	0.01015	0.01047	0.02091
sky130_fd_sc_hs__fah_2	A	-	0.02772	0.03009	0.07823
	A	-	0.03470	0.03712	0.08436
	B	-	0.02161	0.02745	0.36911
	B	-	0.03251	0.03842	0.37904
	CI	(A * B) + (!A * !B)	0.01366	0.01447	0.03976
	CI	(A * B) + (!A * !B)	0.01743	0.01832	0.04236
	CI	(A * !B) + (!A * B)	0.01244	0.01283	0.02341
	CI	(A * !B) + (!A * B)	0.01056	0.01095	0.02152
sky130_fd_sc_hs__fah_4	A	-	0.03158	0.03270	0.08471
	A	-	0.03843	0.03985	0.08850
	B	-	0.03075	0.04035	0.31430
	B	-	0.04093	0.05053	0.32394
	CI	(A * B) + (!A * !B)	0.02072	0.02003	0.04458
	CI	(A * B) + (!A * !B)	0.02432	0.02381	0.04637
	CI	(A * !B) + (!A * B)	0.01980	0.01995	0.03064
	CI	(A * !B) + (!A * B)	0.01815	0.01831	0.02865

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.01013	0.00992	0.00721	1.08233	1.09161
sky130_fd_sc_hs__fa_2	0.01073	0.01031	0.00766	1.82860	1.97751
sky130_fd_sc_hs__fa_4	0.01069	0.01054	0.00753	3.96110	3.94269

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.24125	0.34341
sky130_fd_sc_hs__fa_2	0.00000	0.29675	0.39868
sky130_fd_sc_hs__fa_4	0.00000	0.41491	0.51683

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)	0.10863	0.67009	6.52617
	B->COUT (RR)	0.12134	0.68991	6.53973
	CIN->COUT (RR)	0.10137	0.67165	6.62415
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.11308	0.58895	6.33190
	B->COUT (RR)	0.11845	0.60856	6.35919
	CIN->COUT (RR)	0.10528	0.60197	6.41536
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.15101	0.57654	6.66438
	B->COUT (RR)	0.13145	0.58179	6.69407
	CIN->COUT (RR)	0.13135	0.58677	6.75297

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.21993	0.73101	5.11632
	B->COUT (FF)	0.23277	0.74412	5.08287
	CIN->COUT (FF)	0.16909	0.70573	5.06920
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.25751	0.75055	4.98788
	B->COUT (FF)	0.26513	0.76233	4.97247
	CIN->COUT (FF)	0.23175	0.74059	4.94316
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.34989	0.85513	5.54733
	B->COUT (FF)	0.31806	0.82516	5.49818
	CIN->COUT (FF)	0.31501	0.83208	5.53351

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.31384	1.01740	8.96120
	B->SUM (-R)	0.32444	1.02668	8.89016
	CIN->SUM (-R)	0.27959	0.98118	8.75442
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.39533	1.00600	9.02874
	B->SUM (-R)	0.40037	1.01440	8.96781
	CIN->SUM (-R)	0.37320	0.98988	8.90169
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.56959	1.09895	9.37194
	B->SUM (-R)	0.52216	1.06554	9.28581
	CIN->SUM (-R)	0.53317	1.07170	9.28881

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.25272	0.72449	5.03717
	B->SUM (-F)	0.25287	0.74977	5.18784
	CIN->SUM (-F)	0.20738	0.70494	5.07097
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.31603	0.78089	5.02684
	B->SUM (-F)	0.32509	0.81469	5.19893
	CIN->SUM (-F)	0.28182	0.77245	5.10072
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.43560	0.90288	5.50543
	B->SUM (-F)	0.39399	0.89491	5.68254
	CIN->SUM (-F)	0.37436	0.86627	5.60154

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01109	0.01112	0.01746
	A	0.00405	0.00409	0.01036
	B	0.00983	0.00992	0.01862
	B	0.00315	0.00323	0.01188
	CIN	0.00930	0.00939	0.01939
	CIN	0.00507	0.00511	0.01517
sky130_fd_sc_hs__fa_2	A	0.01416	0.01405	0.02007
	A	0.00648	0.00620	0.01229
	B	0.01309	0.01297	0.02141
	B	0.00603	0.00580	0.01438
	CIN	0.01253	0.01234	0.02180
	CIN	0.00776	0.00747	0.01714
sky130_fd_sc_hs__fa_4	A	0.02017	0.01988	0.02626
	A	0.01215	0.01192	0.01797
	B	0.02049	0.01991	0.02704
	B	0.01379	0.01346	0.02032
	CIN	0.01875	0.01829	0.02749
	CIN	0.01427	0.01389	0.02299

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00423	0.00431	0.01080
	A	0.01121	0.01132	0.01738
	B	0.00505	0.00522	0.01506
	B	0.01169	0.01190	0.02133
	CIN	0.00575	0.00613	0.01590
	CIN	0.01002	0.01039	0.02002
sky130_fd_sc_hs__fa_2	A	0.00689	0.00662	0.01332
	A	0.01448	0.01421	0.02033
	B	0.00772	0.00765	0.01777
	B	0.01473	0.01468	0.02411
	CIN	0.00837	0.00848	0.01828
	CIN	0.01322	0.01333	0.02276
sky130_fd_sc_hs__fa_4	A	0.01384	0.01280	0.01975
	A	0.02207	0.02118	0.02663
	B	0.01451	0.01366	0.02410
	B	0.02118	0.02034	0.02974
	CIN	0.01547	0.01493	0.02497
	CIN	0.02003	0.01950	0.02852

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01604	0.01614	0.02528
	A	0.01124	0.01135	0.01746
	B	0.01414	0.01386	0.02488
	B	0.01173	0.01192	0.02155
	CIN	0.01127	0.01145	0.02447
	CIN	0.01004	0.01041	0.02033
sky130_fd_sc_hs__fa_2	A	0.01913	0.01959	0.02996
	A	0.01451	0.01425	0.02031
	B	0.01751	0.01778	0.02913
	B	0.01476	0.01469	0.02426
	CIN	0.01422	0.01467	0.02947
	CIN	0.01324	0.01335	0.02303
sky130_fd_sc_hs__fa_4	A	0.02371	0.02352	0.03362
	A	0.02178	0.02090	0.02718
	B	0.02353	0.02364	0.03392
	B	0.02121	0.02036	0.03031
	CIN	0.02116	0.02114	0.03318
	CIN	0.02005	0.01952	0.02901

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01105	0.01109	0.01730
	A	0.01556	0.01563	0.02586
	B	0.00982	0.00994	0.01854
	B	0.01612	0.01624	0.02641
	CIN	0.00315	0.00339	0.01960
	CIN	0.01282	0.01308	0.02885
sky130_fd_sc_hs__fa_2	A	0.01414	0.01392	0.01981
	A	0.01879	0.01896	0.03035
	B	0.01308	0.01290	0.02108
	B	0.01914	0.01895	0.02918
	CIN	0.00658	0.00648	0.02229
	CIN	0.01653	0.01649	0.03238
sky130_fd_sc_hs__fa_4	A	0.01042	0.00954	0.02290
	A	0.02730	0.02666	0.03711
	B	0.01285	0.00898	0.02144
	B	0.02680	0.02421	0.03355
	CIN	0.01427	0.01136	0.02751
	CIN	0.02428	0.02161	0.03678

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00483	0.00452	1.04352	0.96611
sky130_fd_sc_hs__ha_2	0.00488	0.00511	1.81562	1.90212
sky130_fd_sc_hs__ha_4	0.00929	0.00842	3.45293	3.90743

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	0.41991	0.65352
sky130_fd_sc_hs__ha_2	0.00000	0.32999	0.39367
sky130_fd_sc_hs__ha_4	0.00000	0.98131	1.42518

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)	0.08527	0.62104	6.47084
	B->COUT (RR)	0.08074	0.62197	6.56795
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.09131	0.55294	6.32188
	B->COUT (RR)	0.08799	0.55998	6.35903
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.10923	0.49491	6.43556
	B->COUT (RR)	0.09532	0.49229	6.50054

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.10540	0.57119	4.47387
	B->COUT (FF)	0.09310	0.54430	4.40034
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.12239	0.58255	4.41993
	B->COUT (FF)	0.11313	0.56198	4.35120
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.14051	0.55819	4.38698
	B->COUT (FF)	0.11976	0.52574	4.31871

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	0.08731	0.62735	6.30182
	A->SUM (FR)	B	0.16972	0.87904	8.38953
	B->SUM (RR)	!A	0.07544	0.60149	6.29153
	B->SUM (FR)	A	0.16823	0.86407	8.29467
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.09325	0.53554	6.15824
	A->SUM (FR)	B	0.22023	0.84375	8.43411
	B->SUM (RR)	!A	0.08422	0.51656	6.14813
	B->SUM (FR)	A	0.21742	0.82977	8.34471
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.10363	0.48418	6.46330
	A->SUM (FR)	B	0.24413	0.77860	8.59593
	B->SUM (RR)	!A	0.09037	0.45678	6.43468
	B->SUM (FR)	A	0.23121	0.75806	8.49395

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	0.14663	0.59088	4.49064
	A->SUM (RF)	B	0.12981	0.38536	2.06519
	B->SUM (FF)	!A	0.12987	0.57819	4.43877
	B->SUM (RF)	A	0.12545	0.38477	2.10224
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.19481	0.65148	4.77872
	A->SUM (RF)	B	0.16011	0.40744	2.24074
	B->SUM (FF)	!A	0.17821	0.64608	4.72912
	B->SUM (RF)	A	0.15710	0.41341	2.27234
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.19750	0.62232	4.93612
	A->SUM (RF)	B	0.19194	0.41918	2.48471
	B->SUM (FF)	!A	0.17586	0.61033	4.89275
	B->SUM (RF)	A	0.17806	0.41589	2.52729

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00760	0.00781	0.01709
	A	0.00371	0.00386	0.01318
	B	0.00716	0.00750	0.02071
	B	0.00407	0.00436	0.01768
sky130_fd_sc_hs__ha_2	A	0.01041	0.01082	0.02143
	A	0.00649	0.00687	0.01755
	B	0.01014	0.01050	0.02215
	B	0.00673	0.00709	0.01884
sky130_fd_sc_hs__ha_4	A	0.01950	0.02063	0.04059
	A	0.01234	0.01345	0.03335
	B	0.01834	0.01962	0.04492
	B	0.01285	0.01411	0.03966

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00389	0.00469	0.01625
	A	0.00777	0.00856	0.02000
	B	0.00469	0.00537	0.01768
	B	0.00772	0.00838	0.02051
sky130_fd_sc_hs__ha_2	A	0.00723	0.00801	0.01923
	A	0.01113	0.01191	0.02308
	B	0.00766	0.00816	0.01952
	B	0.01102	0.01144	0.02269
sky130_fd_sc_hs__ha_4	A	0.01309	0.01511	0.03922
	A	0.02024	0.02206	0.04601
	B	0.01456	0.01620	0.04150
	B	0.01987	0.02149	0.04651

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	0.00390	0.00472	0.01638
	A	B	0.00778	0.00859	0.02023
	A	!B	0.01119	0.01149	0.02386
	A	!B	0.00373	0.00401	0.01659
	B	A	0.00471	0.00535	0.01766
	B	A	0.00774	0.00838	0.02067
	B	!A	0.00840	0.00876	0.02717
	B	!A	0.00262	0.00299	0.02161
sky130_fd_sc_hs__ha_2	A	B	0.00723	0.00814	0.01957
	A	B	0.01114	0.01195	0.02335
	A	!B	0.01426	0.01473	0.02646
	A	!B	0.00685	0.00733	0.01970
	B	A	0.00767	0.00820	0.01955
	B	A	0.01103	0.01146	0.02290
	B	!A	0.01194	0.01246	0.02964
	B	!A	0.00564	0.00617	0.02399
sky130_fd_sc_hs__ha_4	A	B	0.01312	0.01517	0.03911
	A	B	0.02029	0.02215	0.04626
	A	!B	0.02873	0.02960	0.05274
	A	!B	0.01338	0.01431	0.03792
	B	A	0.01460	0.01638	0.04242
	B	A	0.01991	0.02156	0.04700
	B	!A	0.02273	0.02378	0.05753
	B	!A	0.01109	0.01219	0.04646

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	0.00760	0.00777	0.01693
	A	B	0.00371	0.00386	0.01305
	A	!B	0.00222	0.00247	0.01491
	A	!B	0.00952	0.00977	0.02208
	B	A	0.00716	0.00748	0.02043
	B	A	0.00406	0.00436	0.01742
	B	!A	0.00326	0.00440	0.02369
	B	!A	0.00909	0.01023	0.02928
sky130_fd_sc_hs__ha_2	A	B	0.01041	0.01082	0.02094
	A	B	0.00649	0.00688	0.01700
	A	!B	0.00512	0.00530	0.01810
	A	!B	0.01234	0.01253	0.02441
	B	A	0.01014	0.01052	0.02187
	B	A	0.00672	0.00710	0.01850
	B	!A	0.00567	0.00675	0.02655
	B	!A	0.01207	0.01319	0.03175
sky130_fd_sc_hs__ha_4	A	B	0.01950	0.02071	0.04012
	A	B	0.01235	0.01349	0.03270
	A	!B	0.01004	0.01058	0.03386
	A	!B	0.02505	0.02562	0.04854
	B	A	0.01833	0.01965	0.04435
	B	A	0.01284	0.01414	0.03893
	B	!A	0.01232	0.01448	0.05025
	B	!A	0.02429	0.02634	0.06219

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00822	16.11862
sky130_fd_sc_hs__bufinv_8	0.00282	6.54431
sky130_fd_sc_hs__inv_1	0.00285	1.04474
sky130_fd_sc_hs__inv_16	0.04332	15.73553
sky130_fd_sc_hs__inv_2	0.00525	2.01478
sky130_fd_sc_hs__inv_4	0.01060	3.80503
sky130_fd_sc_hs__inv_8	0.02098	7.49671

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.73846	1.04193
sky130_fd_sc_hs__bufinv_8	0.00000	0.35446	0.49452
sky130_fd_sc_hs__inv_1	0.00000	0.02954	0.05288
sky130_fd_sc_hs__inv_16	0.00000	0.47261	0.84611
sky130_fd_sc_hs__inv_2	0.00000	0.05908	0.10576
sky130_fd_sc_hs__inv_4	0.00000	0.11815	0.21153
sky130_fd_sc_hs__inv_8	0.00000	0.23631	0.42306

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)	0.13298	0.53496	8.41487
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.17175	0.66739	8.43429
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.03040	0.80880	11.05740
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.02078	0.49255	11.00750
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.02360	0.69797	10.90790
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.02208	0.62204	10.91270
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.02160	0.55301	10.88650

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.11741	0.26195	2.16295
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.14012	0.33411	1.98018
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.01650	0.41955	5.75330
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.01281	0.20517	5.72019
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01388	0.34859	5.62984
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.01321	0.29762	5.68284
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.01322	0.24958	5.66900

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.06040	0.06734	0.14236
	A	0.07200	0.07925	0.15417
sky130_fd_sc_hs__bufinv_8	A	0.03168	0.03468	0.06046
	A	0.03565	0.03868	0.07540
sky130_fd_sc_hs__inv_1	A	-0.00078	-0.00023	0.00358
	A	0.00324	0.00381	0.00767
sky130_fd_sc_hs__inv_16	A	-0.01600	-0.00273	0.05641
	A	0.04476	0.05816	0.11802
sky130_fd_sc_hs__inv_2	A	-0.00192	-0.00076	0.00706
	A	0.00545	0.00668	0.01460
sky130_fd_sc_hs__inv_4	A	-0.00377	-0.00030	0.01392
	A	0.01109	0.01471	0.02909
sky130_fd_sc_hs__inv_8	A	-0.00750	-0.00130	0.03228
	A	0.02194	0.02832	0.06237

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	**A**	0.07346	0.07918	0.15436
	A	0.06191	0.06757	0.14138
sky130_fd_sc_hs__bufinv_8	**A**	0.03547	0.03748	0.05981
	A	0.03153	0.03352	0.05577
sky130_fd_sc_hs__inv_1	**A**	0.00356	0.00370	0.00687
	A	-0.00045	-0.00032	0.00146
sky130_fd_sc_hs__inv_16	**A**	0.04658	0.05159	0.09191
	A	-0.01423	-0.00928	0.02000
sky130_fd_sc_hs__inv_2	**A**	0.00573	0.00618	0.01008
	A	-0.00164	-0.00120	0.00240
sky130_fd_sc_hs__inv_4	**A**	0.01161	0.01268	0.02215
	A	-0.00326	-0.00225	0.00495
sky130_fd_sc_hs__inv_8	**A**	0.02264	0.02506	0.05376
	A	-0.00680	-0.00460	0.01217

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00529	0.00496	0.00517	1.06999
sky130_fd_sc_hs__maj3_2	0.00562	0.00535	0.00549	2.08827
sky130_fd_sc_hs__maj3_4	0.01030	0.00973	0.01014	3.99813

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	0.10768	0.27770
sky130_fd_sc_hs__maj3_2	0.00000	0.13573	0.28390
sky130_fd_sc_hs__maj3_4	0.00000	0.27442	0.56779

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)	0.10024	0.65016	6.39167
	B->X (RR)	0.09357	0.63877	6.39908
	C->X (RR)	0.10130	0.65979	6.41237
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.10686	0.56356	6.34589
	B->X (RR)	0.09328	0.55551	6.35620
	C->X (RR)	0.09962	0.57089	6.36293
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.10180	0.49052	6.49300
	B->X (RR)	0.09596	0.48922	6.51280
	C->X (RR)	0.09729	0.49569	6.48566

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.16978	0.66888	4.95795
	B->X (FF)	0.15970	0.65396	4.86692
	C->X (FF)	0.15326	0.65317	4.92147
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.23159	0.70498	4.98962
	B->X (FF)	0.18038	0.67198	4.90394
	C->X (FF)	0.22465	0.70672	4.96714
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.19171	0.63957	5.02736
	B->X (FF)	0.16081	0.61321	4.96900
	C->X (FF)	0.20362	0.65029	4.99012

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01485	0.01480	0.02482
	A	0.00419	0.00423	0.01433
	B	0.01240	0.01191	0.03027
	B	0.00409	0.00360	0.02208
	C	0.01182	0.01170	0.02924
	C	0.00245	0.00233	0.02004
sky130_fd_sc_hs__maj3_2	A	0.01681	0.01692	0.02861
	A	0.00526	0.00537	0.01747
	B	0.01494	0.01494	0.03160
	B	0.00577	0.00580	0.02282
	C	0.01529	0.01535	0.03239
	C	0.00502	0.00507	0.02253
sky130_fd_sc_hs__maj3_4	A	0.03097	0.03133	0.05350
	A	0.01059	0.01098	0.03359
	B	0.02650	0.02675	0.06461
	B	0.01043	0.01071	0.04883
	C	0.02718	0.02744	0.05833
	C	0.00895	0.00927	0.04056

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00207	0.00204	0.01405
	A	0.01264	0.01262	0.02429
	B	0.00352	0.00370	0.02282
	B	0.01174	0.01194	0.03061
	C	0.00391	0.00417	0.02298
	C	0.01311	0.01339	0.03183
sky130_fd_sc_hs__maj3_2	A	0.00519	0.00520	0.01791
	A	0.01725	0.01723	0.02867
	B	0.00621	0.00624	0.02489
	B	0.01519	0.01527	0.03384
	C	0.00672	0.00677	0.02659
	C	0.01677	0.01695	0.03545
sky130_fd_sc_hs__maj3_4	A	0.01112	0.01106	0.03372
	A	0.03113	0.03114	0.05370
	B	0.01177	0.01224	0.05039
	B	0.02756	0.02812	0.06556
	C	0.01279	0.01351	0.04943
	C	0.03062	0.03145	0.06680

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00375	0.00335	0.00328
	(B * C * X)	-0.00262	-0.00311	-0.00312
	(!B * !C * !X)	0.00293	0.00297	0.00294
	(!B * !C * !X)	-0.00336	-0.00339	-0.00337
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00360	0.00322	0.00316
	(B * C * X)	-0.00310	-0.00358	-0.00359
	(!B * !C * !X)	0.00269	0.00272	0.00270
	(!B * !C * !X)	-0.00394	-0.00396	-0.00394
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00672	0.00596	0.00583
	(B * C * X)	-0.00535	-0.00632	-0.00634
	(!B * !C * !X)	0.00513	0.00516	0.00515
	(!B * !C * !X)	-0.00684	-0.00686	-0.00685

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00325	-0.00326	-0.00325
	(B * C * X)	0.00309	0.00312	0.00312
	(!B * !C * !X)	-0.00278	-0.00297	-0.00294
	(!B * !C * !X)	0.00348	0.00342	0.00338
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00314	-0.00315	-0.00313
	(B * C * X)	0.00357	0.00360	0.00359
	(!B * !C * !X)	-0.00254	-0.00272	-0.00270
	(!B * !C * !X)	0.00406	0.00399	0.00395
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00578	-0.00581	-0.00578
	(B * C * X)	0.00628	0.00635	0.00634
	(!B * !C * !X)	-0.00489	-0.00516	-0.00515
	(!B * !C * !X)	0.00701	0.00693	0.00688

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00273	0.00272	0.00272
	(A * C * X)	-0.00161	-0.00159	-0.00160
	(!A * !C * !X)	0.00071	0.00072	0.00069
	(!A * !C * !X)	-0.00377	-0.00381	-0.00384
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00320	0.00326	0.00320
	(A * C * X)	-0.00154	-0.00156	-0.00153
	(!A * !C * !X)	0.00088	0.00088	0.00084
	(!A * !C * !X)	-0.00386	-0.00388	-0.00392
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00535	0.00546	0.00537
	(A * C * X)	-0.00320	-0.00326	-0.00320
	(!A * !C * !X)	0.00165	0.00165	0.00158
	(!A * !C * !X)	-0.00733	-0.00734	-0.00750

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00262	-0.00262	-0.00271
	(A * C * X)	0.00168	0.00168	0.00162
	(!A * !C * !X)	-0.00067	-0.00068	-0.00067
	(!A * !C * !X)	0.00383	0.00386	0.00384
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00309	-0.00312	-0.00319
	(A * C * X)	0.00162	0.00164	0.00156
	(!A * !C * !X)	-0.00083	-0.00083	-0.00082
	(!A * !C * !X)	0.00393	0.00393	0.00392
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00513	-0.00513	-0.00534
	(A * C * X)	0.00343	0.00341	0.00326
	(!A * !C * !X)	-0.00153	-0.00154	-0.00152
	(!A * !C * !X)	0.00749	0.00754	0.00752

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00306	0.00287	0.00281
	(A * B * X)	-0.00214	-0.00237	-0.00238
	(!A * !B * !X)	0.00148	0.00151	0.00148
	(!A * !B * !X)	-0.00374	-0.00377	-0.00378
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00348	0.00329	0.00324
	(A * B * X)	-0.00210	-0.00234	-0.00234
	(!A * !B * !X)	0.00181	0.00183	0.00180
	(!A * !B * !X)	-0.00370	-0.00372	-0.00374
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00606	0.00569	0.00559
	(A * B * X)	-0.00424	-0.00475	-0.00473
	(!A * !B * !X)	0.00333	0.00337	0.00331
	(!A * !B * !X)	-0.00710	-0.00716	-0.00719

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00275	-0.00276	-0.00280
	(A * B * X)	0.00242	0.00243	0.00240
	(!A * !B * !X)	-0.00139	-0.00148	-0.00148
	(!A * !B * !X)	0.00383	0.00382	0.00379
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00317	-0.00319	-0.00322
	(A * B * X)	0.00237	0.00240	0.00236
	(!A * !B * !X)	-0.00171	-0.00180	-0.00180
	(!A * !B * !X)	0.00378	0.00377	0.00375
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00545	-0.00549	-0.00556
	(A * B * X)	0.00480	0.00485	0.00476
	(!A * !B * !X)	-0.00315	-0.00331	-0.00331
	(!A * !B * !X)	0.00726	0.00726	0.00721

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00285	0.00269	0.00500	0.49083
sky130_fd_sc_hs__mux2i_2	0.00535	0.00565	0.00811	0.83028
sky130_fd_sc_hs__mux2i_4	0.01057	0.01055	0.01412	1.44500

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2i_1	0.00000	0.18538	0.36870
sky130_fd_sc_hs__mux2i_2	0.00000	0.14577	0.28606
sky130_fd_sc_hs__mux2i_4	0.00000	0.44452	0.88879

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)	-	0.09675	1.00079	10.85600
	A1->Y (FR)	-	0.08663	0.99151	10.85700
	S->Y (RR)	(A0 * !A1)	0.13488	0.80132	6.46933
	S->Y (FR)	(!A0 * A1)	0.11114	1.00615	10.61510
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.10808	0.89663	10.86940
	A1->Y (FR)	-	0.09889	0.86113	10.45830
	S->Y (RR)	(A0 * !A1)	0.14522	0.67720	5.99434
	S->Y (FR)	(!A0 * A1)	0.11942	0.88579	10.41980
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.09973	0.77140	10.43850
	A1->Y (FR)	-	0.09943	0.78556	10.71000
	S->Y (RR)	(A0 * !A1)	0.16526	0.66489	6.69366
	S->Y (FR)	(!A0 * A1)	0.11304	0.75070	9.89151

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)	-	0.03070	0.42163	4.50462
	A1->Y (RF)	-	0.03242	0.44533	4.77860
	S->Y (FF)	(A0 * !A1)	0.09239	0.47962	3.46448
	S->Y (RF)	(!A0 * A1)	0.03778	0.39634	4.15042
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.03865	0.41212	4.88207
	A1->Y (RF)	-	0.03700	0.39597	4.74298
	S->Y (FF)	(A0 * !A1)	0.11321	0.51211	3.79960
	S->Y (RF)	(!A0 * A1)	0.04019	0.32886	3.80520
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.03555	0.34708	4.62914
	A1->Y (RF)	-	0.04060	0.38044	5.06949
	S->Y (FF)	(A0 * !A1)	0.11470	0.46637	3.45019
	S->Y (RF)	(!A0 * A1)	0.04325	0.27904	3.62972

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	-	0.00118	0.00142	0.00617
	A0	-	0.00650	0.00676	0.01153
	A1	-	0.00083	0.00106	0.00569
	A1	-	0.00573	0.00598	0.01060
	S	(A0 * !A1)	0.00899	0.00951	0.03370
	S	(A0 * !A1)	0.00468	0.00528	0.02943
	S	(!A0 * A1)	0.00185	0.00294	0.02956
	S	(!A0 * A1)	0.01155	0.01268	0.03934
sky130_fd_sc_hs__mux2i_2	A0	-	0.00253	0.00289	0.01144
	A0	-	0.01290	0.01303	0.02182
	A1	-	0.00231	0.00281	0.01159
	A1	-	0.01263	0.01310	0.02197
	S	(A0 * !A1)	0.01517	0.01540	0.03674
	S	(A0 * !A1)	0.00979	0.01003	0.03137
	S	(!A0 * A1)	0.00444	0.00511	0.03432
	S	(!A0 * A1)	0.02105	0.02168	0.05091
sky130_fd_sc_hs__mux2i_4	A0	-	0.00299	0.00355	0.02146
	A0	-	0.02356	0.02411	0.04201
	A1	-	0.00308	0.00380	0.01979
	A1	-	0.02266	0.02338	0.03950
	S	(A0 * !A1)	0.02603	0.02641	0.06649
	S	(A0 * !A1)	0.01778	0.01818	0.05821
	S	(!A0 * A1)	0.00719	0.00849	0.05976
	S	(!A0 * A1)	0.03731	0.03856	0.08989

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00675	0.00688	0.00923
	A0	-	0.00155	0.00159	0.00385
	A1	-	0.00654	0.00665	0.00898
	A1	-	0.00143	0.00149	0.00367
	S	(A0 * !A1)	0.00555	0.00689	0.03087
	S	(A0 * !A1)	0.00987	0.01117	0.03512
	S	(!A0 * A1)	0.01249	0.01296	0.03892
	S	(!A0 * A1)	0.00276	0.00319	0.02889
sky130_fd_sc_hs__mux2i_2	A0	-	0.01382	0.01390	0.01858
	A0	-	0.00382	0.00386	0.00812
	A1	-	0.01338	0.01367	0.01819
	A1	-	0.00280	0.00309	0.00727
	S	(A0 * !A1)	0.01193	0.01278	0.03411
	S	(A0 * !A1)	0.01713	0.01803	0.03946
	S	(!A0 * A1)	0.02229	0.02244	0.05057
	S	(!A0 * A1)	0.00559	0.00571	0.03378
sky130_fd_sc_hs__mux2i_4	A0	-	0.02562	0.02579	0.03561
	A0	-	0.00567	0.00576	0.01468
	A1	-	0.02553	0.02561	0.03486
	A1	-	0.00528	0.00533	0.01370
	S	(A0 * !A1)	0.02269	0.02468	0.06567
	S	(A0 * !A1)	0.03062	0.03266	0.07376
	S	(!A0 * A1)	0.04126	0.04121	0.08940
	S	(!A0 * A1)	0.01100	0.01087	0.05873

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00175	0.00176	0.00176
	(A1 * S * !Y)	-0.00092	-0.00093	-0.00092
	(!A1 * S * Y)	0.00076	0.00075	0.00071
	(!A1 * S * Y)	-0.00203	-0.00211	-0.00212
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00318	0.00321	0.00319
	(A1 * S * !Y)	-0.00170	-0.00171	-0.00170
	(!A1 * S * Y)	0.00113	0.00113	0.00106
	(!A1 * S * Y)	-0.00402	-0.00412	-0.00416
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00618	0.00622	0.00621
	(A1 * S * !Y)	-0.00348	-0.00351	-0.00349
	(!A1 * S * Y)	0.00215	0.00214	0.00204
	(!A1 * S * Y)	-0.00809	-0.00824	-0.00836

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00163	-0.00167	-0.00175
	(A1 * S * !Y)	0.00102	0.00102	0.00095
	(!A1 * S * Y)	-0.00071	-0.00071	-0.00071
	(!A1 * S * Y)	0.00211	0.00212	0.00212
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00297	-0.00309	-0.00319
	(A1 * S * !Y)	0.00182	0.00183	0.00174
	(!A1 * S * Y)	-0.00103	-0.00104	-0.00103
	(!A1 * S * Y)	0.00415	0.00418	0.00416
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00581	-0.00593	-0.00621
	(A1 * S * !Y)	0.00376	0.00375	0.00357
	(!A1 * S * Y)	-0.00199	-0.00201	-0.00197
	(!A1 * S * Y)	0.00837	0.00844	0.00836

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00158	0.00160	0.00159
	(A0 * !S * !Y)	-0.00092	-0.00094	-0.00093
	(!A0 * !S * Y)	0.00061	0.00060	0.00057
	(!A0 * !S * Y)	-0.00204	-0.00208	-0.00212
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00329	0.00333	0.00330
	(A0 * !S * !Y)	-0.00189	-0.00191	-0.00189
	(!A0 * !S * Y)	0.00121	0.00121	0.00116
	(!A0 * !S * Y)	-0.00415	-0.00421	-0.00428
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00606	0.00611	0.00609
	(A0 * !S * !Y)	-0.00350	-0.00354	-0.00352
	(!A0 * !S * Y)	0.00193	0.00193	0.00182
	(!A0 * !S * Y)	-0.00817	-0.00826	-0.00843

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00139	-0.00150	-0.00159
	(A0 * !S * !Y)	0.00106	0.00104	0.00096
	(!A0 * !S * Y)	-0.00055	-0.00055	-0.00055
	(!A0 * !S * Y)	0.00211	0.00212	0.00212
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00300	-0.00318	-0.00330
	(A0 * !S * !Y)	0.00206	0.00207	0.00194
	(!A0 * !S * Y)	-0.00113	-0.00113	-0.00112
	(!A0 * !S * Y)	0.00427	0.00428	0.00428
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00554	-0.00591	-0.00609
	(A0 * !S * !Y)	0.00381	0.00384	0.00360
	(!A0 * !S * Y)	-0.00178	-0.00178	-0.00177
	(!A0 * !S * Y)	0.00843	0.00847	0.00843

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00673	0.00723	0.03098
	(A0 * A1 * !Y)	-0.00009	0.00034	0.02412
	(!A0 * !A1 * Y)	0.00679	0.00727	0.03103
	(!A0 * !A1 * Y)	-0.00009	0.00037	0.02414
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01067	0.01057	0.03466
	(A0 * A1 * !Y)	0.00004	-0.00015	0.02394
	(!A0 * !A1 * Y)	0.01024	0.01056	0.03461
	(!A0 * !A1 * Y)	-0.00045	-0.00012	0.02397
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.01879	0.01837	0.05844
	(A0 * A1 * !Y)	0.00034	-0.00028	0.03990
	(!A0 * !A1 * Y)	0.01802	0.01838	0.05839
	(!A0 * !A1 * Y)	-0.00038	-0.00014	0.03993

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00037	0.00088	0.02486
	(A0 * A1 * !Y)	0.00651	0.00777	0.03172
	(!A0 * !A1 * Y)	-0.00048	0.00080	0.02485
	(!A0 * !A1 * Y)	0.00638	0.00771	0.03171
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00048	0.00049	0.02446
	(A0 * A1 * !Y)	0.01022	0.01118	0.03510
	(!A0 * !A1 * Y)	-0.00049	0.00065	0.02441
	(!A0 * !A1 * Y)	0.01006	0.01135	0.03510
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00017	0.00158	0.04282
	(A0 * A1 * !Y)	0.01841	0.02012	0.06135
	(!A0 * !A1 * Y)	-0.00040	0.00135	0.04273
	(!A0 * !A1 * Y)	0.01792	0.01992	0.06129

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00275	0.00321	0.00461	1.07825
sky130_fd_sc_hs__mux2_2	0.00254	0.00287	0.00542	1.82965
sky130_fd_sc_hs__mux2_4	0.00488	0.00490	0.00821	3.44821

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	0.26338	0.48626
sky130_fd_sc_hs__mux2_2	0.00000	0.29292	0.49245
sky130_fd_sc_hs__mux2_4	0.00000	0.36391	0.53357

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)	-	0.07749	0.60372	6.31315
	A1->X (RR)	-	0.07688	0.60421	6.31567
	S->X (RR)	(!A0 * A1)	0.07996	0.60162	6.24733
	S->X (FR)	(A0 * !A1)	0.15064	0.80776	8.22272
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.09261	0.56567	6.28399
	A1->X (RR)	-	0.08873	0.55430	6.23164
	S->X (RR)	(!A0 * A1)	0.09092	0.54613	6.19338
	S->X (FR)	(A0 * !A1)	0.16123	0.73387	8.04531
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.12201	0.54322	6.43683
	A1->X (RR)	-	0.12572	0.54943	6.48088
	S->X (RR)	(!A0 * A1)	0.12879	0.51575	6.32099
	S->X (FR)	(A0 * !A1)	0.21019	0.75582	8.35470

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)	-	0.13126	0.62981	4.85615
	A1->X (FF)	-	0.12859	0.62716	4.92679
	S->X (FF)	(!A0 * A1)	0.17365	0.65211	4.97507
	S->X (RF)	(A0 * !A1)	0.19815	0.47354	2.50676
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.16621	0.64818	4.66445
	A1->X (FF)	-	0.17007	0.65824	4.70539
	S->X (FF)	(!A0 * A1)	0.20911	0.65826	4.64761
	S->X (RF)	(A0 * !A1)	0.24552	0.48938	2.12255
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.19497	0.64996	4.61753
	A1->X (FF)	-	0.19618	0.65379	4.61077
	S->X (FF)	(!A0 * A1)	0.23340	0.64657	4.53887
	S->X (RF)	(A0 * !A1)	0.26522	0.49535	2.00017

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	-	0.00952	0.00969	0.02803
	A0	-	0.00444	0.00462	0.02315
	A1	-	0.00992	0.01029	0.02649
	A1	-	0.00443	0.00479	0.02124
	S	(A0 * !A1)	0.00882	0.00969	0.03373
	S	(A0 * !A1)	0.01222	0.01313	0.03721
	S	(!A0 * A1)	0.01556	0.01633	0.05120
	S	(!A0 * A1)	0.00633	0.00708	0.04222
sky130_fd_sc_hs__mux2_2	A0	-	0.01117	0.01185	0.02993
	A0	-	0.00734	0.00814	0.02604
	A1	-	0.01287	0.01347	0.03119
	A1	-	0.00763	0.00824	0.02655
	S	(A0 * !A1)	0.01129	0.01316	0.03596
	S	(A0 * !A1)	0.01543	0.01766	0.04043
	S	(!A0 * A1)	0.01871	0.01935	0.04625
	S	(!A0 * A1)	0.00870	0.00935	0.03686
sky130_fd_sc_hs__mux2_4	A0	-	0.02151	0.02250	0.05108
	A0	-	0.01204	0.01304	0.04227
	A1	-	0.02348	0.02430	0.05658
	A1	-	0.01177	0.01266	0.04650
	S	(A0 * !A1)	0.02124	0.02329	0.04709
	S	(A0 * !A1)	0.02717	0.02930	0.05315
	S	(!A0 * A1)	0.03300	0.03347	0.06943
	S	(!A0 * A1)	0.01702	0.01750	0.05419

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00399	0.00498	0.02265
	A0	-	0.00926	0.01022	0.02744
	A1	-	0.00463	0.00544	0.02481
	A1	-	0.01010	0.01088	0.02968
	S	(A0 * !A1)	0.01320	0.01360	0.03707
	S	(A0 * !A1)	0.00974	0.01005	0.03344
	S	(!A0 * A1)	0.00492	0.00629	0.04211
	S	(!A0 * A1)	0.01410	0.01546	0.05071
sky130_fd_sc_hs__mux2_2	A0	-	0.00579	0.00678	0.02483
	A0	-	0.01156	0.01245	0.03026
	A1	-	0.00725	0.00793	0.02585
	A1	-	0.01243	0.01325	0.03100
	S	(A0 * !A1)	0.01544	0.01606	0.03735
	S	(A0 * !A1)	0.01122	0.01181	0.03299
	S	(!A0 * A1)	0.00702	0.00801	0.04101
	S	(!A0 * A1)	0.01698	0.01795	0.05077
sky130_fd_sc_hs__mux2_4	A0	-	0.01504	0.01572	0.04956
	A0	-	0.02439	0.02511	0.05686
	A1	-	0.01548	0.01670	0.05016
	A1	-	0.02350	0.02471	0.05712
	S	(A0 * !A1)	0.02844	0.02936	0.05184
	S	(A0 * !A1)	0.02237	0.02301	0.04541
	S	(!A0 * A1)	0.01653	0.01627	0.06060
	S	(!A0 * A1)	0.03241	0.03243	0.07464

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00164	0.00166	0.00165
	(A1 * S * X)	-0.00077	-0.00078	-0.00077
	(!A1 * S * !X)	0.00064	0.00063	0.00059
	(!A1 * S * !X)	-0.00185	-0.00188	-0.00193
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00156	0.00158	0.00157
	(A1 * S * X)	-0.00083	-0.00084	-0.00083
	(!A1 * S * !X)	0.00071	0.00070	0.00066
	(!A1 * S * !X)	-0.00174	-0.00178	-0.00184
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00281	0.00286	0.00282
	(A1 * S * X)	-0.00164	-0.00167	-0.00164
	(!A1 * S * !X)	0.00108	0.00107	0.00100
	(!A1 * S * !X)	-0.00366	-0.00374	-0.00378

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00153	-0.00157	-0.00164
	(A1 * S * X)	0.00085	0.00085	0.00080
	(!A1 * S * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * S * !X)	0.00192	0.00193	0.00193
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00142	-0.00146	-0.00155
	(A1 * S * X)	0.00093	0.00093	0.00086
	(!A1 * S * !X)	-0.00063	-0.00064	-0.00063
	(!A1 * S * !X)	0.00183	0.00185	0.00184
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00263	-0.00269	-0.00281
	(A1 * S * X)	0.00178	0.00178	0.00168
	(!A1 * S * !X)	-0.00099	-0.00100	-0.00098
	(!A1 * S * !X)	0.00379	0.00380	0.00378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00182	0.00184	0.00182
	(A0 * !S * X)	-0.00093	-0.00095	-0.00093
	(!A0 * !S * !X)	0.00056	0.00056	0.00054
	(!A0 * !S * !X)	-0.00221	-0.00223	-0.00225
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00169	0.00171	0.00169
	(A0 * !S * X)	-0.00081	-0.00082	-0.00080
	(!A0 * !S * !X)	0.00050	0.00050	0.00049
	(!A0 * !S * !X)	-0.00200	-0.00202	-0.00204
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00282	0.00282	0.00282
	(A0 * !S * X)	-0.00165	-0.00165	-0.00164
	(!A0 * !S * !X)	0.00087	0.00087	0.00082
	(!A0 * !S * !X)	-0.00383	-0.00387	-0.00393

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00172	-0.00178	-0.00182
	(A0 * !S * X)	0.00099	0.00099	0.00094
	(!A0 * !S * !X)	-0.00054	-0.00053	-0.00053
	(!A0 * !S * !X)	0.00225	0.00225	0.00225
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00156	-0.00162	-0.00169
	(A0 * !S * X)	0.00089	0.00089	0.00082
	(!A0 * !S * !X)	-0.00047	-0.00048	-0.00047
	(!A0 * !S * !X)	0.00204	0.00205	0.00204
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00257	-0.00273	-0.00282
	(A0 * !S * X)	0.00178	0.00178	0.00167
	(!A0 * !S * !X)	-0.00080	-0.00081	-0.00080
	(!A0 * !S * !X)	0.00392	0.00394	0.00393

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00686	0.00718	0.03062
	(A0 * A1 * X)	0.00067	0.00094	0.02439
	(!A0 * !A1 * !X)	0.00689	0.00739	0.03079
	(!A0 * !A1 * !X)	0.00069	0.00119	0.02461
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00695	0.00730	0.03079
	(A0 * A1 * X)	-0.00003	0.00026	0.02379
	(!A0 * !A1 * !X)	0.00657	0.00706	0.03052
	(!A0 * !A1 * !X)	-0.00042	0.00007	0.02356
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01086	0.01094	0.03471
	(A0 * A1 * X)	0.00022	0.00020	0.02399
	(!A0 * !A1 * !X)	0.01079	0.01102	0.03473
	(!A0 * !A1 * !X)	0.00009	0.00027	0.02404

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00001	0.00132	0.02487
	(A0 * A1 * X)	0.00623	0.00753	0.03109
	(!A0 * !A1 * !X)	-0.00027	0.00086	0.02463
	(!A0 * !A1 * !X)	0.00589	0.00708	0.03084
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00060	0.00074	0.02432
	(A0 * A1 * X)	0.00641	0.00774	0.03131
	(!A0 * !A1 * !X)	-0.00041	0.00071	0.02448
	(!A0 * !A1 * !X)	0.00654	0.00771	0.03148
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00030	0.00044	0.02415
	(A0 * A1 * X)	0.01039	0.01119	0.03486
	(!A0 * !A1 * !X)	-0.00064	0.00016	0.02394
	(!A0 * !A1 * !X)	0.01003	0.01087	0.03463

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00239	0.00250	0.00249	0.00275	0.00840	0.00537	1.02451
sky130_fd_sc_hs__mux4_2	0.00270	0.00256	0.00266	0.00260	0.00952	0.00555	2.06560
sky130_fd_sc_hs__mux4_4	0.00476	0.00457	0.00475	0.00476	0.01329	0.00828	3.92180

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.37699	0.66761
sky130_fd_sc_hs__mux4_2	0.00000	0.40263	0.71436
sky130_fd_sc_hs__mux4_4	0.00000	0.58593	1.00810

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)	0.13806	0.70694	6.49762
	A1->X (RR)	0.13947	0.70858	6.49374
	A2->X (RR)	0.13959	0.71420	6.52255
	A3->X (RR)	0.13676	0.70815	6.50190
	S0->X (-R)	0.22135	0.93141	8.44578
	S1->X (-R)	0.12875	0.79371	8.19851
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.14717	0.62219	6.51425
	A1->X (RR)	0.14091	0.61943	6.51288
	A2->X (RR)	0.13640	0.60963	6.48473
	A3->X (RR)	0.12972	0.60378	6.47487
	S0->X (-R)	0.20736	0.81680	8.42231
	S1->X (-R)	0.13734	0.70959	8.17826
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.16796	0.56985	6.63118
	A1->X (RR)	0.17148	0.57375	6.63760
	A2->X (RR)	0.17217	0.57661	6.63368
	A3->X (RR)	0.16379	0.57154	6.62606
	S0->X (-R)	0.28898	0.86977	8.76607
	S1->X (-R)	0.16089	0.70794	8.44996

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.23685	0.76380	4.94753
	A1->X (FF)	0.24866	0.78036	4.99595
	A2->X (FF)	0.25745	0.79692	5.02984
	A3->X (FF)	0.25744	0.79442	5.03070
	S0->X (-F)	0.23607	0.78119	4.97607
	S1->X (-F)	0.11556	0.59701	4.64344
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.29376	0.83617	5.29076
	A1->X (FF)	0.29130	0.83135	5.27188
	A2->X (FF)	0.28989	0.82625	5.26224
	A3->X (FF)	0.28131	0.81528	5.23147
	S0->X (-F)	0.26939	0.82067	5.23616
	S1->X (-F)	0.14154	0.63404	4.92296
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.29297	0.78734	5.26424
	A1->X (FF)	0.28795	0.78258	5.24678
	A2->X (FF)	0.31848	0.81505	5.30027
	A3->X (FF)	0.30524	0.79990	5.27988
	S0->X (-F)	0.28850	0.81578	5.37424
	S1->X (-F)	0.15378	0.63218	5.03423

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01524	0.01550	0.02692
	A0	0.00927	0.00952	0.02108
	A1	0.01388	0.01411	0.02526
	A1	0.00794	0.00816	0.01945
	A2	0.01374	0.01403	0.02521
	A2	0.00791	0.00820	0.01950
	A3	0.01277	0.01300	0.02428
	A3	0.00667	0.00690	0.01830
	S0	0.02453	0.02585	0.08923
	S0	0.00999	0.01130	0.07480
	S1	0.01150	0.01281	0.04953
	S1	0.01155	0.01423	0.05300
sky130_fd_sc_hs__mux4_2	A0	0.01859	0.01903	0.03008
	A0	0.01193	0.01238	0.02369
	A1	0.01732	0.01780	0.02897
	A1	0.01069	0.01119	0.02261
	A2	0.01629	0.01676	0.02778
	A2	0.00996	0.01044	0.02177
	A3	0.01534	0.01587	0.02713
	A3	0.00910	0.00964	0.02119
	S0	0.02905	0.03069	0.09389
	S0	0.01398	0.01564	0.07908
	S1	0.01398	0.01543	0.05241
	S1	0.01447	0.01776	0.05556

sky130_fd_sc_hs__mux4_4	**A0**	0.03429	0.03508	0.05715
	A0	0.02258	0.02342	0.04568
	A1	0.03157	0.03234	0.05454
	A1	0.02006	0.02086	0.04325
	A2	0.03154	0.03233	0.05422
	A2	0.02005	0.02085	0.04294
	A3	0.02983	0.03061	0.05262
	A3	0.01821	0.01900	0.04121
	S0	0.04900	0.05088	0.14325
	S0	0.02598	0.02789	0.12726
	S1	0.02499	0.02621	0.07469
	S1	0.02587	0.03023	0.07788

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00505	0.00509	0.01674
	A0	0.01103	0.01113	0.02254
	A1	0.00658	0.00662	0.01873
	A1	0.01248	0.01253	0.02376
	A2	0.00752	0.00758	0.01990
	A2	0.01336	0.01340	0.02458
	A3	0.00855	0.00853	0.02015
	A3	0.01460	0.01458	0.02582
	S0	0.00824	0.01071	0.07471
	S0	0.02267	0.02518	0.08863
	S1	0.01171	0.01351	0.05100
	S1	0.01020	0.01240	0.05155

sky130_fd_sc_hs__mux4_2	**A0**	0.01007	0.00950	0.02192
	A0	0.01672	0.01613	0.02743
	A1	0.01133	0.01064	0.02334
	A1	0.01792	0.01735	0.02863
	A2	0.01098	0.01028	0.02174
	A2	0.01729	0.01675	0.02800
	A3	0.01187	0.01115	0.02341
	A3	0.01808	0.01750	0.02884
	S0	0.01178	0.01408	0.07835
	S0	0.02691	0.02920	0.09240
	S1	0.01575	0.01710	0.05400
	S1	0.01427	0.01615	0.05534
sky130_fd_sc_hs__mux4_4	**A0**	0.01856	0.01705	0.03947
	A0	0.03027	0.02905	0.05096
	A1	0.02156	0.02036	0.04238
	A1	0.03302	0.03187	0.05376
	A2	0.02168	0.01992	0.04350
	A2	0.03318	0.03160	0.05324
	A3	0.02373	0.02210	0.04416
	A3	0.03526	0.03397	0.05564
	S0	0.02208	0.02453	0.11984
	S0	0.04480	0.04752	0.13979
	S1	0.01352	0.01507	0.06671
	S1	0.02519	0.02673	0.07675

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)**	0.00807	0.00808	0.02038
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00331	0.00332	0.01564
	(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	0.00136	0.00134
	(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)	-0.00136	-0.00158	-0.00159
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00898	0.00896	0.02119
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00357	0.00353	0.01578
	(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)	0.00171	0.00150	0.00147
	(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	-0.00154	-0.00156
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01511	0.01517	0.03950
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00580	0.00583	0.03021
	(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)	0.00300	0.00255	0.00250
	(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)	-0.00276	-0.00324	-0.00330

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)	0.00132	0.00134	0.01376
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00607	0.00609	0.01851
	(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)	-0.00131	-0.00133	-0.00133
	(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)	0.00159	0.00160	0.00160
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00207	0.00206	0.01440
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00749	0.00747	0.01980
	(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)	-0.00143	-0.00146	-0.00146
	(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)	0.00156	0.00158	0.00157

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00297	0.00300	0.02750
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01225	0.01232	0.03678
	(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)	-0.00244	-0.00249	-0.00250
	(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)	0.00330	0.00331	0.00331

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)**	0.00673	0.00672	0.01888
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00204	0.00201	0.01419
	(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)	0.00145	0.00124	0.00121
	(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)	-0.00150	-0.00174	-0.00176

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00772	0.00773	0.01997
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00235	0.00235	0.01459
	(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)	0.00149	0.00132	0.00130
	(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)	-0.00148	-0.00167	-0.00168
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01241	0.01246	0.03692
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00337	0.00338	0.02790
	(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)	0.00288	0.00246	0.00239
	(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)	-0.00272	-0.00322	-0.00326

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)**	0.00277	0.00279	0.01493
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00747	0.00748	0.01961
	(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)	-0.00116	-0.00120	-0.00121
	(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)	0.00176	0.00177	0.00177
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00329	0.00327	0.01568
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00867	0.00865	0.02102
	(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)	-0.00126	-0.00130	-0.00130
	(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)	0.00169	0.00170	0.00170
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00593	0.00599	0.03056
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01500	0.01507	0.03957
	(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)	-0.00231	-0.00239	-0.00239
	(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)	0.00323	0.00324	0.00326

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)	0.00165	0.00144	0.00141
	(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)	-0.00127	-0.00153	-0.00154
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00828	0.00829	0.02028
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00349	0.00348	0.01550
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)	0.00186	0.00165	0.00161
	(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)	-0.00129	-0.00153	-0.00155
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00850	0.00848	0.02057
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00333	0.00328	0.01540

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)**	0.00311	0.00267	0.00261
	(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)	-0.00261	-0.00310	-0.00314
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01531	0.01535	0.03941
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00585	0.00585	0.02996

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)**	-0.00138	-0.00140	-0.00140
	(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	0.00156	0.00155
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00211	0.00213	0.01417
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00690	0.00691	0.01896

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)**	-0.00158	-0.00160	-0.00160
	(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)	0.00155	0.00156	0.00156
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00220	0.00217	0.01438
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00738	0.00736	0.01955
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)**	-0.00255	-0.00260	-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)	0.00312	0.00315	0.00314
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00286	0.00290	0.02705
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01232	0.01240	0.03651

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)**	0.00731	0.00727	0.01939
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00229	0.00222	0.01436
	(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)	0.00181	0.00160	0.00157
	(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)	-0.00145	-0.00169	-0.00170
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00757	0.00758	0.01982
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00249	0.00249	0.01474
	(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)	0.00161	0.00141	0.00139
	(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)	-0.00141	-0.00162	-0.00163
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01359	0.01358	0.03785
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00409	0.00404	0.02834
	(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)	0.00298	0.00256	0.00252
	(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)	-0.00265	-0.00312	-0.00316

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)	0.00308	0.00305	0.01518
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00811	0.00809	0.02018
	(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)	-0.00153	-0.00156	-0.00157
	(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)	0.00171	0.00172	0.00172
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00302	0.00302	0.01543
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00811	0.00811	0.02049
	(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)	-0.00135	-0.00139	-0.00139
	(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)	0.00164	0.00165	0.00165

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00514	0.00512	0.02947
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01467	0.01467	0.03894
	(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)	-0.00243	-0.00252	-0.00252
	(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)	0.00314	0.00317	0.00317

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)**	0.00902	0.00945	0.03350
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00105	-0.00068	0.02342
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01345	0.01356	0.03837
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00488	0.00492	0.02984
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01291	0.01371	0.05798
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00125	0.00201	0.04629
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00935	0.00977	0.03390
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00084	-0.00045	0.02369
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01268	0.01303	0.03779
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00402	0.00432	0.02922
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01246	0.01286	0.03772
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00368	0.00401	0.02896
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01252	0.01335	0.05763
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00087	0.00167	0.04595
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01336	0.01421	0.05856
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00159	0.00242	0.04675
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01319	0.01329	0.03819
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00443	0.00448	0.02946
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01375	0.01452	0.05885
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00190	0.00266	0.04698

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01001	0.01041	0.03476
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00010	0.00043	0.02481
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01438	0.01414	0.03916
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00621	0.00590	0.03103
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01395	0.01471	0.05929
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00225	0.00298	0.04759
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00991	0.01027	0.03474
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00003	0.00034	0.02477
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01488	0.01443	0.03915
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00703	0.00653	0.03135
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01440	0.01397	0.03882
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00652	0.00605	0.03095
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01401	0.01477	0.05953
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00202	0.00268	0.04750
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01427	0.01527	0.05986
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00227	0.00319	0.04785
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01363	0.01338	0.03854
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00543	0.00513	0.03036
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01489	0.01589	0.06031
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00318	0.00420	0.04860

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01411	0.01442	0.03582
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00020	0.00004	0.02150
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02197	0.02095	0.04345
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01070	0.00965	0.03227
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02108	0.02191	0.07988
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00366	0.00443	0.06242
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01418	0.01445	0.03600
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00025	0.00005	0.02157
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02220	0.02185	0.04417
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01040	0.00999	0.03252
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02143	0.02109	0.04377
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00949	0.00912	0.03195
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02022	0.02138	0.08073
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00309	0.00420	0.06359
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02108	0.02226	0.08173
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00384	0.00504	0.06450
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02170	0.02068	0.04341
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01018	0.00915	0.03193
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02258	0.02342	0.08153
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00488	0.00573	0.06375

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)**	0.00063	0.00151	0.02588
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01066	0.01159	0.03593
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00643	0.00738	0.03254
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01501	0.01597	0.04098
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00243	0.00424	0.04865
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01407	0.01592	0.06033
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00038	0.00134	0.02547
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01056	0.01155	0.03570
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00613	0.00718	0.03233
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01478	0.01586	0.04075
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00641	0.00745	0.03243
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01523	0.01631	0.04104
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00164	0.00348	0.04784
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01327	0.01517	0.05953
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00087	0.00280	0.04693
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01264	0.01458	0.05873
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00681	0.00770	0.03276
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01560	0.01650	0.04139
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00166	0.00347	0.04781
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01352	0.01535	0.05970

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00097	0.00003	0.02467
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00892	0.00995	0.03459
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00497	0.00591	0.03134
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01315	0.01414	0.03933
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00102	0.00281	0.04764
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01268	0.01451	0.05935
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00081	0.00013	0.02467
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00911	0.01010	0.03466
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00553	0.00650	0.03196
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01338	0.01441	0.03962
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00607	0.00699	0.03230
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01398	0.01493	0.03998
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00047	0.00221	0.04731
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01246	0.01426	0.05934
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00026	0.00196	0.04696
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01228	0.01404	0.05897
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00577	0.00668	0.03198
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01399	0.01495	0.04000
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00010	0.00189	0.04661
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01180	0.01359	0.05835

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00135	-0.00034	0.02179
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01288	0.01391	0.03610
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01003	0.01066	0.03477
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02126	0.02189	0.04554
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00123	0.00350	0.06185
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01864	0.02093	0.07928
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00124	-0.00030	0.02169
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	0.01313	0.01415	0.03614
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00892	0.00995	0.03357
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02066	0.02171	0.04494
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00992	0.01084	0.03420
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02187	0.02286	0.04576
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00090	0.00365	0.06384
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01800	0.02074	0.08096
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00018	0.00282	0.06289
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01741	0.02014	0.08018
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01061	0.01110	0.03492
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02216	0.02272	0.04601
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00008	0.00214	0.06029
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01765	0.01993	0.07807

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)	0.00596	0.00674	0.03207
	(A1 * A3 * S0 * X)	-0.00038	0.00035	0.02574
	(A0 * A2 * !S0 * X)	0.00596	0.00674	0.03207
	(A0 * A2 * !S0 * X)	-0.00038	0.00035	0.02574
	(!A1 * !A3 * S0 * !X)	0.00620	0.00711	0.03238
	(!A1 * !A3 * S0 * !X)	-0.00032	0.00056	0.02585
	(!A0 * !A2 * !S0 * !X)	0.00620	0.00711	0.03238
	(!A0 * !A2 * !S0 * !X)	-0.00033	0.00056	0.02585
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00627	0.00709	0.03225
	(A1 * A3 * S0 * X)	-0.00033	0.00044	0.02563
	(A0 * A2 * !S0 * X)	0.00627	0.00707	0.03225
	(A0 * A2 * !S0 * X)	-0.00033	0.00044	0.02562
	(!A1 * !A3 * S0 * !X)	0.00628	0.00725	0.03236
	(!A1 * !A3 * S0 * !X)	-0.00043	0.00053	0.02563
	(!A0 * !A2 * !S0 * !X)	0.00628	0.00724	0.03235
	(!A0 * !A2 * !S0 * !X)	-0.00043	0.00052	0.02563
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00912	0.00951	0.03234
	(A1 * A3 * S0 * X)	-0.00026	0.00007	0.02297
	(A0 * A2 * !S0 * X)	0.00912	0.00951	0.03234
	(A0 * A2 * !S0 * X)	-0.00026	0.00007	0.02297
	(!A1 * !A3 * S0 * !X)	0.00915	0.00964	0.03251
	(!A1 * !A3 * S0 * !X)	-0.00060	-0.00016	0.02278
	(!A0 * !A2 * !S0 * !X)	0.00915	0.00963	0.03251
	(!A0 * !A2 * !S0 * !X)	-0.00060	-0.00016	0.02278

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)	-0.00082	0.00066	0.02593
	(A1 * A3 * S0 * X)	0.00550	0.00702	0.03229
	(A0 * A2 * !S0 * X)	-0.00082	0.00064	0.02593
	(A0 * A2 * !S0 * X)	0.00550	0.00700	0.03229
	(!A1 * !A3 * S0 * !X)	-0.00087	0.00040	0.02569
	(!A1 * !A3 * S0 * !X)	0.00564	0.00695	0.03222
	(!A0 * !A2 * !S0 * !X)	-0.00087	0.00040	0.02569
	(!A0 * !A2 * !S0 * !X)	0.00564	0.00695	0.03222
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00090	0.00056	0.02573
	(A1 * A3 * S0 * X)	0.00571	0.00717	0.03236
	(A0 * A2 * !S0 * X)	-0.00090	0.00055	0.02573
	(A0 * A2 * !S0 * X)	0.00571	0.00715	0.03236
	(!A1 * !A3 * S0 * !X)	-0.00082	0.00047	0.02565
	(!A1 * !A3 * S0 * !X)	0.00590	0.00717	0.03238
	(!A0 * !A2 * !S0 * !X)	-0.00082	0.00045	0.02565
	(!A0 * !A2 * !S0 * !X)	0.00590	0.00720	0.03238
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00128	-0.00021	0.02298
	(A1 * A3 * S0 * X)	0.00806	0.00919	0.03237
	(A0 * A2 * !S0 * X)	-0.00128	-0.00021	0.02298
	(A0 * A2 * !S0 * X)	0.00806	0.00919	0.03237
	(!A1 * !A3 * S0 * !X)	-0.00096	0.00008	0.02294
	(!A1 * !A3 * S0 * !X)	0.00881	0.00984	0.03270
	(!A0 * !A2 * !S0 * !X)	-0.00096	0.00009	0.02294
	(!A0 * !A2 * !S0 * !X)	0.00881	0.00985	0.03270

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00233	0.00278	0.97713
sky130_fd_sc_hs__nand2b_2	0.00262	0.00528	1.79674
sky130_fd_sc_hs__nand2b_4	0.00385	0.00807	2.11511

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.17775	0.29920
sky130_fd_sc_hs__nand2b_2	0.00000	0.13050	0.21997
sky130_fd_sc_hs__nand2b_4	0.00000	0.36112	0.61078

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)	0.06342	0.58401	6.44506
	B->Y (FR)	0.04171	0.81293	10.80050
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.06171	0.47046	5.80365
	B->Y (FR)	0.03947	0.72266	10.85250
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.07490	0.49725	6.40938
	B->Y (FR)	0.05115	0.72657	11.07050

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)	0.07974	0.55083	5.18852
	B->Y (RF)	0.02753	0.47351	6.27658
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.08775	0.54876	5.51319
	B->Y (RF)	0.02796	0.40496	6.21992
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.06901	0.41122	3.84386
	B->Y (RF)	0.02441	0.28071	4.45779

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	0.00687	0.00766	0.03167
	A_N	0.00352	0.00432	0.02846
	B	0.00018	0.00069	0.00419
	B	0.00396	0.00448	0.00805
sky130_fd_sc_hs__nand2b_2	A_N	0.00907	0.01005	0.02941
	A_N	0.00562	0.00661	0.02621
	B	0.00008	0.00107	0.00800
	B	0.00745	0.00819	0.01553
sky130_fd_sc_hs__nand2b_4	A_N	0.01202	0.01372	0.05269
	A_N	0.00704	0.00877	0.04811
	B	-0.00026	0.00114	0.01205
	B	0.01097	0.01204	0.02335

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00351	0.00499	0.02828
	A_N	0.00684	0.00830	0.03132
	B	0.00481	0.00484	0.00709
	B	0.00102	0.00103	0.00236
sky130_fd_sc_hs__nand2b_2	A_N	0.00608	0.00739	0.03093
	A_N	0.00954	0.01083	0.03437
	B	0.00929	0.00944	0.01343
	B	0.00186	0.00190	0.00459
sky130_fd_sc_hs__nand2b_4	A_N	0.01063	0.01308	0.05552
	A_N	0.01562	0.01800	0.06046
	B	0.01623	0.01634	0.02047
	B	0.00489	0.00496	0.00902

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00556	0.00623	0.03033
	(!B * Y)	0.00202	0.00267	0.02679
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00778	0.00834	0.03274
	(!B * Y)	0.00385	0.00440	0.02881
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00955	0.01057	0.05285
	(!B * Y)	0.00381	0.00479	0.04709

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00004	0.00128	0.02561
	(!B * Y)	0.00359	0.00484	0.02916
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00070	0.00167	0.02599
	(!B * Y)	0.00465	0.00563	0.02992
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00127	0.00331	0.04630
	(!B * Y)	0.00707	0.00914	0.05209

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00167	0.00169	0.00168
	(A_N * Y)	-0.00175	-0.00176	-0.00175
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00290	0.00292	0.00290
	(A_N * Y)	-0.00361	-0.00362	-0.00361
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00578	0.00582	0.00580
	(A_N * Y)	-0.00378	-0.00380	-0.00379

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00160	-0.00167	-0.00167
	(A_N * Y)	0.00181	0.00178	0.00176
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00275	-0.00288	-0.00290
	(A_N * Y)	0.00369	0.00364	0.00361
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00547	-0.00581	-0.00580
	(A_N * Y)	0.00405	0.00387	0.00382

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00279	0.00270	1.03196
sky130_fd_sc_hs__nand2_2	0.00534	0.00529	1.99008
sky130_fd_sc_hs__nand2_4	0.00813	0.00788	2.04423
sky130_fd_sc_hs__nand2_8	0.01557	0.01558	3.76547

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.02948	0.10576
sky130_fd_sc_hs__nand2_2	0.00000	0.05895	0.21153
sky130_fd_sc_hs__nand2_4	0.00000	0.06502	0.21153
sky130_fd_sc_hs__nand2_8	0.00000	0.13004	0.42306

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)	0.03234	0.80639	10.96890
	B->Y (FR)	0.04021	0.81440	10.97710
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.02810	0.70362	10.92650
	B->Y (FR)	0.03839	0.71105	10.88170
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.03943	0.71879	11.08220
	B->Y (FR)	0.05969	0.73512	11.05270
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.03169	0.62779	10.76850
	B->Y (FR)	0.04974	0.63151	10.38880

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.02187	0.51863	7.06259
	B->Y (RF)	0.02542	0.48208	6.51185
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.02102	0.47200	7.53316
	B->Y (RF)	0.02705	0.43373	6.88338
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.01921	0.33064	5.29213
	B->Y (RF)	0.02440	0.28535	4.47403
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01722	0.29108	5.52931
	B->Y (RF)	0.02239	0.22822	4.29266

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00053	-0.00006	0.00339
	A	0.00346	0.00394	0.00742
	B	-0.00006	0.00035	0.00382
	B	0.00481	0.00524	0.00873
sky130_fd_sc_hs__nand2_2	A	-0.00150	-0.00030	0.00603
	A	0.00620	0.00744	0.01387
	B	0.00021	0.00114	0.00751
	B	0.00987	0.01082	0.01731
sky130_fd_sc_hs__nand2_4	A	-0.00290	-0.00127	0.00957
	A	0.00881	0.01044	0.01988
	B	0.00022	0.00149	0.01238
	B	0.01571	0.01674	0.02796
sky130_fd_sc_hs__nand2_8	A	-0.00640	-0.00341	0.02277
	A	0.01634	0.01940	0.04562
	B	-0.00079	0.00148	0.02429
	B	0.02984	0.03216	0.05559

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00372	0.00380	0.00597
	A	-0.00026	-0.00017	0.00143
	B	0.00470	0.00479	0.00603
	B	-0.00021	-0.00021	0.00108
sky130_fd_sc_hs__nand2_2	A	0.00730	0.00755	0.01117
	A	-0.00041	-0.00016	0.00296
	B	0.00949	0.00960	0.01255
	B	-0.00030	-0.00029	0.00222
sky130_fd_sc_hs__nand2_4	A	0.01350	0.01372	0.01897
	A	0.00184	0.00203	0.00695
	B	0.01773	0.01781	0.02237
	B	0.00197	0.00196	0.00603
sky130_fd_sc_hs__nand2_8	A	0.02158	0.02258	0.03509
	A	-0.00109	-0.00012	0.01106
	B	0.03042	0.03078	0.03961
	B	-0.00068	-0.00053	0.00822

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00052	0.00052	0.00050
	(!B * Y)	-0.00213	-0.00214	-0.00216
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00097	0.00098	0.00093
	(!B * Y)	-0.00414	-0.00417	-0.00424
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00191	0.00191	0.00181
	(!B * Y)	-0.00499	-0.00501	-0.00515
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00379	0.00378	0.00360
	(!B * Y)	-0.00962	-0.00965	-0.00993

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00050	-0.00050	-0.00049
	(!B * Y)	0.00217	0.00220	0.00217
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00090	-0.00090	-0.00090
	(!B * Y)	0.00424	0.00424	0.00425
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00178	-0.00177	-0.00176
	(!B * Y)	0.00517	0.00518	0.00516
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00350	-0.00352	-0.00350
	(!B * Y)	0.00991	0.00999	0.00994

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00141	0.00143	0.00141
	(!A * Y)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00275	0.00275	0.00275
	(!A * Y)	-0.00361	-0.00361	-0.00360
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00543	0.00546	0.00544
	(!A * Y)	-0.00377	-0.00377	-0.00377
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01080	0.01092	0.01084
	(!A * Y)	-0.00752	-0.00757	-0.00753

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00133	-0.00142	-0.00141
	(!A * Y)	0.00189	0.00187	0.00185
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00255	-0.00275	-0.00275
	(!A * Y)	0.00370	0.00365	0.00361
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00505	-0.00546	-0.00544
	(!A * Y)	0.00400	0.00383	0.00378
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.01012	-0.01092	-0.01084
	(!A * Y)	0.00797	0.00765	0.00756

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00218	0.00280	0.00272	1.02977
sky130_fd_sc_hs__nand3b_2	0.00258	0.00532	0.00529	2.00625
sky130_fd_sc_hs__nand3b_4	0.00366	0.00765	0.00773	1.84700

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	0.17053	0.29920
sky130_fd_sc_hs__nand3b_2	0.00000	0.11605	0.32573
sky130_fd_sc_hs__nand3b_4	0.00000	0.34542	0.61078

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)	0.06532	0.56588	6.30362
	B->Y (FR)	0.04769	0.82818	11.12600
	C->Y (FR)	0.05312	0.82377	10.97470
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.06520	0.47465	6.14933
	B->Y (FR)	0.04142	0.71352	10.93510
	C->Y (FR)	0.04862	0.72726	11.04150
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.08110	0.51123	6.20372
	B->Y (FR)	0.05705	0.71616	10.48500
	C->Y (FR)	0.07732	0.75540	10.80910

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)	0.08710	0.65031	6.74125
	B->Y (RF)	0.03974	0.59164	7.90975
	C->Y (RF)	0.04328	0.54789	7.26163
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.10110	0.67097	7.84726
	B->Y (RF)	0.04110	0.55279	8.77565
	C->Y (RF)	0.04434	0.48814	7.84614
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.08571	0.54909	6.08500
	B->Y (RF)	0.04538	0.48354	7.34663
	C->Y (RF)	0.04893	0.35731	5.47854

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	0.00666	0.00749	0.03157
	A_N	0.00373	0.00457	0.02889
	B	0.00048	0.00083	0.00398
	B	0.00435	0.00433	0.00719
	C	0.00091	0.00124	0.00440
	C	0.00547	0.00542	0.00900
sky130_fd_sc_hs__nand3b_2	A_N	0.00941	0.01044	0.03454
	A_N	0.00616	0.00720	0.03196
	B	0.00068	0.00151	0.00707
	B	0.00846	0.00897	0.01495
	C	0.00156	0.00226	0.00797
	C	0.01114	0.01151	0.01762
sky130_fd_sc_hs__nand3b_4	A_N	0.01257	0.01466	0.05582
	A_N	0.00763	0.00975	0.05157
	B	0.00090	0.00117	0.01066
	B	0.01190	0.01188	0.02200
	C	0.00230	0.00331	0.01247
	C	0.01735	0.01837	0.02768

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00454	0.00598	0.02997
	A_N	0.00746	0.00890	0.03243
	B	0.00576	0.00573	0.00708
	B	0.00187	0.00185	0.00297
	C	0.00667	0.00663	0.00785
	C	0.00202	0.00199	0.00317
sky130_fd_sc_hs__nand3b_2	A_N	0.00819	0.00961	0.03289
	A_N	0.01145	0.01286	0.03566
	B	0.01091	0.01088	0.01314
	B	0.00310	0.00304	0.00517
	C	0.01292	0.01286	0.01575
	C	0.00312	0.00304	0.00540
sky130_fd_sc_hs__nand3b_4	A_N	0.01133	0.01378	0.05439
	A_N	0.01625	0.01867	0.05928
	B	0.01625	0.01627	0.01924
	B	0.00518	0.00513	0.00815
	C	0.02143	0.02144	0.02654
	C	0.00588	0.00581	0.00967

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)	0.00528	0.00600	0.03024
	(B * !C * Y)	0.00197	0.00267	0.02693
	(!B * Y)	0.00526	0.00599	0.03022
	(!B * Y)	0.00198	0.00268	0.02693
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00809	0.00869	0.03303
	(B * !C * Y)	0.00391	0.00448	0.02884
	(!B * Y)	0.00796	0.00857	0.03292
	(!B * Y)	0.00391	0.00449	0.02886
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00965	0.01062	0.05206
	(B * !C * Y)	0.00373	0.00469	0.04614
	(!B * Y)	0.00946	0.01045	0.05197
	(!B * Y)	0.00369	0.00466	0.04619

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)	0.00020	0.00148	0.02591
	(B * !C * Y)	0.00360	0.00489	0.02931
	(!B * Y)	0.00021	0.00149	0.02593
	(!B * Y)	0.00351	0.00481	0.02924
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00062	0.00158	0.02586
	(B * !C * Y)	0.00495	0.00593	0.03017
	(!B * Y)	0.00076	0.00172	0.02600
	(!B * Y)	0.00483	0.00582	0.03008
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00137	0.00340	0.04544
	(B * !C * Y)	0.00760	0.00965	0.05160
	(!B * Y)	0.00156	0.00360	0.04576
	(!B * Y)	0.00735	0.00943	0.05157

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)	0.00156	0.00157	0.00156
	(A_N * C * Y)	-0.00180	-0.00180	-0.00180
	(A_N * !C * Y)	0.00097	0.00098	0.00097
	(A_N * !C * Y)	-0.00180	-0.00180	-0.00180
	(!A_N * !C * Y)	0.00056	0.00056	0.00056
	(!A_N * !C * Y)	-0.00210	-0.00210	-0.00210
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00289	0.00292	0.00290
	(A_N * C * Y)	-0.00370	-0.00372	-0.00370
	(A_N * !C * Y)	0.00176	0.00177	0.00176
	(A_N * !C * Y)	-0.00373	-0.00373	-0.00372
	(!A_N * !C * Y)	0.00121	0.00122	0.00124
	(!A_N * !C * Y)	-0.00396	-0.00398	-0.00397
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00586	0.00590	0.00587
	(A_N * C * Y)	-0.00361	-0.00362	-0.00360
	(A_N * !C * Y)	0.00322	0.00321	0.00320
	(A_N * !C * Y)	-0.00401	-0.00400	-0.00400
	(!A_N * !C * Y)	0.00226	0.00226	0.00232
	(!A_N * !C * Y)	-0.00433	-0.00434	-0.00433

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)	-0.00147	-0.00156	-0.00156
	(A_N * C * Y)	0.00187	0.00182	0.00181
	(A_N * !C * Y)	-0.00097	-0.00098	-0.00097
	(A_N * !C * Y)	0.00189	0.00191	0.00183
	(!A_N * !C * Y)	-0.00053	-0.00054	-0.00054
	(!A_N * !C * Y)	0.00213	0.00217	0.00212
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00271	-0.00291	-0.00290
	(A_N * C * Y)	0.00387	0.00376	0.00372
	(A_N * !C * Y)	-0.00176	-0.00177	-0.00176
	(A_N * !C * Y)	0.00386	0.00394	0.00376
	(!A_N * !C * Y)	-0.00113	-0.00117	-0.00119
	(!A_N * !C * Y)	0.00405	0.00414	0.00402
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00507	-0.00588	-0.00587
	(A_N * C * Y)	0.00432	0.00367	0.00363
	(A_N * !C * Y)	-0.00322	-0.00321	-0.00320
	(A_N * !C * Y)	0.00439	0.00440	0.00411
	(!A_N * !C * Y)	-0.00218	-0.00222	-0.00224
	(!A_N * !C * Y)	0.00446	0.00454	0.00438

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)	0.00135	0.00136	0.00135
	(A_N * B * Y)	-0.00178	-0.00177	-0.00177
	(A_N * !B * Y)	0.00136	0.00138	0.00137
	(A_N * !B * Y)	-0.00177	-0.00178	-0.00177
	(!A_N * !B * Y)	0.00131	0.00132	0.00131
	(!A_N * !B * Y)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00293	0.00295	0.00292
	(A_N * B * Y)	-0.00357	-0.00359	-0.00357
	(A_N * !B * Y)	0.00294	0.00297	0.00295
	(A_N * !B * Y)	-0.00356	-0.00359	-0.00357
	(!A_N * !B * Y)	0.00262	0.00266	0.00263
	(!A_N * !B * Y)	-0.00389	-0.00392	-0.00389
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00561	0.00564	0.00559
	(A_N * B * Y)	-0.00368	-0.00368	-0.00366
	(A_N * !B * Y)	0.00566	0.00566	0.00565
	(A_N * !B * Y)	-0.00371	-0.00371	-0.00370
	(!A_N * !B * Y)	0.00523	0.00525	0.00521
	(!A_N * !B * Y)	-0.00414	-0.00415	-0.00412

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)	-0.00128	-0.00136	-0.00135
	(A_N * B * Y)	0.00178	0.00181	0.00178
	(A_N * !B * Y)	-0.00133	-0.00137	-0.00137
	(A_N * !B * Y)	0.00179	0.00181	0.00178
	(!A_N * !B * Y)	-0.00126	-0.00132	-0.00131
	(!A_N * !B * Y)	0.00184	0.00186	0.00184
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00279	-0.00295	-0.00292
	(A_N * B * Y)	0.00357	0.00362	0.00358
	(A_N * !B * Y)	-0.00285	-0.00296	-0.00295
	(A_N * !B * Y)	0.00357	0.00362	0.00358
	(!A_N * !B * Y)	-0.00251	-0.00263	-0.00263
	(!A_N * !B * Y)	0.00391	0.00394	0.00390
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00533	-0.00564	-0.00559
	(A_N * B * Y)	0.00370	0.00371	0.00366
	(A_N * !B * Y)	-0.00534	-0.00563	-0.00565
	(A_N * !B * Y)	0.00378	0.00375	0.00370
	(!A_N * !B * Y)	-0.00490	-0.00520	-0.00521
	(!A_N * !B * Y)	0.00424	0.00419	0.00412

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00283	0.00287	0.00279	1.03736
sky130_fd_sc_hs__nand3_2	0.00530	0.00575	0.00526	1.65199
sky130_fd_sc_hs__nand3_4	0.00788	0.00777	0.00781	2.02065

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3_1	0.00000	0.02225	0.15865
sky130_fd_sc_hs__nand3_2	0.00000	0.04450	0.31729
sky130_fd_sc_hs__nand3_4	0.00000	0.04933	0.31729

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)	0.03894	0.81319	10.99920
	B->Y (FR)	0.04795	0.81657	10.98600
	C->Y (FR)	0.05390	0.82610	11.01580
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.03614	0.73414	10.95290
	B->Y (FR)	0.04282	0.68581	9.93696
	C->Y (FR)	0.05066	0.69768	9.98197
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.03875	0.71567	11.01030
	B->Y (FR)	0.05952	0.72914	10.91310
	C->Y (FR)	0.07202	0.73768	10.77800

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.03199	0.61906	8.38705
	B->Y (RF)	0.03883	0.59381	7.96735
	C->Y (RF)	0.04174	0.55025	7.32144
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.02683	0.51119	7.76477
	B->Y (RF)	0.03647	0.49204	7.36401
	C->Y (RF)	0.04128	0.44914	6.68322
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.02141	0.39540	6.32381
	B->Y (RF)	0.03072	0.36352	5.67896
	C->Y (RF)	0.03427	0.30929	4.79545

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00040	-0.00001	0.00326
	A	0.00384	0.00424	0.00753
	B	0.00026	0.00058	0.00367
	B	0.00539	0.00530	0.00883
	C	0.00060	0.00089	0.00403
	C	0.00669	0.00660	0.01014
sky130_fd_sc_hs__nand3_2	A	-0.00137	-0.00029	0.00601
	A	0.00665	0.00771	0.01412
	B	0.00040	0.00123	0.00791
	B	0.01060	0.01147	0.01831
	C	0.00169	0.00256	0.00964
	C	0.01358	0.01447	0.02172
sky130_fd_sc_hs__nand3_4	A	-0.00279	-0.00139	0.00872
	A	0.00900	0.01042	0.02059
	B	0.00044	0.00134	0.01139
	B	0.01605	0.01688	0.02708
	C	0.00225	0.00321	0.01353
	C	0.02190	0.02281	0.03329

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00511	0.00516	0.00671
	A	0.00089	0.00091	0.00247
	B	0.00611	0.00609	0.00743
	B	0.00093	0.00090	0.00203
	C	0.00710	0.00707	0.00836
	C	0.00089	0.00084	0.00203
sky130_fd_sc_hs__nand3_2	A	0.00872	0.00883	0.01257
	A	0.00072	0.00083	0.00406
	B	0.01093	0.01089	0.01353
	B	0.00060	0.00051	0.00307
	C	0.01285	0.01282	0.01592
	C	0.00067	0.00055	0.00343
sky130_fd_sc_hs__nand3_4	A	0.01309	0.01336	0.01944
	A	0.00131	0.00150	0.00595
	B	0.01726	0.01722	0.02197
	B	0.00143	0.00140	0.00496
	C	0.02142	0.02143	0.02587
	C	0.00122	0.00115	0.00497

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00049	0.00049	0.00046
	(B * !C * Y)	-0.00209	-0.00210	-0.00216
	(!B * Y)	0.00051	0.00050	0.00048
	(!B * Y)	-0.00214	-0.00214	-0.00217
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00097	0.00098	0.00088
	(B * !C * Y)	-0.00389	-0.00392	-0.00407
	(!B * Y)	0.00101	0.00101	0.00096
	(!B * Y)	-0.00399	-0.00402	-0.00408
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00181	0.00180	0.00164
	(B * !C * Y)	-0.00465	-0.00468	-0.00499
	(!B * Y)	0.00187	0.00186	0.00177
	(!B * Y)	-0.00487	-0.00489	-0.00503

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00047	-0.00047	-0.00046
	(B * !C * Y)	0.00217	0.00221	0.00217
	(!B * Y)	-0.00048	-0.00048	-0.00047
	(!B * Y)	0.00218	0.00221	0.00217
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00086	-0.00089	-0.00087
	(B * !C * Y)	0.00406	0.00416	0.00409
	(!B * Y)	-0.00094	-0.00095	-0.00093
	(!B * Y)	0.00410	0.00415	0.00409
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00167	-0.00166	-0.00164
	(B * !C * Y)	0.00504	0.00505	0.00503
	(!B * Y)	-0.00173	-0.00172	-0.00171
	(!B * Y)	0.00505	0.00506	0.00504

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00064	0.00064	0.00064
	(A * !C * Y)	-0.00184	-0.00184	-0.00183
	(!A * C * Y)	0.00137	0.00138	0.00138
	(!A * C * Y)	-0.00183	-0.00184	-0.00184
	(!A * !C * Y)	0.00074	0.00074	0.00074
	(!A * !C * Y)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00127	0.00128	0.00129
	(A * !C * Y)	-0.00385	-0.00387	-0.00384
	(!A * C * Y)	0.00274	0.00277	0.00274
	(!A * C * Y)	-0.00384	-0.00386	-0.00384
	(!A * !C * Y)	0.00154	0.00155	0.00154
	(!A * !C * Y)	-0.00387	-0.00388	-0.00387
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00228	0.00230	0.00232
	(A * !C * Y)	-0.00377	-0.00379	-0.00377
	(!A * C * Y)	0.00540	0.00547	0.00542
	(!A * C * Y)	-0.00378	-0.00381	-0.00379
	(!A * !C * Y)	0.00272	0.00275	0.00273
	(!A * !C * Y)	-0.00382	-0.00384	-0.00383

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00061	-0.00062	-0.00062
	(A * !C * Y)	0.00188	0.00191	0.00185
	(!A * C * Y)	-0.00127	-0.00138	-0.00138
	(!A * C * Y)	0.00191	0.00186	0.00184
	(!A * !C * Y)	-0.00074	-0.00074	-0.00074
	(!A * !C * Y)	0.00192	0.00195	0.00186
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00121	-0.00122	-0.00124
	(A * !C * Y)	0.00397	0.00402	0.00389
	(!A * C * Y)	-0.00251	-0.00274	-0.00274
	(!A * C * Y)	0.00396	0.00388	0.00385
	(!A * !C * Y)	-0.00154	-0.00155	-0.00154
	(!A * !C * Y)	0.00406	0.00408	0.00391
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00217	-0.00221	-0.00224
	(A * !C * Y)	0.00398	0.00404	0.00385
	(!A * C * Y)	-0.00486	-0.00546	-0.00542
	(!A * C * Y)	0.00415	0.00384	0.00380
	(!A * !C * Y)	-0.00272	-0.00275	-0.00273
	(!A * !C * Y)	0.00418	0.00422	0.00391

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00145	0.00147	0.00146
	(A * !B * Y)	-0.00185	-0.00186	-0.00185
	(!A * B * Y)	0.00146	0.00147	0.00145
	(!A * B * Y)	-0.00185	-0.00186	-0.00185
	(!A * !B * Y)	0.00145	0.00147	0.00146
	(!A * !B * Y)	-0.00185	-0.00186	-0.00185
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00268	0.00274	0.00270
	(A * !B * Y)	-0.00363	-0.00367	-0.00364
	(!A * B * Y)	0.00266	0.00267	0.00266
	(!A * B * Y)	-0.00364	-0.00364	-0.00363
	(!A * !B * Y)	0.00269	0.00273	0.00270
	(!A * !B * Y)	-0.00363	-0.00367	-0.00364
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00543	0.00547	0.00544
	(A * !B * Y)	-0.00383	-0.00385	-0.00384
	(!A * B * Y)	0.00533	0.00533	0.00532
	(!A * B * Y)	-0.00384	-0.00384	-0.00383
	(!A * !B * Y)	0.00542	0.00546	0.00544
	(!A * !B * Y)	-0.00383	-0.00384	-0.00384

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00142	-0.00147	-0.00146
	(A * !B * Y)	0.00186	0.00187	0.00186
	(!A * B * Y)	-0.00135	-0.00146	-0.00145
	(!A * B * Y)	0.00185	0.00188	0.00186
	(!A * !B * Y)	-0.00142	-0.00146	-0.00146
	(!A * !B * Y)	0.00186	0.00187	0.00186
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00256	-0.00270	-0.00270
	(A * !B * Y)	0.00364	0.00368	0.00365
	(!A * B * Y)	-0.00245	-0.00267	-0.00266
	(!A * B * Y)	0.00364	0.00369	0.00364
	(!A * !B * Y)	-0.00257	-0.00271	-0.00270
	(!A * !B * Y)	0.00364	0.00368	0.00365
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00521	-0.00547	-0.00544
	(A * !B * Y)	0.00383	0.00388	0.00385
	(!A * B * Y)	-0.00497	-0.00533	-0.00532
	(!A * B * Y)	0.00385	0.00389	0.00385
	(!A * !B * Y)	-0.00523	-0.00546	-0.00544
	(!A * !B * Y)	0.00383	0.00388	0.00385

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00221	0.00215	0.00286	0.00288	0.97638
sky130_fd_sc_hs__nand4bb_2	0.00253	0.00249	0.00539	0.00532	1.65735
sky130_fd_sc_hs__nand4bb_4	0.00353	0.00364	0.01048	0.01052	2.66255

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	0.31157	0.58684
sky130_fd_sc_hs__nand4bb_2	0.00000	0.17314	0.43994
sky130_fd_sc_hs__nand4bb_4	0.00000	0.65226	1.17536

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)	0.07583	0.59759	6.49536
	B_N->Y (RR)	0.08650	0.60677	6.46586
	C->Y (FR)	0.06237	0.82872	10.79550
	D->Y (FR)	0.06983	0.83938	10.81820
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.07012	0.45349	5.23558
	B_N->Y (RR)	0.08063	0.44695	4.90071
	C->Y (FR)	0.05086	0.68836	9.79135
	D->Y (FR)	0.05821	0.70159	9.86419
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.08523	0.40899	4.55805
	B_N->Y (RR)	0.09974	0.42952	4.65561
	C->Y (FR)	0.04954	0.60718	9.13414
	D->Y (FR)	0.05615	0.62094	9.19924

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)	0.10127	0.75561	8.06213
	B_N->Y (FF)	0.11261	0.77054	8.06465
	C->Y (RF)	0.06569	0.67181	8.65832
	D->Y (RF)	0.07100	0.64155	8.15295
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.11482	0.74500	8.61560
	B_N->Y (FF)	0.13757	0.77462	8.64583
	C->Y (RF)	0.06769	0.58137	8.64891
	D->Y (RF)	0.07254	0.55524	8.15314
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.11542	0.64325	7.83914
	B_N->Y (FF)	0.13286	0.66439	7.84118
	C->Y (RF)	0.07093	0.48365	8.03341
	D->Y (RF)	0.07512	0.44912	7.41427

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	0.00690	0.00766	0.03185
	A_N	0.00436	0.00512	0.02940
	B_N	0.00752	0.00823	0.03233
	B_N	0.00506	0.00578	0.03000
	C	0.00111	0.00134	0.00428
	C	0.00533	0.00520	0.00858
	D	0.00162	0.00183	0.00492
	D	0.00666	0.00654	0.01002
sky130_fd_sc_hs__nand4bb_2	A_N	0.00975	0.01078	0.03516
	A_N	0.00704	0.00809	0.03278
	B_N	0.01202	0.01275	0.03687
	B_N	0.00937	0.01017	0.03518
	C	0.00180	0.00243	0.00835
	C	0.00951	0.01017	0.01604
	D	0.00317	0.00374	0.00968
	D	0.01273	0.01335	0.01938
sky130_fd_sc_hs__nand4bb_4	A_N	0.01622	0.01772	0.05829
	A_N	0.01267	0.01422	0.05480
	B_N	0.01982	0.02084	0.06188
	B_N	0.01615	0.01722	0.05988
	C	0.00291	0.00412	0.02068
	C	0.01815	0.01938	0.03634
	D	0.00511	0.00585	0.02284
	D	0.02408	0.02494	0.04221

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00569	0.00715	0.03170
	A_N	0.00823	0.00963	0.03414
	B_N	0.00704	0.00842	0.03300
	B_N	0.00950	0.01087	0.03536
	C	0.00828	0.00822	0.00933
	C	0.00405	0.00396	0.00504
	D	0.00930	0.00921	0.01048
	D	0.00418	0.00408	0.00527
sky130_fd_sc_hs__nand4bb_2	A_N	0.00967	0.01102	0.03552
	A_N	0.01240	0.01374	0.03821
	B_N	0.01219	0.01351	0.03779
	B_N	0.01484	0.01615	0.04042
	C	0.01463	0.01445	0.01676
	C	0.00688	0.00670	0.00901
	D	0.01666	0.01647	0.01906
	D	0.00685	0.00665	0.00909
sky130_fd_sc_hs__nand4bb_4	A_N	0.01953	0.02201	0.06572
	A_N	0.02306	0.02554	0.06829
	B_N	0.02375	0.02618	0.06968
	B_N	0.02743	0.02984	0.07239
	C	0.02876	0.02828	0.03616
	C	0.01342	0.01296	0.02022
	D	0.03287	0.03238	0.04101
	D	0.01339	0.01291	0.02086

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)	0.00497	0.00569	0.02974
	(B_N * Y)	0.00179	0.00249	0.02656
	(!B_N * C * !D * Y)	0.00543	0.00615	0.03019
	(!B_N * C * !D * Y)	0.00224	0.00294	0.02700
	(!B_N * !C * Y)	0.00543	0.00615	0.03019
	(!B_N * !C * Y)	0.00225	0.00294	0.02701
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00746	0.00805	0.03219
	(B_N * Y)	0.00397	0.00456	0.02871
	(!B_N * C * !D * Y)	0.00802	0.00861	0.03274
	(!B_N * C * !D * Y)	0.00451	0.00509	0.02924
	(!B_N * !C * Y)	0.00802	0.00861	0.03274
	(!B_N * !C * Y)	0.00452	0.00510	0.02924
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.01224	0.01298	0.05374
	(B_N * Y)	0.00725	0.00796	0.04873
	(!B_N * C * !D * Y)	0.01300	0.01374	0.05450
	(!B_N * C * !D * Y)	0.00795	0.00866	0.04944
	(!B_N * !C * Y)	0.01299	0.01373	0.05448
	(!B_N * !C * Y)	0.00796	0.00867	0.04944

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)	0.00041	0.00169	0.02590
	(B_N * Y)	0.00360	0.00487	0.02907
	(!B_N * C * !D * Y)	-0.00002	0.00126	0.02545
	(!B_N * C * !D * Y)	0.00327	0.00454	0.02871
	(!B_N * !C * Y)	-0.00004	0.00123	0.02544
	(!B_N * !C * Y)	0.00317	0.00445	0.02864
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00117	0.00214	0.02611
	(B_N * Y)	0.00465	0.00563	0.02960
	(!B_N * C * !D * Y)	0.00066	0.00161	0.02557
	(!B_N * C * !D * Y)	0.00436	0.00530	0.02923
	(!B_N * !C * Y)	0.00062	0.00157	0.02556
	(!B_N * !C * Y)	0.00416	0.00511	0.02909
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00238	0.00425	0.04592
	(B_N * Y)	0.00740	0.00927	0.05091
	(!B_N * C * !D * Y)	0.00174	0.00361	0.04520
	(!B_N * C * !D * Y)	0.00724	0.00909	0.05059
	(!B_N * !C * Y)	0.00168	0.00355	0.04518
	(!B_N * !C * Y)	0.00683	0.00870	0.05029

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)	0.00492	0.00553	0.02921
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00182	0.00243	0.02611
	(!C * Y)	0.00500	0.00573	0.02956
	(!C * Y)	0.00181	0.00252	0.02637
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00723	0.00760	0.03118
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00383	0.00419	0.02778
	(!C * Y)	0.00742	0.00795	0.03178
	(!C * Y)	0.00384	0.00437	0.02819
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01208	0.01250	0.05204
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00693	0.00736	0.04690
	(!C * Y)	0.01261	0.01326	0.05335
	(!C * Y)	0.00709	0.00775	0.04781

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)	0.00118	0.00245	0.02657
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00427	0.00555	0.02966
	(!C * Y)	0.00062	0.00190	0.02609
	(!C * Y)	0.00378	0.00507	0.02925
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00277	0.00373	0.02745
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00617	0.00712	0.03085
	(!C * Y)	0.00169	0.00265	0.02653
	(!C * Y)	0.00523	0.00619	0.03008
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00514	0.00696	0.04835
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01026	0.01212	0.05349
	(!C * Y)	0.00296	0.00476	0.04643
	(!C * Y)	0.00839	0.01024	0.05187

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)**	0.00149	0.00152	0.00150
	(A_N * B_N * D * Y)	-0.00188	-0.00190	-0.00188
	(A_N * B_N * !D * Y)	0.00100	0.00101	0.00099
	(A_N * B_N * !D * Y)	-0.00190	-0.00191	-0.00189
	(A_N * !B_N * D * Y)	0.00128	0.00130	0.00129
	(A_N * !B_N * D * Y)	-0.00211	-0.00212	-0.00210
	(A_N * !B_N * !D * Y)	0.00073	0.00074	0.00073
	(A_N * !B_N * !D * Y)	-0.00226	-0.00228	-0.00227
	(!A_N * B_N * D * Y)	0.00149	0.00152	0.00150
	(!A_N * B_N * D * Y)	-0.00188	-0.00190	-0.00189
	(!A_N * B_N * !D * Y)	0.00095	0.00095	0.00095
	(!A_N * B_N * !D * Y)	-0.00189	-0.00190	-0.00190
	(!A_N * !B_N * !D * Y)	0.00060	0.00061	0.00060
	(!A_N * !B_N * !D * Y)	-0.00211	-0.00213	-0.00211
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00283	0.00285	0.00284
	(A_N * B_N * D * Y)	-0.00369	-0.00370	-0.00370
	(A_N * B_N * !D * Y)	0.00175	0.00178	0.00176
	(A_N * B_N * !D * Y)	-0.00369	-0.00373	-0.00370
	(A_N * !B_N * D * Y)	0.00276	0.00278	0.00276
	(A_N * !B_N * D * Y)	-0.00382	-0.00383	-0.00379
	(A_N * !B_N * !D * Y)	0.00159	0.00161	0.00160
	(A_N * !B_N * !D * Y)	-0.00412	-0.00415	-0.00413
	(!A_N * B_N * D * Y)	0.00283	0.00286	0.00284
	(!A_N * B_N * D * Y)	-0.00369	-0.00372	-0.00370
	(!A_N * B_N * !D * Y)	0.00168	0.00168	0.00168
	(!A_N * B_N * !D * Y)	-0.00370	-0.00370	-0.00371
	(!A_N * !B_N * !D * Y)	0.00129	0.00131	0.00131
	(!A_N * !B_N * !D * Y)	-0.00379	-0.00383	-0.00381

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00563	0.00570	0.00565
	(A_N * B_N * D * Y)	-0.00721	-0.00727	-0.00724
	(A_N * B_N * !D * Y)	0.00346	0.00347	0.00348
	(A_N * B_N * !D * Y)	-0.00721	-0.00723	-0.00724
	(A_N * !B_N * D * Y)	0.00545	0.00549	0.00545
	(A_N * !B_N * D * Y)	-0.00752	-0.00755	-0.00749
	(A_N * !B_N * !D * Y)	0.00306	0.00308	0.00305
	(A_N * !B_N * !D * Y)	-0.00819	-0.00822	-0.00818
	(!A_N * B_N * D * Y)	0.00563	0.00569	0.00565
	(!A_N * B_N * D * Y)	-0.00722	-0.00728	-0.00724
	(!A_N * B_N * !D * Y)	0.00330	0.00332	0.00331
	(!A_N * B_N * !D * Y)	-0.00725	-0.00728	-0.00726
	(!A_N * !B_N * !D * Y)	0.00247	0.00251	0.00251
	(!A_N * !B_N * !D * Y)	-0.00750	-0.00760	-0.00756

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)**	-0.00146	-0.00149	-0.00149
	(A_N * B_N * D * Y)	0.00189	0.00191	0.00190
	(A_N * B_N * !D * Y)	-0.00100	-0.00101	-0.00099
	(A_N * B_N * !D * Y)	0.00190	0.00193	0.00191
	(A_N * !B_N * D * Y)	-0.00119	-0.00129	-0.00129
	(A_N * !B_N * D * Y)	0.00219	0.00213	0.00210
	(A_N * !B_N * !D * Y)	-0.00073	-0.00074	-0.00073
	(A_N * !B_N * !D * Y)	0.00231	0.00232	0.00232
	(!A_N * B_N * D * Y)	-0.00145	-0.00150	-0.00150
	(!A_N * B_N * D * Y)	0.00190	0.00191	0.00190
	(!A_N * B_N * !D * Y)	-0.00095	-0.00095	-0.00095
	(!A_N * B_N * !D * Y)	0.00197	0.00199	0.00192
	(!A_N * !B_N * !D * Y)	-0.00057	-0.00058	-0.00057
	(!A_N * !B_N * !D * Y)	0.00214	0.00218	0.00214
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00277	-0.00285	-0.00284
	(A_N * B_N * D * Y)	0.00370	0.00375	0.00371
	(A_N * B_N * !D * Y)	-0.00175	-0.00178	-0.00176
	(A_N * B_N * !D * Y)	0.00370	0.00376	0.00372
	(A_N * !B_N * D * Y)	-0.00255	-0.00276	-0.00276
	(A_N * !B_N * D * Y)	0.00400	0.00385	0.00379
	(A_N * !B_N * !D * Y)	-0.00159	-0.00161	-0.00160
	(A_N * !B_N * !D * Y)	0.00417	0.00425	0.00423
	(!A_N * B_N * D * Y)	-0.00275	-0.00285	-0.00284
	(!A_N * B_N * D * Y)	0.00373	0.00375	0.00371
	(!A_N * B_N * !D * Y)	-0.00168	-0.00168	-0.00168
	(!A_N * B_N * !D * Y)	0.00377	0.00383	0.00374
	(!A_N * !B_N * !D * Y)	-0.00124	-0.00125	-0.00123
	(!A_N * !B_N * !D * Y)	0.00390	0.00395	0.00387

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00552	-0.00569	-0.00565
	(A_N * B_N * D * Y)	0.00725	0.00734	0.00728
	(A_N * B_N * !D * Y)	-0.00346	-0.00347	-0.00348
	(A_N * B_N * !D * Y)	0.00724	0.00737	0.00729
	(A_N * !B_N * D * Y)	-0.00498	-0.00547	-0.00545
	(A_N * !B_N * D * Y)	0.00794	0.00759	0.00749
	(A_N * !B_N * !D * Y)	-0.00306	-0.00308	-0.00305
	(A_N * !B_N * !D * Y)	0.00829	0.00845	0.00841
	(!A_N * B_N * D * Y)	-0.00544	-0.00569	-0.00565
	(!A_N * B_N * D * Y)	0.00735	0.00734	0.00727
	(!A_N * B_N * !D * Y)	-0.00330	-0.00332	-0.00331
	(!A_N * B_N * !D * Y)	0.00749	0.00762	0.00735
	(!A_N * !B_N * !D * Y)	-0.00239	-0.00241	-0.00238
	(!A_N * !B_N * !D * Y)	0.00772	0.00783	0.00766

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)	0.00130	0.00132	0.00130
	(A_N * B_N * C * Y)	-0.00198	-0.00200	-0.00198
	(A_N * !C * Y)	0.00132	0.00134	0.00132
	(A_N * !C * Y)	-0.00198	-0.00200	-0.00198
	(A_N * !B_N * C * Y)	0.00128	0.00129	0.00128
	(A_N * !B_N * C * Y)	-0.00203	-0.00203	-0.00202
	(!A_N * B_N * C * Y)	0.00130	0.00132	0.00131
	(!A_N * B_N * C * Y)	-0.00198	-0.00199	-0.00199
	(!A_N * B_N * !C * Y)	0.00131	0.00134	0.00132
	(!A_N * B_N * !C * Y)	-0.00198	-0.00200	-0.00199
	(!A_N * !B_N * !C * Y)	0.00132	0.00133	0.00132
	(!A_N * !B_N * !C * Y)	-0.00199	-0.00199	-0.00199

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00274	0.00274	0.00274
	(A_N * B_N * C * Y)	-0.00362	-0.00361	-0.00361
	(A_N * !C * Y)	0.00275	0.00280	0.00277
	(A_N * !C * Y)	-0.00359	-0.00363	-0.00361
	(A_N * !B_N * C * Y)	0.00272	0.00275	0.00272
	(A_N * !B_N * C * Y)	-0.00369	-0.00372	-0.00369
	(!A_N * B_N * C * Y)	0.00274	0.00274	0.00274
	(!A_N * B_N * C * Y)	-0.00362	-0.00361	-0.00361
	(!A_N * B_N * !C * Y)	0.00278	0.00281	0.00278
	(!A_N * B_N * !C * Y)	-0.00361	-0.00364	-0.00361
	(!A_N * !B_N * !C * Y)	0.00277	0.00280	0.00277
	(!A_N * !B_N * !C * Y)	-0.00362	-0.00363	-0.00361
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00544	0.00550	0.00548
	(A_N * B_N * C * Y)	-0.00715	-0.00720	-0.00719
	(A_N * !C * Y)	0.00554	0.00559	0.00554
	(A_N * !C * Y)	-0.00720	-0.00723	-0.00719
	(A_N * !B_N * C * Y)	0.00537	0.00542	0.00537
	(A_N * !B_N * C * Y)	-0.00738	-0.00742	-0.00735
	(!A_N * B_N * C * Y)	0.00554	0.00558	0.00552
	(!A_N * B_N * C * Y)	-0.00722	-0.00723	-0.00719
	(!A_N * B_N * !C * Y)	0.00549	0.00556	0.00550
	(!A_N * B_N * !C * Y)	-0.00718	-0.00724	-0.00719
	(!A_N * !B_N * !C * Y)	0.00548	0.00552	0.00550
	(!A_N * !B_N * !C * Y)	-0.00719	-0.00721	-0.00720

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)**	-0.00123	-0.00132	-0.00130
	(A_N * B_N * C * Y)	0.00200	0.00202	0.00200
	(A_N * !C * Y)	-0.00127	-0.00132	-0.00132
	(A_N * !C * Y)	0.00199	0.00202	0.00200
	(A_N * !B_N * C * Y)	-0.00119	-0.00129	-0.00128
	(A_N * !B_N * C * Y)	0.00207	0.00205	0.00202
	(!A_N * B_N * C * Y)	-0.00123	-0.00132	-0.00131
	(!A_N * B_N * C * Y)	0.00199	0.00202	0.00200
	(!A_N * B_N * !C * Y)	-0.00127	-0.00133	-0.00132
	(!A_N * B_N * !C * Y)	0.00199	0.00201	0.00200
	(!A_N * !B_N * !C * Y)	-0.00127	-0.00133	-0.00132
	(!A_N * !B_N * !C * Y)	0.00199	0.00201	0.00199
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00256	-0.00274	-0.00274
	(A_N * B_N * C * Y)	0.00362	0.00362	0.00362
	(A_N * !C * Y)	-0.00265	-0.00279	-0.00277
	(A_N * !C * Y)	0.00361	0.00366	0.00362
	(A_N * !B_N * C * Y)	-0.00250	-0.00275	-0.00272
	(A_N * !B_N * C * Y)	0.00380	0.00375	0.00369
	(!A_N * B_N * C * Y)	-0.00256	-0.00274	-0.00274
	(!A_N * B_N * C * Y)	0.00362	0.00362	0.00362
	(!A_N * B_N * !C * Y)	-0.00265	-0.00279	-0.00278
	(!A_N * B_N * !C * Y)	0.00361	0.00366	0.00362
	(!A_N * !B_N * !C * Y)	-0.00263	-0.00279	-0.00277
	(!A_N * !B_N * !C * Y)	0.00364	0.00366	0.00362

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00511	-0.00550	-0.00548
	(A_N * B_N * C * Y)	0.00722	0.00731	0.00723
	(A_N * !C * Y)	-0.00528	-0.00554	-0.00554
	(A_N * !C * Y)	0.00720	0.00730	0.00723
	(A_N * !B_N * C * Y)	-0.00499	-0.00542	-0.00537
	(A_N * !B_N * C * Y)	0.00756	0.00746	0.00735
	(!A_N * B_N * C * Y)	-0.00512	-0.00551	-0.00552
	(!A_N * B_N * C * Y)	0.00722	0.00731	0.00722
	(!A_N * B_N * !C * Y)	-0.00528	-0.00554	-0.00550
	(!A_N * B_N * !C * Y)	0.00720	0.00730	0.00722
	(!A_N * !B_N * !C * Y)	-0.00524	-0.00552	-0.00550
	(!A_N * !B_N * !C * Y)	0.00726	0.00729	0.00722

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00217	0.00281	0.00281	0.00272	1.03193
sky130_fd_sc_hs__nand4b_2	0.00272	0.00554	0.00537	0.00537	1.64707
sky130_fd_sc_hs__nand4b_4	0.00380	0.00786	0.00802	0.00769	2.03099

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	0.16329	0.29920
sky130_fd_sc_hs__nand4b_2	0.00000	0.10158	0.43150
sky130_fd_sc_hs__nand4b_4	0.00000	0.32972	0.61078

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)	0.06832	0.55992	6.14335
	B->Y (FR)	0.05003	0.83061	11.13730
	C->Y (FR)	0.05824	0.83946	11.14160
	D->Y (FR)	0.06145	0.83425	10.98770
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.06866	0.42781	4.75741
	B->Y (FR)	0.04464	0.67834	9.73627
	C->Y (FR)	0.05295	0.69391	9.87951
	D->Y (FR)	0.05921	0.70086	9.83414
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.08485	0.50272	6.24285
	B->Y (FR)	0.06107	0.72748	10.80720
	C->Y (FR)	0.07714	0.74394	10.82720
	D->Y (FR)	0.09228	0.76951	10.96460

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)	0.09722	0.76549	8.30230
	B->Y (RF)	0.05045	0.70667	9.46582
	C->Y (RF)	0.05766	0.67403	8.93474
	D->Y (RF)	0.06060	0.64276	8.43593
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.10772	0.72650	8.45781
	B->Y (RF)	0.05605	0.62909	9.39502
	C->Y (RF)	0.06327	0.57301	8.53952
	D->Y (RF)	0.06863	0.54772	8.05253
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.08433	0.53237	6.09895
	B->Y (RF)	0.04723	0.46396	7.19696
	C->Y (RF)	0.05534	0.41611	6.37639
	D->Y (RF)	0.05968	0.38225	5.75233

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	0.00672	0.00752	0.03130
	A_N	0.00402	0.00483	0.02893
	B	0.00053	0.00082	0.00367
	B	0.00461	0.00454	0.00714
	C	0.00110	0.00134	0.00419
	C	0.00591	0.00580	0.00835
	D	0.00151	0.00173	0.00465
	D	0.00712	0.00701	0.01029
sky130_fd_sc_hs__nand4b_2	A_N	0.00979	0.01073	0.03146
	A_N	0.00716	0.00814	0.02914
	B	0.00045	0.00100	0.00710
	B	0.00886	0.00946	0.01551
	C	0.00169	0.00236	0.00829
	C	0.01173	0.01243	0.01845
	D	0.00300	0.00351	0.00957
	D	0.01495	0.01551	0.02164
sky130_fd_sc_hs__nand4b_4	A_N	0.01252	0.01425	0.05314
	A_N	0.00866	0.01043	0.04996
	B	0.00052	0.00096	0.01002
	B	0.01240	0.01293	0.02208
	C	0.00261	0.00300	0.01193
	C	0.01829	0.01863	0.02772
	D	0.00486	0.00504	0.01436
	D	0.02399	0.02421	0.03353

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00518	0.00657	0.02964
	A_N	0.00787	0.00927	0.03233
	B	0.00622	0.00619	0.00724
	B	0.00212	0.00207	0.00309
	C	0.00717	0.00713	0.00817
	C	0.00229	0.00222	0.00326
	D	0.00805	0.00799	0.00910
	D	0.00227	0.00220	0.00329
sky130_fd_sc_hs__nand4b_2	A_N	0.00941	0.01064	0.03500
	A_N	0.01205	0.01326	0.03758
	B	0.01252	0.01239	0.01467
	B	0.00406	0.00389	0.00608
	C	0.01443	0.01425	0.01663
	C	0.00420	0.00403	0.00637
	D	0.01653	0.01636	0.01903
	D	0.00416	0.00396	0.00640
sky130_fd_sc_hs__nand4b_4	A_N	0.01436	0.01657	0.05926
	A_N	0.01820	0.02039	0.06310
	B	0.01949	0.01944	0.02259
	B	0.00752	0.00740	0.01052
	C	0.02362	0.02344	0.02751
	C	0.00760	0.00742	0.01069
	D	0.02755	0.02738	0.03148
	D	0.00764	0.00747	0.01094

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)	0.00536	0.00604	0.03005
	(B * C * !D * Y)	0.00203	0.00271	0.02673
	(B * !C * Y)	0.00535	0.00604	0.03004
	(B * !C * Y)	0.00203	0.00272	0.02673
	(!B * Y)	0.00533	0.00602	0.03002
	(!B * Y)	0.00204	0.00272	0.02673
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00805	0.00862	0.03319
	(B * C * !D * Y)	0.00392	0.00449	0.02907
	(B * !C * Y)	0.00804	0.00861	0.03318
	(B * !C * Y)	0.00392	0.00449	0.02907
	(!B * Y)	0.00801	0.00857	0.03315
	(!B * Y)	0.00393	0.00449	0.02908
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00955	0.01056	0.05277
	(B * C * !D * Y)	0.00377	0.00476	0.04699
	(B * !C * Y)	0.00954	0.01055	0.05276
	(B * !C * Y)	0.00377	0.00476	0.04699
	(!B * Y)	0.00946	0.01047	0.05269
	(!B * Y)	0.00378	0.00478	0.04700

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)	0.00041	0.00165	0.02588
	(B * C * !D * Y)	0.00385	0.00510	0.02930
	(B * !C * Y)	0.00040	0.00164	0.02588
	(B * !C * Y)	0.00379	0.00504	0.02925
	(!B * Y)	0.00042	0.00166	0.02591
	(!B * Y)	0.00370	0.00496	0.02920
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00053	0.00147	0.02591
	(B * C * !D * Y)	0.00490	0.00586	0.03022
	(B * !C * Y)	0.00049	0.00144	0.02590
	(B * !C * Y)	0.00475	0.00572	0.03013
	(!B * Y)	0.00047	0.00143	0.02593
	(!B * Y)	0.00456	0.00553	0.03001
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00122	0.00328	0.04603
	(B * C * !D * Y)	0.00753	0.00959	0.05221
	(B * !C * Y)	0.00115	0.00321	0.04601
	(B * !C * Y)	0.00725	0.00931	0.05204
	(!B * Y)	0.00115	0.00322	0.04608
	(!B * Y)	0.00688	0.00896	0.05179

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)**	0.00154	0.00154	0.00154
	(A_N * C * D * Y)	-0.00181	-0.00181	-0.00181
	(A_N * C * !D * Y)	0.00097	0.00098	0.00097
	(A_N * C * !D * Y)	-0.00181	-0.00182	-0.00181
	(A_N * !C * Y)	0.00099	0.00098	0.00099
	(A_N * !C * Y)	-0.00181	-0.00181	-0.00181
	(!A_N * C * !D * Y)	0.00055	0.00055	0.00056
	(!A_N * C * !D * Y)	-0.00206	-0.00206	-0.00208
	(!A_N * !C * Y)	0.00058	0.00058	0.00058
	(!A_N * !C * Y)	-0.00209	-0.00209	-0.00209
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00282	0.00286	0.00283
	(A_N * C * D * Y)	-0.00382	-0.00385	-0.00383
	(A_N * C * !D * Y)	0.00174	0.00175	0.00174
	(A_N * C * !D * Y)	-0.00385	-0.00388	-0.00386
	(A_N * !C * Y)	0.00177	0.00177	0.00177
	(A_N * !C * Y)	-0.00387	-0.00388	-0.00386
	(!A_N * C * !D * Y)	0.00116	0.00117	0.00118
	(!A_N * C * !D * Y)	-0.00402	-0.00405	-0.00409
	(!A_N * !C * Y)	0.00124	0.00125	0.00124
	(!A_N * !C * Y)	-0.00408	-0.00411	-0.00411
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00541	0.00544	0.00544
	(A_N * C * D * Y)	-0.00397	-0.00398	-0.00397
	(A_N * C * !D * Y)	0.00313	0.00316	0.00313
	(A_N * C * !D * Y)	-0.00401	-0.00404	-0.00402
	(A_N * !C * Y)	0.00318	0.00317	0.00317
	(A_N * !C * Y)	-0.00404	-0.00403	-0.00404
	(!A_N * C * !D * Y)	0.00219	0.00219	0.00222
	(!A_N * C * !D * Y)	-0.00424	-0.00425	-0.00435
	(!A_N * !C * Y)	0.00232	0.00232	0.00232
	(!A_N * !C * Y)	-0.00437	-0.00437	-0.00439

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)	-0.00144	-0.00154	-0.00154
	(A_N * C * D * Y)	0.00191	0.00184	0.00182
	(A_N * C * !D * Y)	-0.00097	-0.00098	-0.00097
	(A_N * C * !D * Y)	0.00188	0.00188	0.00182
	(A_N * !C * Y)	-0.00099	-0.00098	-0.00099
	(A_N * !C * Y)	0.00190	0.00192	0.00184
	(!A_N * C * !D * Y)	-0.00054	-0.00055	-0.00055
	(!A_N * C * !D * Y)	0.00212	0.00215	0.00211
	(!A_N * !C * Y)	-0.00056	-0.00056	-0.00056
	(!A_N * !C * Y)	0.00213	0.00216	0.00211
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00257	-0.00286	-0.00283
	(A_N * C * D * Y)	0.00408	0.00388	0.00384
	(A_N * C * !D * Y)	-0.00174	-0.00175	-0.00174
	(A_N * C * !D * Y)	0.00396	0.00395	0.00386
	(A_N * !C * Y)	-0.00177	-0.00177	-0.00177
	(A_N * !C * Y)	0.00402	0.00408	0.00391
	(!A_N * C * !D * Y)	-0.00113	-0.00115	-0.00116
	(!A_N * C * !D * Y)	0.00420	0.00426	0.00415
	(!A_N * !C * Y)	-0.00117	-0.00118	-0.00119
	(!A_N * !C * Y)	0.00420	0.00426	0.00415

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00485	-0.00544	-0.00544
	(A_N * C * D * Y)	0.00452	0.00404	0.00400
	(A_N * C * !D * Y)	-0.00313	-0.00316	-0.00313
	(A_N * C * !D * Y)	0.00430	0.00419	0.00402
	(A_N * !C * Y)	-0.00318	-0.00317	-0.00317
	(A_N * !C * Y)	0.00440	0.00443	0.00413
	(!A_N * C * !D * Y)	-0.00214	-0.00216	-0.00217
	(!A_N * C * !D * Y)	0.00455	0.00460	0.00445
	(!A_N * !C * Y)	-0.00220	-0.00222	-0.00224
	(!A_N * !C * Y)	0.00455	0.00461	0.00445

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)**	0.00133	0.00134	0.00134
	(A_N * B * D * Y)	-0.00180	-0.00181	-0.00180
	(A_N * B * !D * Y)	0.00077	0.00078	0.00077
	(A_N * B * !D * Y)	-0.00180	-0.00182	-0.00181
	(A_N * !B * D * Y)	0.00136	0.00136	0.00136
	(A_N * !B * D * Y)	-0.00180	-0.00181	-0.00181
	(A_N * !B * !D * Y)	0.00076	0.00076	0.00076
	(A_N * !B * !D * Y)	-0.00181	-0.00180	-0.00181
	(!A_N * B * !D * Y)	0.00057	0.00057	0.00057
	(!A_N * B * !D * Y)	-0.00186	-0.00186	-0.00185
	(!A_N * !B * D * Y)	0.00130	0.00130	0.00130
	(!A_N * !B * D * Y)	-0.00186	-0.00186	-0.00186
	(!A_N * !B * !D * Y)	0.00067	0.00067	0.00067
	(!A_N * !B * !D * Y)	-0.00186	-0.00187	-0.00187

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00274	0.00274	0.00273
	(A_N * B * D * Y)	-0.00369	-0.00368	-0.00368
	(A_N * B * !D * Y)	0.00157	0.00158	0.00157
	(A_N * B * !D * Y)	-0.00370	-0.00371	-0.00370
	(A_N * !B * D * Y)	0.00273	0.00276	0.00275
	(A_N * !B * D * Y)	-0.00366	-0.00369	-0.00367
	(A_N * !B * !D * Y)	0.00158	0.00160	0.00158
	(A_N * !B * !D * Y)	-0.00367	-0.00371	-0.00368
	(!A_N * B * !D * Y)	0.00126	0.00129	0.00129
	(!A_N * B * !D * Y)	-0.00363	-0.00368	-0.00363
	(!A_N * !B * D * Y)	0.00273	0.00277	0.00275
	(!A_N * !B * D * Y)	-0.00366	-0.00370	-0.00367
	(!A_N * !B * !D * Y)	0.00150	0.00151	0.00151
	(!A_N * !B * !D * Y)	-0.00368	-0.00369	-0.00369
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00549	0.00553	0.00551
	(A_N * B * D * Y)	-0.00395	-0.00396	-0.00395
	(A_N * B * !D * Y)	0.00305	0.00306	0.00304
	(A_N * B * !D * Y)	-0.00399	-0.00400	-0.00398
	(A_N * !B * D * Y)	0.00550	0.00556	0.00552
	(A_N * !B * D * Y)	-0.00394	-0.00397	-0.00395
	(A_N * !B * !D * Y)	0.00303	0.00305	0.00301
	(A_N * !B * !D * Y)	-0.00396	-0.00398	-0.00395
	(!A_N * B * !D * Y)	0.00247	0.00248	0.00250
	(!A_N * B * !D * Y)	-0.00390	-0.00391	-0.00388
	(!A_N * !B * D * Y)	0.00552	0.00557	0.00555
	(!A_N * !B * D * Y)	-0.00394	-0.00396	-0.00395
	(!A_N * !B * !D * Y)	0.00289	0.00291	0.00288
	(!A_N * !B * !D * Y)	-0.00398	-0.00400	-0.00397

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)	-0.00123	-0.00134	-0.00134
	(A_N * B * D * Y)	0.00181	0.00183	0.00182
	(A_N * B * !D * Y)	-0.00077	-0.00078	-0.00077
	(A_N * B * !D * Y)	0.00181	0.00184	0.00181
	(A_N * !B * D * Y)	-0.00130	-0.00136	-0.00136
	(A_N * !B * D * Y)	0.00181	0.00183	0.00182
	(A_N * !B * !D * Y)	-0.00076	-0.00076	-0.00076
	(A_N * !B * !D * Y)	0.00181	0.00184	0.00182
	(!A_N * B * !D * Y)	-0.00055	-0.00056	-0.00055
	(!A_N * B * !D * Y)	0.00189	0.00192	0.00188
	(!A_N * !B * D * Y)	-0.00123	-0.00130	-0.00130
	(!A_N * !B * D * Y)	0.00187	0.00188	0.00186
	(!A_N * !B * !D * Y)	-0.00067	-0.00067	-0.00067
	(!A_N * !B * !D * Y)	0.00193	0.00196	0.00189
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00251	-0.00272	-0.00273
	(A_N * B * D * Y)	0.00371	0.00371	0.00369
	(A_N * B * !D * Y)	-0.00157	-0.00158	-0.00157
	(A_N * B * !D * Y)	0.00370	0.00375	0.00371
	(A_N * !B * D * Y)	-0.00264	-0.00276	-0.00275
	(A_N * !B * D * Y)	0.00370	0.00372	0.00369
	(A_N * !B * !D * Y)	-0.00158	-0.00160	-0.00158
	(A_N * !B * !D * Y)	0.00371	0.00374	0.00369
	(!A_N * B * !D * Y)	-0.00122	-0.00123	-0.00122
	(!A_N * B * !D * Y)	0.00374	0.00379	0.00371
	(!A_N * !B * D * Y)	-0.00258	-0.00276	-0.00275
	(!A_N * !B * D * Y)	0.00370	0.00372	0.00369
	(!A_N * !B * !D * Y)	-0.00150	-0.00151	-0.00151
	(!A_N * !B * !D * Y)	0.00380	0.00382	0.00372

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00499	-0.00553	-0.00551
	(A_N * B * D * Y)	0.00403	0.00400	0.00397
	(A_N * B * !D * Y)	-0.00305	-0.00306	-0.00304
	(A_N * B * !D * Y)	0.00400	0.00407	0.00400
	(A_N * !B * D * Y)	-0.00531	-0.00556	-0.00552
	(A_N * !B * D * Y)	0.00399	0.00400	0.00397
	(A_N * !B * !D * Y)	-0.00303	-0.00305	-0.00301
	(A_N * !B * !D * Y)	0.00398	0.00402	0.00397
	(!A_N * B * !D * Y)	-0.00235	-0.00239	-0.00237
	(!A_N * B * !D * Y)	0.00406	0.00413	0.00400
	(!A_N * !B * D * Y)	-0.00521	-0.00557	-0.00555
	(!A_N * !B * D * Y)	0.00409	0.00400	0.00396
	(!A_N * !B * !D * Y)	-0.00289	-0.00291	-0.00288
	(!A_N * !B * !D * Y)	0.00427	0.00430	0.00406

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)	0.00134	0.00135	0.00134
	(A_N * B * C * Y)	-0.00176	-0.00177	-0.00176
	(A_N * !C * Y)	0.00136	0.00137	0.00136
	(A_N * !C * Y)	-0.00176	-0.00177	-0.00177
	(A_N * !B * C * Y)	0.00134	0.00134	0.00134
	(A_N * !B * C * Y)	-0.00177	-0.00177	-0.00177
	(!A_N * B * !C * Y)	0.00131	0.00132	0.00131
	(!A_N * B * !C * Y)	-0.00182	-0.00183	-0.00182
	(!A_N * !B * C * Y)	0.00129	0.00129	0.00128
	(!A_N * !B * C * Y)	-0.00182	-0.00182	-0.00182
	(!A_N * !B * !C * Y)	0.00131	0.00132	0.00131
	(!A_N * !B * !C * Y)	-0.00181	-0.00183	-0.00182

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00273	0.00273	0.00272
	(A_N * B * C * Y)	-0.00366	-0.00366	-0.00365
	(A_N * !C * Y)	0.00277	0.00278	0.00277
	(A_N * !C * Y)	-0.00364	-0.00365	-0.00365
	(A_N * !B * C * Y)	0.00274	0.00274	0.00273
	(A_N * !B * C * Y)	-0.00366	-0.00365	-0.00365
	(!A_N * B * !C * Y)	0.00277	0.00278	0.00277
	(!A_N * B * !C * Y)	-0.00364	-0.00366	-0.00365
	(!A_N * !B * C * Y)	0.00274	0.00275	0.00273
	(!A_N * !B * C * Y)	-0.00366	-0.00367	-0.00365
	(!A_N * !B * !C * Y)	0.00276	0.00278	0.00277
	(!A_N * !B * !C * Y)	-0.00364	-0.00365	-0.00365
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00536	0.00536	0.00534
	(A_N * B * C * Y)	-0.00365	-0.00365	-0.00364
	(A_N * !C * Y)	0.00544	0.00550	0.00545
	(A_N * !C * Y)	-0.00364	-0.00366	-0.00364
	(A_N * !B * C * Y)	0.00531	0.00534	0.00533
	(A_N * !B * C * Y)	-0.00363	-0.00364	-0.00364
	(!A_N * B * !C * Y)	0.00544	0.00547	0.00544
	(!A_N * B * !C * Y)	-0.00365	-0.00365	-0.00364
	(!A_N * !B * C * Y)	0.00534	0.00536	0.00533
	(!A_N * !B * C * Y)	-0.00364	-0.00365	-0.00364
	(!A_N * !B * !C * Y)	0.00544	0.00550	0.00544
	(!A_N * !B * !C * Y)	-0.00365	-0.00367	-0.00364

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)**	-0.00125	-0.00135	-0.00134
	(A_N * B * C * Y)	0.00178	0.00179	0.00178
	(A_N * !C * Y)	-0.00131	-0.00137	-0.00136
	(A_N * !C * Y)	0.00176	0.00179	0.00178
	(A_N * !B * C * Y)	-0.00125	-0.00134	-0.00134
	(A_N * !B * C * Y)	0.00177	0.00180	0.00178
	(!A_N * B * !C * Y)	-0.00125	-0.00132	-0.00131
	(!A_N * B * !C * Y)	0.00182	0.00184	0.00183
	(!A_N * !B * C * Y)	-0.00120	-0.00129	-0.00128
	(!A_N * !B * C * Y)	0.00182	0.00185	0.00183
	(!A_N * !B * !C * Y)	-0.00126	-0.00132	-0.00131
	(!A_N * !B * !C * Y)	0.00181	0.00184	0.00183
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00250	-0.00273	-0.00272
	(A_N * B * C * Y)	0.00368	0.00371	0.00366
	(A_N * !C * Y)	-0.00264	-0.00278	-0.00277
	(A_N * !C * Y)	0.00365	0.00370	0.00366
	(A_N * !B * C * Y)	-0.00251	-0.00272	-0.00273
	(A_N * !B * C * Y)	0.00367	0.00368	0.00366
	(!A_N * B * !C * Y)	-0.00263	-0.00278	-0.00277
	(!A_N * B * !C * Y)	0.00365	0.00370	0.00366
	(!A_N * !B * C * Y)	-0.00251	-0.00272	-0.00273
	(!A_N * !B * C * Y)	0.00367	0.00368	0.00366
	(!A_N * !B * !C * Y)	-0.00264	-0.00278	-0.00277
	(!A_N * !B * !C * Y)	0.00365	0.00370	0.00366

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00493	-0.00536	-0.00534
	(A_N * B * C * Y)	0.00365	0.00368	0.00366
	(A_N * !C * Y)	-0.00523	-0.00548	-0.00545
	(A_N * !C * Y)	0.00366	0.00368	0.00366
	(A_N * !B * C * Y)	-0.00493	-0.00534	-0.00533
	(A_N * !B * C * Y)	0.00364	0.00368	0.00366
	(!A_N * B * !C * Y)	-0.00521	-0.00547	-0.00544
	(!A_N * B * !C * Y)	0.00366	0.00368	0.00365
	(!A_N * !B * C * Y)	-0.00493	-0.00536	-0.00533
	(!A_N * !B * C * Y)	0.00364	0.00368	0.00365
	(!A_N * !B * !C * Y)	-0.00524	-0.00549	-0.00544
	(!A_N * !B * !C * Y)	0.00366	0.00368	0.00365

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00274	0.00289	0.00285	0.00284	1.03027
sky130_fd_sc_hs__nand4_2	0.00535	0.00540	0.00545	0.00528	1.62585
sky130_fd_sc_hs__nand4_4	0.00801	0.00781	0.00782	0.00802	1.97240

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.01502	0.21153
sky130_fd_sc_hs__nand4_2	0.00000	0.03003	0.42306
sky130_fd_sc_hs__nand4_4	0.00000	0.03362	0.42306

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)	0.04132	0.81146	10.92470
	B->Y (FR)	0.05285	0.83268	11.13660
	C->Y (FR)	0.06045	0.84182	11.14590
	D->Y (FR)	0.06413	0.83633	10.97750
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.03486	0.67148	9.77090
	B->Y (FR)	0.04530	0.67595	9.69288
	C->Y (FR)	0.05252	0.68592	9.72141
	D->Y (FR)	0.05880	0.69913	9.78937
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.04395	0.70467	10.63760
	B->Y (FR)	0.06420	0.71905	10.59670
	C->Y (FR)	0.08281	0.75353	10.87130
	D->Y (FR)	0.09679	0.77146	10.88620

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.03946	0.70992	9.62985
	B->Y (RF)	0.05046	0.69810	9.32480
	C->Y (RF)	0.05678	0.66421	8.77913
	D->Y (RF)	0.06038	0.63186	8.27538
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.03715	0.63637	9.65971
	B->Y (RF)	0.05252	0.62730	9.35676
	C->Y (RF)	0.06006	0.57213	8.51043
	D->Y (RF)	0.06484	0.54458	8.00675
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.02865	0.47645	7.50355
	B->Y (RF)	0.04328	0.45788	7.04016
	C->Y (RF)	0.05145	0.40928	6.21250
	D->Y (RF)	0.05596	0.37521	5.58938

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00019	0.00016	0.00304
	A	0.00435	0.00473	0.00765
	B	0.00054	0.00078	0.00362
	B	0.00599	0.00589	0.00845
	C	0.00114	0.00135	0.00425
	C	0.00742	0.00730	0.00990
	D	0.00150	0.00170	0.00468
	D	0.00872	0.00857	0.01191
sky130_fd_sc_hs__nand4_2	A	-0.00123	-0.00020	0.00582
	A	0.00722	0.00826	0.01425
	B	0.00063	0.00138	0.00733
	B	0.01105	0.01180	0.01771
	C	0.00160	0.00228	0.00829
	C	0.01399	0.01470	0.02062
	D	0.00299	0.00354	0.00966
	D	0.01713	0.01774	0.02375
sky130_fd_sc_hs__nand4_4	A	-0.00240	-0.00116	0.00808
	A	0.00999	0.01125	0.02074
	B	0.00078	0.00131	0.01062
	B	0.01690	0.01716	0.02701
	C	0.00286	0.00329	0.01251
	C	0.02270	0.02311	0.03240
	D	0.00514	0.00573	0.01492
	D	0.02901	0.02961	0.03881

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00557	0.00560	0.00697
	A	0.00103	0.00104	0.00240
	B	0.00660	0.00655	0.00765
	B	0.00110	0.00103	0.00206
	C	0.00750	0.00745	0.00857
	C	0.00110	0.00103	0.00211
	D	0.00849	0.00842	0.00958
	D	0.00107	0.00099	0.00213
sky130_fd_sc_hs__nand4_2	A	0.01016	0.01020	0.01313
	A	0.00173	0.00175	0.00467
	B	0.01232	0.01218	0.01447
	B	0.00180	0.00163	0.00381
	C	0.01447	0.01429	0.01674
	C	0.00179	0.00161	0.00393
	D	0.01641	0.01624	0.01893
	D	0.00174	0.00154	0.00400
sky130_fd_sc_hs__nand4_4	A	0.01580	0.01591	0.02000
	A	0.00345	0.00347	0.00763
	B	0.01989	0.01985	0.02364
	B	0.00353	0.00339	0.00654
	C	0.02395	0.02382	0.02704
	C	0.00359	0.00339	0.00667
	D	0.02818	0.02809	0.03294
	D	0.00335	0.00316	0.00664

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)	0.00056	0.00056	0.00050
	(B * C * !D * Y)	-0.00198	-0.00199	-0.00210
	(B * !C * Y)	0.00055	0.00055	0.00051
	(B * !C * Y)	-0.00203	-0.00204	-0.00211
	(!B * Y)	0.00055	0.00054	0.00053
	(!B * Y)	-0.00208	-0.00208	-0.00211
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00101	0.00102	0.00088
	(B * C * !D * Y)	-0.00389	-0.00394	-0.00419
	(B * !C * Y)	0.00095	0.00096	0.00087
	(B * !C * Y)	-0.00402	-0.00407	-0.00422
	(!B * Y)	0.00098	0.00099	0.00094
	(!B * Y)	-0.00413	-0.00417	-0.00424
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00197	0.00197	0.00173
	(B * C * !D * Y)	-0.00447	-0.00451	-0.00501
	(B * !C * Y)	0.00187	0.00186	0.00171
	(B * !C * Y)	-0.00473	-0.00476	-0.00506
	(!B * Y)	0.00192	0.00191	0.00182
	(!B * Y)	-0.00494	-0.00496	-0.00510

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)	-0.00050	-0.00051	-0.00050
	(B * C * !D * Y)	0.00211	0.00215	0.00211
	(B * !C * Y)	-0.00051	-0.00051	-0.00050
	(B * !C * Y)	0.00211	0.00215	0.00211
	(!B * Y)	-0.00051	-0.00052	-0.00051
	(!B * Y)	0.00211	0.00215	0.00211
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00086	-0.00088	-0.00087
	(B * C * !D * Y)	0.00422	0.00432	0.00425
	(B * !C * Y)	-0.00088	-0.00089	-0.00087
	(B * !C * Y)	0.00426	0.00432	0.00425
	(!B * Y)	-0.00091	-0.00092	-0.00091
	(!B * Y)	0.00426	0.00432	0.00425
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00172	-0.00171	-0.00171
	(B * C * !D * Y)	0.00511	0.00512	0.00510
	(B * !C * Y)	-0.00173	-0.00172	-0.00171
	(B * !C * Y)	0.00511	0.00511	0.00510
	(!B * Y)	-0.00179	-0.00178	-0.00177
	(!B * Y)	0.00512	0.00512	0.00510

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)**	0.00056	0.00056	0.00057
	(A * C * !D * Y)	-0.00191	-0.00191	-0.00190
	(A * !C * Y)	0.00060	0.00060	0.00060
	(A * !C * Y)	-0.00191	-0.00191	-0.00190
	(!A * C * D * Y)	0.00131	0.00131	0.00131
	(!A * C * D * Y)	-0.00191	-0.00191	-0.00190
	(!A * C * !D * Y)	0.00071	0.00072	0.00071
	(!A * C * !D * Y)	-0.00191	-0.00192	-0.00192
	(!A * !C * Y)	0.00071	0.00072	0.00072
	(!A * !C * Y)	-0.00191	-0.00192	-0.00192
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00118	0.00119	0.00122
	(A * C * !D * Y)	-0.00364	-0.00366	-0.00364
	(A * !C * Y)	0.00120	0.00121	0.00123
	(A * !C * Y)	-0.00364	-0.00366	-0.00364
	(!A * C * D * Y)	0.00277	0.00278	0.00277
	(!A * C * D * Y)	-0.00366	-0.00367	-0.00365
	(!A * C * !D * Y)	0.00152	0.00153	0.00151
	(!A * C * !D * Y)	-0.00368	-0.00369	-0.00367
	(!A * !C * Y)	0.00144	0.00145	0.00145
	(!A * !C * Y)	-0.00367	-0.00368	-0.00367
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00228	0.00228	0.00233
	(A * C * !D * Y)	-0.00382	-0.00381	-0.00379
	(A * !C * Y)	0.00235	0.00234	0.00237
	(A * !C * Y)	-0.00382	-0.00381	-0.00380
	(!A * C * D * Y)	0.00540	0.00542	0.00542
	(!A * C * D * Y)	-0.00381	-0.00382	-0.00382
	(!A * C * !D * Y)	0.00288	0.00289	0.00288
	(!A * C * !D * Y)	-0.00385	-0.00386	-0.00385
	(!A * !C * Y)	0.00278	0.00280	0.00277
	(!A * !C * Y)	-0.00387	-0.00390	-0.00386

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)	-0.00056	-0.00056	-0.00057
	(A * C * !D * Y)	0.00195	0.00198	0.00192
	(A * !C * Y)	-0.00057	-0.00058	-0.00058
	(A * !C * Y)	0.00195	0.00198	0.00192
	(!A * C * D * Y)	-0.00120	-0.00131	-0.00131
	(!A * C * D * Y)	0.00200	0.00193	0.00191
	(!A * C * !D * Y)	-0.00071	-0.00072	-0.00071
	(!A * C * !D * Y)	0.00197	0.00198	0.00192
	(!A * !C * Y)	-0.00071	-0.00072	-0.00072
	(!A * !C * Y)	0.00200	0.00203	0.00194
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00113	-0.00113	-0.00115
	(A * C * !D * Y)	0.00377	0.00380	0.00369
	(A * !C * Y)	-0.00115	-0.00116	-0.00118
	(A * !C * Y)	0.00377	0.00382	0.00369
	(!A * C * D * Y)	-0.00244	-0.00278	-0.00277
	(!A * C * D * Y)	0.00391	0.00370	0.00366
	(!A * C * !D * Y)	-0.00152	-0.00153	-0.00151
	(!A * C * !D * Y)	0.00377	0.00377	0.00367
	(!A * !C * Y)	-0.00144	-0.00145	-0.00145
	(!A * !C * Y)	0.00382	0.00389	0.00372

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00217	-0.00220	-0.00222
	(A * C * !D * Y)	0.00400	0.00405	0.00388
	(A * !C * Y)	-0.00222	-0.00226	-0.00228
	(A * !C * Y)	0.00400	0.00407	0.00388
	(!A * C * D * Y)	-0.00476	-0.00542	-0.00542
	(!A * C * D * Y)	0.00439	0.00388	0.00383
	(!A * C * !D * Y)	-0.00288	-0.00289	-0.00288
	(!A * C * !D * Y)	0.00413	0.00402	0.00385
	(!A * !C * Y)	-0.00278	-0.00280	-0.00277
	(!A * !C * Y)	0.00419	0.00425	0.00394

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)**	0.00057	0.00058	0.00058
	(A * B * !D * Y)	-0.00186	-0.00188	-0.00186
	(A * !B * D * Y)	0.00131	0.00133	0.00131
	(A * !B * D * Y)	-0.00187	-0.00189	-0.00188
	(A * !B * !D * Y)	0.00068	0.00068	0.00068
	(A * !B * !D * Y)	-0.00188	-0.00189	-0.00188
	(!A * B * D * Y)	0.00127	0.00128	0.00127
	(!A * B * D * Y)	-0.00187	-0.00188	-0.00187
	(!A * B * !D * Y)	0.00069	0.00069	0.00068
	(!A * B * !D * Y)	-0.00188	-0.00189	-0.00188
	(!A * !B * D * Y)	0.00130	0.00132	0.00130
	(!A * !B * D * Y)	-0.00187	-0.00189	-0.00188
	(!A * !B * !D * Y)	0.00071	0.00071	0.00071
	(!A * !B * !D * Y)	-0.00188	-0.00189	-0.00189

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00129	0.00131	0.00129
	(A * B * !D * Y)	-0.00358	-0.00361	-0.00356
	(A * !B * D * Y)	0.00274	0.00277	0.00275
	(A * !B * D * Y)	-0.00364	-0.00366	-0.00365
	(A * !B * !D * Y)	0.00148	0.00149	0.00148
	(A * !B * !D * Y)	-0.00364	-0.00366	-0.00365
	(!A * B * D * Y)	0.00272	0.00273	0.00272
	(!A * B * D * Y)	-0.00365	-0.00366	-0.00365
	(!A * B * !D * Y)	0.00151	0.00152	0.00151
	(!A * B * !D * Y)	-0.00366	-0.00367	-0.00366
	(!A * !B * D * Y)	0.00273	0.00277	0.00274
	(!A * !B * D * Y)	-0.00365	-0.00367	-0.00365
	(!A * !B * !D * Y)	0.00154	0.00155	0.00155
	(!A * !B * !D * Y)	-0.00365	-0.00366	-0.00365
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00238	0.00239	0.00239
	(A * B * !D * Y)	-0.00363	-0.00363	-0.00360
	(A * !B * D * Y)	0.00533	0.00538	0.00535
	(A * !B * D * Y)	-0.00377	-0.00379	-0.00377
	(A * !B * !D * Y)	0.00275	0.00278	0.00277
	(A * !B * !D * Y)	-0.00376	-0.00378	-0.00378
	(!A * B * D * Y)	0.00523	0.00525	0.00524
	(!A * B * D * Y)	-0.00378	-0.00378	-0.00377
	(!A * B * !D * Y)	0.00282	0.00281	0.00279
	(!A * B * !D * Y)	-0.00380	-0.00381	-0.00379
	(!A * !B * D * Y)	0.00528	0.00533	0.00531
	(!A * !B * D * Y)	-0.00376	-0.00378	-0.00377
	(!A * !B * !D * Y)	0.00288	0.00290	0.00289
	(!A * !B * !D * Y)	-0.00377	-0.00378	-0.00378

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)	-0.00056	-0.00056	-0.00056
	(A * B * !D * Y)	0.00189	0.00193	0.00189
	(A * !B * D * Y)	-0.00124	-0.00131	-0.00131
	(A * !B * D * Y)	0.00187	0.00190	0.00188
	(A * !B * !D * Y)	-0.00068	-0.00068	-0.00068
	(A * !B * !D * Y)	0.00194	0.00197	0.00191
	(!A * B * D * Y)	-0.00116	-0.00128	-0.00127
	(!A * B * D * Y)	0.00188	0.00189	0.00188
	(!A * B * !D * Y)	-0.00069	-0.00069	-0.00068
	(!A * B * !D * Y)	0.00188	0.00191	0.00188
	(!A * !B * D * Y)	-0.00125	-0.00131	-0.00130
	(!A * !B * D * Y)	0.00187	0.00190	0.00188
	(!A * !B * !D * Y)	-0.00071	-0.00071	-0.00071
	(!A * !B * !D * Y)	0.00188	0.00191	0.00189
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00119	-0.00120	-0.00119
	(A * B * !D * Y)	0.00373	0.00376	0.00369
	(A * !B * D * Y)	-0.00259	-0.00277	-0.00275
	(A * !B * D * Y)	0.00365	0.00370	0.00366
	(A * !B * !D * Y)	-0.00148	-0.00149	-0.00148
	(A * !B * !D * Y)	0.00377	0.00377	0.00367
	(!A * B * D * Y)	-0.00243	-0.00272	-0.00272
	(!A * B * D * Y)	0.00369	0.00369	0.00366
	(!A * B * !D * Y)	-0.00151	-0.00152	-0.00151
	(!A * B * !D * Y)	0.00366	0.00374	0.00367
	(!A * !B * D * Y)	-0.00262	-0.00277	-0.00274
	(!A * !B * D * Y)	0.00365	0.00370	0.00366
	(!A * !B * !D * Y)	-0.00154	-0.00155	-0.00155
	(!A * !B * !D * Y)	0.00368	0.00370	0.00366

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00221	-0.00224	-0.00223
	(A * B * !D * Y)	0.00388	0.00392	0.00383
	(A * !B * D * Y)	-0.00501	-0.00538	-0.00535
	(A * !B * D * Y)	0.00380	0.00382	0.00378
	(A * !B * !D * Y)	-0.00275	-0.00278	-0.00277
	(A * !B * !D * Y)	0.00403	0.00404	0.00384
	(!A * B * D * Y)	-0.00463	-0.00525	-0.00524
	(!A * B * D * Y)	0.00384	0.00381	0.00378
	(!A * B * !D * Y)	-0.00282	-0.00281	-0.00279
	(!A * B * !D * Y)	0.00380	0.00386	0.00379
	(!A * !B * D * Y)	-0.00507	-0.00533	-0.00531
	(!A * !B * D * Y)	0.00380	0.00382	0.00378
	(!A * !B * !D * Y)	-0.00288	-0.00290	-0.00289
	(!A * !B * !D * Y)	0.00379	0.00383	0.00379

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)	0.00131	0.00132	0.00131
	(A * B * !C * Y)	-0.00195	-0.00196	-0.00195
	(A * !B * C * Y)	0.00129	0.00130	0.00129
	(A * !B * C * Y)	-0.00195	-0.00196	-0.00195
	(A * !B * !C * Y)	0.00131	0.00132	0.00131
	(A * !B * !C * Y)	-0.00195	-0.00196	-0.00195
	(!A * B * C * Y)	0.00128	0.00130	0.00128
	(!A * B * C * Y)	-0.00195	-0.00196	-0.00195
	(!A * !C * Y)	0.00131	0.00132	0.00131
	(!A * !C * Y)	-0.00195	-0.00196	-0.00195
	(!A * !B * C * Y)	0.00129	0.00129	0.00129
	(!A * !B * C * Y)	-0.00195	-0.00195	-0.00195

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00279	0.00282	0.00279
	(A * B * !C * Y)	-0.00360	-0.00362	-0.00360
	(A * !B * C * Y)	0.00270	0.00271	0.00270
	(A * !B * C * Y)	-0.00361	-0.00361	-0.00360
	(A * !B * !C * Y)	0.00279	0.00281	0.00279
	(A * !B * !C * Y)	-0.00360	-0.00362	-0.00360
	(!A * B * C * Y)	0.00267	0.00268	0.00267
	(!A * B * C * Y)	-0.00361	-0.00361	-0.00361
	(!A * !C * Y)	0.00279	0.00282	0.00278
	(!A * !C * Y)	-0.00360	-0.00363	-0.00361
	(!A * !B * C * Y)	0.00270	0.00271	0.00270
	(!A * !B * C * Y)	-0.00361	-0.00361	-0.00361
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00558	0.00562	0.00559
	(A * B * !C * Y)	-0.00384	-0.00386	-0.00385
	(A * !B * C * Y)	0.00540	0.00542	0.00539
	(A * !B * C * Y)	-0.00385	-0.00384	-0.00385
	(A * !B * !C * Y)	0.00557	0.00565	0.00559
	(A * !B * !C * Y)	-0.00384	-0.00387	-0.00385
	(!A * B * C * Y)	0.00533	0.00540	0.00535
	(!A * B * C * Y)	-0.00384	-0.00387	-0.00385
	(!A * !C * Y)	0.00557	0.00564	0.00559
	(!A * !C * Y)	-0.00384	-0.00387	-0.00385
	(!A * !B * C * Y)	0.00536	0.00542	0.00540
	(!A * !B * C * Y)	-0.00383	-0.00385	-0.00385

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)**	-0.00127	-0.00132	-0.00131
	(A * B * !C * Y)	0.00196	0.00198	0.00196
	(A * !B * C * Y)	-0.00121	-0.00130	-0.00129
	(A * !B * C * Y)	0.00195	0.00199	0.00196
	(A * !B * !C * Y)	-0.00128	-0.00132	-0.00131
	(A * !B * !C * Y)	0.00196	0.00198	0.00196
	(!A * B * C * Y)	-0.00119	-0.00130	-0.00128
	(!A * B * C * Y)	0.00196	0.00199	0.00196
	(!A * !C * Y)	-0.00128	-0.00132	-0.00131
	(!A * !C * Y)	0.00196	0.00198	0.00196
	(!A * !B * C * Y)	-0.00121	-0.00129	-0.00129
	(!A * !B * C * Y)	0.00195	0.00199	0.00196
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00264	-0.00280	-0.00279
	(A * B * !C * Y)	0.00360	0.00365	0.00361
	(A * !B * C * Y)	-0.00249	-0.00271	-0.00270
	(A * !B * C * Y)	0.00361	0.00361	0.00362
	(A * !B * !C * Y)	-0.00266	-0.00280	-0.00279
	(A * !B * !C * Y)	0.00360	0.00365	0.00361
	(!A * B * C * Y)	-0.00245	-0.00268	-0.00267
	(!A * B * C * Y)	0.00361	0.00366	0.00362
	(!A * !C * Y)	-0.00266	-0.00280	-0.00278
	(!A * !C * Y)	0.00360	0.00365	0.00361
	(!A * !B * C * Y)	-0.00249	-0.00271	-0.00270
	(!A * !B * C * Y)	0.00361	0.00361	0.00362

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00529	-0.00562	-0.00559
	(A * B * !C * Y)	0.00384	0.00390	0.00386
	(A * !B * C * Y)	-0.00500	-0.00542	-0.00539
	(A * !B * C * Y)	0.00386	0.00384	0.00386
	(A * !B * !C * Y)	-0.00534	-0.00563	-0.00559
	(A * !B * !C * Y)	0.00384	0.00390	0.00386
	(!A * B * C * Y)	-0.00493	-0.00540	-0.00535
	(!A * B * C * Y)	0.00386	0.00390	0.00386
	(!A * !C * Y)	-0.00533	-0.00563	-0.00559
	(!A * !C * Y)	0.00384	0.00390	0.00386
	(!A * !B * C * Y)	-0.00501	-0.00542	-0.00540
	(!A * !B * C * Y)	0.00386	0.00385	0.00386

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00274	0.00222	0.53922
sky130_fd_sc_hs__nor2b_2	0.00540	0.00257	0.96600
sky130_fd_sc_hs__nor2b_4	0.00891	0.00370	1.90223

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.17068	0.31582
sky130_fd_sc_hs__nor2b_2	0.00000	0.11635	0.18030
sky130_fd_sc_hs__nor2b_4	0.00000	0.37950	0.67727

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)	0.07355	0.96560	10.84280
	B_N->Y (RR)	0.08433	0.73614	6.58500
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.07126	0.83172	10.67640
	B_N->Y (RR)	0.07546	0.60775	6.40385
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.05573	0.69698	10.51940
	B_N->Y (RR)	0.07433	0.52241	6.69278

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.02004	0.33888	3.78080
	B_N->Y (FF)	0.07268	0.41862	3.00932
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01807	0.28342	3.59981
	B_N->Y (FF)	0.08083	0.43106	2.99930
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02607	0.37628	5.62636
	B_N->Y (FF)	0.08330	0.45677	4.03570

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00082	0.00078	0.00323
	A	0.00462	0.00458	0.00708
	B_N	0.00667	0.00740	0.02973
	B_N	0.00358	0.00431	0.02669
sky130_fd_sc_hs__nor2b_2	A	0.00172	0.00168	0.00682
	A	0.00933	0.00930	0.01454
	B_N	0.00963	0.01041	0.03509
	B_N	0.00660	0.00737	0.03222
sky130_fd_sc_hs__nor2b_4	A	0.00306	0.00305	0.00854
	A	0.01550	0.01557	0.02123
	B_N	0.01452	0.01578	0.05584
	B_N	0.01001	0.01131	0.05144

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00455	0.00461	0.00719
	A	0.00077	0.00081	0.00334
	B_N	0.00352	0.00497	0.02887
	B_N	0.00660	0.00803	0.03195
sky130_fd_sc_hs__nor2b_2	A	0.00885	0.00887	0.01426
	A	0.00130	0.00127	0.00660
	B_N	0.00614	0.00765	0.03013
	B_N	0.00918	0.01067	0.03317
sky130_fd_sc_hs__nor2b_4	A	0.01387	0.01373	0.02153
	A	0.00148	0.00127	0.00760
	B_N	0.00889	0.01176	0.05391
	B_N	0.01340	0.01617	0.05836

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00167	0.00146	0.00143
	(!B_N * !Y)	-0.00179	-0.00202	-0.00202
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00342	0.00299	0.00293
	(!B_N * !Y)	-0.00317	-0.00370	-0.00370
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00449	0.00365	0.00356
	(!B_N * !Y)	-0.00637	-0.00740	-0.00741

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00142	-0.00143	-0.00142
	(!B_N * !Y)	0.00201	0.00203	0.00202
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00291	-0.00293	-0.00291
	(!B_N * !Y)	0.00368	0.00373	0.00370
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00354	-0.00356	-0.00353
	(!B_N * !Y)	0.00738	0.00743	0.00742

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00411	0.00479	0.02884
	(A * !Y)	0.00075	0.00142	0.02549
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00537	0.00595	0.03049
	(A * !Y)	0.00159	0.00216	0.02672
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00828	0.00910	0.05077
	(A * !Y)	0.00263	0.00342	0.04514

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00132	0.00267	0.02715
	(A * !Y)	0.00468	0.00603	0.03051
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00281	0.00397	0.02890
	(A * !Y)	0.00658	0.00774	0.03266
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00335	0.00554	0.04852
	(A * !Y)	0.00896	0.01118	0.05413

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00275	0.00282	0.52940
sky130_fd_sc_hs__nor2_2	0.00436	0.00416	0.97250
sky130_fd_sc_hs__nor2_4	0.00834	0.00830	1.84469
sky130_fd_sc_hs__nor2_8	0.01627	0.01637	3.42161

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor2_1	0.00000	0.02240	0.05288
sky130_fd_sc_hs__nor2_2	0.00000	0.04170	0.10576
sky130_fd_sc_hs__nor2_4	0.00000	0.08340	0.21153
sky130_fd_sc_hs__nor2_8	0.00000	0.16680	0.42305

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)	0.07149	0.95774	10.71690
	B->Y (FR)	0.05679	0.94986	10.86620
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.05813	0.82347	10.71240
	B->Y (FR)	0.03598	0.80780	10.85450
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.05764	0.70949	10.61440
	B->Y (FR)	0.03545	0.70492	10.85230
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.05712	0.61646	10.50760
	B->Y (FR)	0.04023	0.63415	10.93200

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.02024	0.33653	3.73103
	B->Y (RF)	0.01789	0.32928	3.71631
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.02636	0.42807	5.53938
	B->Y (RF)	0.01997	0.41554	5.52658
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.02581	0.36597	5.42353
	B->Y (RF)	0.01923	0.34475	5.35455
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.02448	0.30896	5.22630
	B->Y (RF)	0.02617	0.29734	5.21423

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00049	-0.00053	0.00196
	A	0.00458	0.00455	0.00709
	B	-0.00062	-0.00013	0.00498
	B	0.00356	0.00405	0.00919
sky130_fd_sc_hs__nor2_2	A	-0.00089	-0.00091	0.00184
	A	0.00752	0.00753	0.01036
	B	-0.00074	0.00007	0.00604
	B	0.00533	0.00615	0.01212
sky130_fd_sc_hs__nor2_4	A	-0.00002	-0.00010	0.00568
	A	0.01630	0.01626	0.02222
	B	-0.00055	0.00060	0.01294
	B	0.01171	0.01289	0.02536
sky130_fd_sc_hs__nor2_8	A	-0.00079	-0.00081	0.01113
	A	0.03127	0.03139	0.04320
	B	-0.00212	0.00156	0.02644
	B	0.02211	0.02585	0.05093

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00570	0.00576	0.00835
	A	0.00069	0.00070	0.00329
	B	0.00403	0.00418	0.00680
	B	-0.00013	-0.00002	0.00251
sky130_fd_sc_hs__nor2_2	A	0.00967	0.00971	0.01300
	A	0.00135	0.00139	0.00442
	B	0.00469	0.00500	0.00950
	B	-0.00136	-0.00107	0.00217
sky130_fd_sc_hs__nor2_4	A	0.01839	0.01849	0.02518
	A	0.00226	0.00231	0.00853
	B	0.00934	0.01035	0.01658
	B	-0.00290	-0.00191	0.00431
sky130_fd_sc_hs__nor2_8	A	0.03504	0.03484	0.04812
	A	0.00330	0.00298	0.01649
	B	0.01846	0.01975	0.03692
	B	-0.00579	-0.00463	0.00941

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00177	0.00157	0.00154
	(B * !Y)	-0.00153	-0.00177	-0.00177
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00243	0.00198	0.00192
	(B * !Y)	-0.00298	-0.00354	-0.00354
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00423	0.00322	0.00312
	(B * !Y)	-0.00595	-0.00712	-0.00715
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00806	0.00619	0.00602
	(B * !Y)	-0.01195	-0.01423	-0.01421

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00153	-0.00154	-0.00153
	(B * !Y)	0.00176	0.00179	0.00177
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00193	-0.00193	-0.00192
	(B * !Y)	0.00354	0.00356	0.00354
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00310	-0.00311	-0.00308
	(B * !Y)	0.00711	0.00719	0.00715
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00599	-0.00600	-0.00595
	(B * !Y)	0.01417	0.01423	0.01421

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00174	0.00176	0.00173
	(A * !Y)	-0.00086	-0.00087	-0.00085
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00191	0.00194	0.00191
	(A * !Y)	-0.00173	-0.00176	-0.00173
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00385	0.00392	0.00386
	(A * !Y)	-0.00342	-0.00349	-0.00343
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00758	0.00771	0.00760
	(A * !Y)	-0.00679	-0.00690	-0.00679

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00168	-0.00169	-0.00173
	(A * !Y)	0.00091	0.00091	0.00087
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00173	-0.00176	-0.00189
	(A * !Y)	0.00189	0.00190	0.00177
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00353	-0.00357	-0.00382
	(A * !Y)	0.00371	0.00373	0.00350
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00699	-0.00704	-0.00754
	(A * !Y)	0.00728	0.00729	0.00693

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00270	0.00281	0.00216	0.35672
sky130_fd_sc_hs__nor3b_2	0.00529	0.00527	0.00257	0.63261
sky130_fd_sc_hs__nor3b_4	0.01061	0.01054	0.00362	1.11126

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	0.16329	0.31582
sky130_fd_sc_hs__nor3b_2	0.00000	0.10157	0.18030
sky130_fd_sc_hs__nor3b_4	0.00000	0.35613	0.67727

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)	0.13911	1.11284	10.44500
	B->Y (FR)	0.12624	1.12487	10.96770
	C_N->Y (RR)	0.11512	0.88574	6.76499
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.13251	0.94192	10.10980
	B->Y (FR)	0.11750	0.96119	10.78430
	C_N->Y (RR)	0.09567	0.71963	6.53019
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.13583	0.81766	9.89644
	B->Y (FR)	0.12125	0.83984	10.61990
	C_N->Y (RR)	0.11621	0.67209	6.88027

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.02125	0.30202	2.84120
	B->Y (RF)	0.02273	0.30435	2.91503
	C_N->Y (FF)	0.07511	0.39317	2.54306
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01783	0.24543	2.59424
	B->Y (RF)	0.01845	0.23619	2.56358
	C_N->Y (FF)	0.08230	0.40774	2.55040
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01753	0.20986	2.49266
	B->Y (RF)	0.01814	0.20064	2.46717
	C_N->Y (FF)	0.09005	0.39734	2.36829

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00165	0.00154	0.00406
	A	0.00638	0.00628	0.00882
	B	0.00148	0.00137	0.00419
	B	0.00552	0.00536	0.00824
	C_N	0.00713	0.00781	0.03022
	C_N	0.00449	0.00517	0.02760
sky130_fd_sc_hs__nor3b_2	A	0.00255	0.00236	0.00741
	A	0.01250	0.01234	0.01739
	B	0.00254	0.00239	0.00810
	B	0.01047	0.01036	0.01611
	C_N	0.01037	0.01109	0.03594
	C_N	0.00790	0.00860	0.03354
sky130_fd_sc_hs__nor3b_4	A	0.00473	0.00436	0.01525
	A	0.02476	0.02442	0.03526
	B	0.00490	0.00453	0.01631
	B	0.02099	0.02065	0.03252
	C_N	0.01863	0.01976	0.06009
	C_N	0.01567	0.01682	0.05718

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00640	0.00636	0.00936
	A	0.00172	0.00166	0.00470
	B	0.00492	0.00497	0.00786
	B	0.00091	0.00092	0.00383
	C_N	0.00382	0.00526	0.02905
	C_N	0.00644	0.00787	0.03167
sky130_fd_sc_hs__nor3b_2	A	0.01294	0.01285	0.01911
	A	0.00317	0.00303	0.00935
	B	0.00937	0.00942	0.01549
	B	0.00147	0.00147	0.00758
	C_N	0.00680	0.00828	0.03097
	C_N	0.00928	0.01076	0.03344
sky130_fd_sc_hs__nor3b_4	A	0.02548	0.02524	0.03791
	A	0.00581	0.00554	0.01824
	B	0.01850	0.01854	0.03076
	B	0.00252	0.00249	0.01476
	C_N	0.01475	0.01731	0.05946
	C_N	0.01769	0.02024	0.06239

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)	0.00150	0.00146	0.00144
	(B * C_N * !Y)	-0.00163	-0.00173	-0.00173
	(B * !C_N * !Y)	0.00138	0.00140	0.00138
	(B * !C_N * !Y)	-0.00175	-0.00179	-0.00178
	(!B * !C_N * !Y)	0.00141	0.00139	0.00138
	(!B * !C_N * !Y)	-0.00161	-0.00174	-0.00173
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00300	0.00294	0.00290
	(B * C_N * !Y)	-0.00341	-0.00360	-0.00358
	(B * !C_N * !Y)	0.00293	0.00294	0.00290
	(B * !C_N * !Y)	-0.00350	-0.00360	-0.00358
	(!B * !C_N * !Y)	0.00297	0.00294	0.00291
	(!B * !C_N * !Y)	-0.00325	-0.00350	-0.00348
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00636	0.00628	0.00619
	(B * C_N * !Y)	-0.00647	-0.00691	-0.00686
	(B * !C_N * !Y)	0.00579	0.00585	0.00577
	(B * !C_N * !Y)	-0.00711	-0.00724	-0.00728
	(!B * !C_N * !Y)	0.00590	0.00584	0.00577
	(!B * !C_N * !Y)	-0.00666	-0.00714	-0.00710

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)	-0.00143	-0.00143	-0.00143
	(B * C_N * !Y)	0.00173	0.00173	0.00173
	(B * !C_N * !Y)	-0.00138	-0.00138	-0.00138
	(B * !C_N * !Y)	0.00178	0.00179	0.00178
	(!B * !C_N * !Y)	-0.00137	-0.00138	-0.00137
	(!B * !C_N * !Y)	0.00173	0.00174	0.00173
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00290	-0.00290	-0.00289
	(B * C_N * !Y)	0.00359	0.00360	0.00358
	(B * !C_N * !Y)	-0.00290	-0.00291	-0.00290
	(B * !C_N * !Y)	0.00358	0.00360	0.00358
	(!B * !C_N * !Y)	-0.00290	-0.00291	-0.00290
	(!B * !C_N * !Y)	0.00347	0.00350	0.00348
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00619	-0.00621	-0.00618
	(B * C_N * !Y)	0.00686	0.00692	0.00686
	(B * !C_N * !Y)	-0.00577	-0.00575	-0.00576
	(B * !C_N * !Y)	0.00728	0.00724	0.00728
	(!B * !C_N * !Y)	-0.00575	-0.00577	-0.00575
	(!B * !C_N * !Y)	0.00708	0.00714	0.00710

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)	0.00168	0.00171	0.00168
	(A * C_N * !Y)	-0.00094	-0.00095	-0.00094
	(A * !C_N * !Y)	0.00155	0.00158	0.00149
	(A * !C_N * !Y)	-0.00137	-0.00137	-0.00137
	(!A * !C_N * !Y)	0.00173	0.00144	0.00144
	(!A * !C_N * !Y)	-0.00162	-0.00193	-0.00194
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00301	0.00304	0.00299
	(A * C_N * !Y)	-0.00200	-0.00201	-0.00199
	(A * !C_N * !Y)	0.00306	0.00315	0.00298
	(A * !C_N * !Y)	-0.00246	-0.00246	-0.00246
	(!A * !C_N * !Y)	0.00354	0.00289	0.00288
	(!A * !C_N * !Y)	-0.00303	-0.00365	-0.00367
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00611	0.00619	0.00605
	(A * C_N * !Y)	-0.00395	-0.00398	-0.00394
	(A * !C_N * !Y)	0.00628	0.00639	0.00600
	(A * !C_N * !Y)	-0.00493	-0.00492	-0.00492
	(!A * !C_N * !Y)	0.00714	0.00588	0.00579
	(!A * !C_N * !Y)	-0.00587	-0.00729	-0.00733

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)	-0.00165	-0.00166	-0.00165
	(A * C_N * !Y)	0.00096	0.00097	0.00097
	(A * !C_N * !Y)	-0.00144	-0.00144	-0.00143
	(A * !C_N * !Y)	0.00137	0.00137	0.00137
	(!A * !C_N * !Y)	-0.00143	-0.00144	-0.00143
	(!A * !C_N * !Y)	0.00193	0.00196	0.00195
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00292	-0.00295	-0.00293
	(A * C_N * !Y)	0.00202	0.00205	0.00206
	(A * !C_N * !Y)	-0.00289	-0.00289	-0.00290
	(A * !C_N * !Y)	0.00246	0.00246	0.00246
	(!A * !C_N * !Y)	-0.00286	-0.00289	-0.00286
	(!A * !C_N * !Y)	0.00365	0.00370	0.00367
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00598	-0.00601	-0.00595
	(A * C_N * !Y)	0.00400	0.00404	0.00408
	(A * !C_N * !Y)	-0.00581	-0.00580	-0.00581
	(A * !C_N * !Y)	0.00493	0.00492	0.00492
	(!A * !C_N * !Y)	-0.00577	-0.00574	-0.00574
	(!A * !C_N * !Y)	0.00733	0.00729	0.00735

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00404	0.00472	0.02871
	(B * !Y)	0.00081	0.00150	0.02549
	(A * !B * !Y)	0.00412	0.00480	0.02876
	(A * !B * !Y)	0.00084	0.00151	0.02550
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00533	0.00592	0.03049
	(B * !Y)	0.00161	0.00218	0.02678
	(A * !B * !Y)	0.00551	0.00611	0.03062
	(A * !B * !Y)	0.00168	0.00225	0.02681
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00861	0.00931	0.04977
	(B * !Y)	0.00300	0.00367	0.04415
	(A * !B * !Y)	0.00895	0.00965	0.05001
	(A * !B * !Y)	0.00311	0.00378	0.04420

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00137	0.00271	0.02713
	(B * !Y)	0.00459	0.00593	0.03034
	(A * !B * !Y)	0.00137	0.00271	0.02712
	(A * !B * !Y)	0.00459	0.00594	0.03034
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00278	0.00394	0.02889
	(B * !Y)	0.00649	0.00766	0.03260
	(A * !B * !Y)	0.00278	0.00394	0.02889
	(A * !B * !Y)	0.00650	0.00767	0.03261
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00663	0.00869	0.05112
	(B * !Y)	0.01222	0.01429	0.05671
	(A * !B * !Y)	0.00664	0.00869	0.05112
	(A * !B * !Y)	0.01225	0.01432	0.05673

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00279	0.00302	0.00287	0.34836
sky130_fd_sc_hs__nor3_2	0.00432	0.00453	0.00421	0.67951
sky130_fd_sc_hs__nor3_4	0.00946	0.00932	0.00899	1.12144

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3_1	0.00000	0.01501	0.05288
sky130_fd_sc_hs__nor3_2	0.00000	0.02770	0.10576
sky130_fd_sc_hs__nor3_4	0.00000	0.05539	0.21153

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)	0.14125	1.09679	10.21250
	B->Y (FR)	0.13014	1.11266	10.73570
	C->Y (FR)	0.09347	1.07230	10.69880
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.11175	0.92836	10.35400
	B->Y (FR)	0.09613	0.93634	10.84600
	C->Y (FR)	0.04917	0.88383	10.79930
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.12370	0.81427	9.91168
	B->Y (FR)	0.10232	0.81537	10.46350
	C->Y (FR)	0.05579	0.77655	10.51550

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.02205	0.30021	2.78824
	B->Y (RF)	0.02384	0.30116	2.84600
	C->Y (RF)	0.02052	0.29244	2.84345
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.03031	0.39821	4.44932
	B->Y (RF)	0.02979	0.38468	4.40478
	C->Y (RF)	0.02198	0.36704	4.38893
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.02398	0.32974	3.98207
	B->Y (RF)	0.02702	0.32187	4.02689
	C->Y (RF)	0.02821	0.30725	4.00738

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00007	-0.00007	0.00255
	A	0.00662	0.00650	0.00912
	B	0.00012	-0.00001	0.00284
	B	0.00576	0.00562	0.00851
	C	0.00003	0.00040	0.00603
	C	0.00474	0.00512	0.01077
sky130_fd_sc_hs__nor3_2	A	-0.00005	-0.00015	0.00253
	A	0.01051	0.01042	0.01314
	B	0.00021	0.00013	0.00322
	B	0.00892	0.00886	0.01200
	C	0.00012	0.00054	0.00777
	C	0.00653	0.00675	0.01425
sky130_fd_sc_hs__nor3_4	A	-0.00041	-0.00068	0.00516
	A	0.02221	0.02201	0.02783
	B	-0.00039	-0.00066	0.00679
	B	0.01771	0.01748	0.02502
	C	-0.00108	0.00004	0.01593
	C	0.01334	0.01448	0.03049

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00820	0.00814	0.01120
	A	0.00174	0.00166	0.00475
	B	0.00658	0.00659	0.00952
	B	0.00098	0.00097	0.00393
	C	0.00461	0.00478	0.00769
	C	-0.00009	0.00008	0.00298
sky130_fd_sc_hs__nor3_2	A	0.01369	0.01346	0.01719
	A	0.00335	0.00312	0.00686
	B	0.01017	0.01006	0.01376
	B	0.00159	0.00142	0.00516
	C	0.00514	0.00548	0.00941
	C	-0.00124	-0.00094	0.00282
sky130_fd_sc_hs__nor3_4	A	0.02907	0.02828	0.03630
	A	0.00692	0.00613	0.01379
	B	0.02089	0.02055	0.02929
	B	0.00293	0.00255	0.01082
	C	0.01178	0.01246	0.02153
	C	-0.00265	-0.00203	0.00667

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00158	0.00160	0.00158
	(B * C * !Y)	-0.00172	-0.00177	-0.00175
	(B * !C * !Y)	0.00162	0.00160	0.00158
	(B * !C * !Y)	-0.00166	-0.00175	-0.00175
	(!B * C * !Y)	0.00161	0.00159	0.00158
	(!B * C * !Y)	-0.00156	-0.00171	-0.00170
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00185	0.00186	0.00184
	(B * C * !Y)	-0.00335	-0.00347	-0.00345
	(B * !C * !Y)	0.00190	0.00187	0.00184
	(B * !C * !Y)	-0.00326	-0.00348	-0.00345
	(!B * C * !Y)	0.00191	0.00187	0.00184
	(!B * C * !Y)	-0.00304	-0.00332	-0.00333
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00353	0.00357	0.00352
	(B * C * !Y)	-0.00715	-0.00737	-0.00735
	(B * !C * !Y)	0.00384	0.00358	0.00353
	(B * !C * !Y)	-0.00679	-0.00734	-0.00736
	(!B * C * !Y)	0.00375	0.00352	0.00352
	(!B * C * !Y)	-0.00640	-0.00716	-0.00710

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00158	-0.00158	-0.00158
	(B * C * !Y)	0.00176	0.00177	0.00175
	(B * !C * !Y)	-0.00158	-0.00157	-0.00158
	(B * !C * !Y)	0.00176	0.00175	0.00175
	(!B * C * !Y)	-0.00157	-0.00158	-0.00157
	(!B * C * !Y)	0.00169	0.00171	0.00170
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00183	-0.00185	-0.00184
	(B * C * !Y)	0.00343	0.00347	0.00345
	(B * !C * !Y)	-0.00183	-0.00185	-0.00184
	(B * !C * !Y)	0.00343	0.00348	0.00345
	(!B * C * !Y)	-0.00183	-0.00184	-0.00184
	(!B * C * !Y)	0.00330	0.00332	0.00333
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00352	-0.00353	-0.00352
	(B * C * !Y)	0.00734	0.00737	0.00735
	(B * !C * !Y)	-0.00351	-0.00351	-0.00352
	(B * !C * !Y)	0.00731	0.00734	0.00736
	(!B * C * !Y)	-0.00350	-0.00352	-0.00350
	(!B * C * !Y)	0.00707	0.00716	0.00710

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00175	0.00178	0.00168
	(A * C * !Y)	-0.00110	-0.00110	-0.00109
	(A * !C * !Y)	0.00164	0.00167	0.00163
	(A * !C * !Y)	-0.00092	-0.00093	-0.00092
	(!A * C * !Y)	0.00193	0.00163	0.00163
	(!A * C * !Y)	-0.00136	-0.00168	-0.00170
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00187	0.00192	0.00173
	(A * C * !Y)	-0.00239	-0.00242	-0.00239
	(A * !C * !Y)	0.00168	0.00170	0.00163
	(A * !C * !Y)	-0.00203	-0.00205	-0.00206
	(!A * C * !Y)	0.00231	0.00165	0.00161
	(!A * C * !Y)	-0.00290	-0.00364	-0.00366
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00416	0.00423	0.00392
	(A * C * !Y)	-0.00451	-0.00455	-0.00454
	(A * !C * !Y)	0.00381	0.00388	0.00380
	(A * !C * !Y)	-0.00373	-0.00381	-0.00376
	(!A * C * !Y)	0.00502	0.00386	0.00379
	(!A * C * !Y)	-0.00559	-0.00686	-0.00688

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00163	-0.00163	-0.00163
	(A * C * !Y)	0.00110	0.00110	0.00109
	(A * !C * !Y)	-0.00161	-0.00162	-0.00161
	(A * !C * !Y)	0.00094	0.00095	0.00095
	(!A * C * !Y)	-0.00161	-0.00162	-0.00162
	(!A * C * !Y)	0.00168	0.00170	0.00170
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00163	-0.00164	-0.00163
	(A * C * !Y)	0.00239	0.00242	0.00239
	(A * !C * !Y)	-0.00160	-0.00161	-0.00157
	(A * !C * !Y)	0.00211	0.00212	0.00212
	(!A * C * !Y)	-0.00160	-0.00161	-0.00159
	(!A * C * !Y)	0.00363	0.00366	0.00366
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00377	-0.00380	-0.00379
	(A * C * !Y)	0.00451	0.00455	0.00454
	(A * !C * !Y)	-0.00372	-0.00374	-0.00367
	(A * !C * !Y)	0.00385	0.00387	0.00389
	(!A * C * !Y)	-0.00377	-0.00377	-0.00375
	(!A * C * !Y)	0.00687	0.00688	0.00688

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00170	0.00173	0.00171
	(B * !Y)	-0.00086	-0.00087	-0.00086
	(A * !B * !Y)	0.00170	0.00174	0.00171
	(A * !B * !Y)	-0.00085	-0.00087	-0.00085
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00189	0.00192	0.00189
	(B * !Y)	-0.00172	-0.00175	-0.00172
	(A * !B * !Y)	0.00189	0.00192	0.00189
	(A * !B * !Y)	-0.00171	-0.00174	-0.00171
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00425	0.00430	0.00427
	(B * !Y)	-0.00352	-0.00356	-0.00354
	(A * !B * !Y)	0.00425	0.00430	0.00427
	(A * !B * !Y)	-0.00350	-0.00355	-0.00352

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00165	-0.00166	-0.00170
	(B * !Y)	0.00091	0.00091	0.00087
	(A * !B * !Y)	-0.00157	-0.00159	-0.00169
	(A * !B * !Y)	0.00094	0.00095	0.00087
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00171	-0.00173	-0.00187
	(B * !Y)	0.00188	0.00188	0.00176
	(A * !B * !Y)	-0.00155	-0.00158	-0.00184
	(A * !B * !Y)	0.00195	0.00196	0.00176
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00394	-0.00400	-0.00423
	(B * !Y)	0.00379	0.00383	0.00361
	(A * !B * !Y)	-0.00357	-0.00363	-0.00416
	(A * !B * !Y)	0.00396	0.00400	0.00360

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00283	0.00290	0.00229	0.00226	0.26113
sky130_fd_sc_hs__nor4bb_2	0.00528	0.00553	0.00265	0.00253	0.45045
sky130_fd_sc_hs__nor4bb_4	0.01043	0.01111	0.00367	0.00358	0.85890

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	0.30613	0.61078
sky130_fd_sc_hs__nor4bb_2	0.00000	0.16226	0.31888
sky130_fd_sc_hs__nor4bb_4	0.00000	0.63050	1.27111

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)	0.22922	1.26793	10.03950
	B->Y (FR)	0.21721	1.26665	10.44390
	C_N->Y (RR)	0.21415	1.07904	6.80963
	D_N->Y (RR)	0.14063	0.99317	6.69124
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.23196	1.11649	9.85943
	B->Y (FR)	0.21444	1.09947	10.24510
	C_N->Y (RR)	0.20858	0.92701	6.74133
	D_N->Y (RR)	0.12355	0.83244	6.62288
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.23287	0.96762	9.83223
	B->Y (FR)	0.21564	0.95895	10.25800
	C_N->Y (RR)	0.20898	0.81920	7.05926
	D_N->Y (RR)	0.13046	0.73554	6.96895

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.02240	0.28121	2.26564
	B->Y (RF)	0.02298	0.27388	2.22761
	C_N->Y (FF)	0.09223	0.40243	2.31545
	D_N->Y (FF)	0.07784	0.37623	2.22666
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.01883	0.22789	2.00580
	B->Y (RF)	0.01973	0.22435	2.01414
	C_N->Y (FF)	0.09649	0.41444	2.43165
	D_N->Y (FF)	0.08331	0.39732	2.40206
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.01984	0.21330	2.14786
	B->Y (RF)	0.02028	0.20023	2.04435
	C_N->Y (FF)	0.09914	0.39275	2.14846
	D_N->Y (FF)	0.09173	0.38558	2.16671

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00316	0.00300	0.00546
	A	0.00828	0.00813	0.01059
	B	0.00311	0.00295	0.00561
	B	0.00740	0.00724	0.00989
	C_N	0.00950	0.01001	0.03249
	C_N	0.00679	0.00729	0.02992
	D_N	0.00776	0.00837	0.03257
	D_N	0.00535	0.00594	0.03017
sky130_fd_sc_hs__nor4bb_2	A	0.00587	0.00562	0.01025
	A	0.01592	0.01567	0.02023
	B	0.00581	0.00553	0.01088
	B	0.01406	0.01379	0.01915
	C_N	0.01406	0.01463	0.03926
	C_N	0.01163	0.01221	0.03685
	D_N	0.01164	0.01230	0.03737
	D_N	0.00949	0.01015	0.03524
sky130_fd_sc_hs__nor4bb_4	A	0.01208	0.01149	0.02135
	A	0.03158	0.03103	0.04064
	B	0.01184	0.01126	0.02205
	B	0.02822	0.02772	0.03850
	C_N	0.02558	0.02624	0.06654
	C_N	0.02280	0.02346	0.06378
	D_N	0.02060	0.02158	0.06318
	D_N	0.01801	0.01899	0.06067

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00766	0.00755	0.01093
	A	0.00263	0.00250	0.00591
	B	0.00614	0.00609	0.00941
	B	0.00188	0.00181	0.00514
	C_N	0.00570	0.00692	0.03050
	C_N	0.00840	0.00962	0.03320
	D_N	0.00409	0.00551	0.02879
	D_N	0.00651	0.00793	0.03119
sky130_fd_sc_hs__nor4bb_2	A	0.01541	0.01512	0.02192
	A	0.00560	0.00528	0.01214
	B	0.01143	0.01136	0.01814
	B	0.00323	0.00315	0.00993
	C_N	0.01051	0.01159	0.03604
	C_N	0.01295	0.01401	0.03846
	D_N	0.00716	0.00864	0.03336
	D_N	0.00931	0.01079	0.03550
sky130_fd_sc_hs__nor4bb_4	A	0.02953	0.02903	0.04307
	A	0.01050	0.00993	0.02409
	B	0.02306	0.02279	0.03690
	B	0.00681	0.00645	0.02065
	C_N	0.01930	0.02133	0.06066
	C_N	0.02206	0.02411	0.06341
	D_N	0.01489	0.01758	0.06004
	D_N	0.01746	0.02017	0.06260

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)**	0.00167	0.00165	0.00163
	(B * C_N * D_N * !Y)	-0.00166	-0.00174	-0.00173
	(B * !D_N * !Y)	0.00166	0.00165	0.00163
	(B * !D_N * !Y)	-0.00167	-0.00174	-0.00173
	(B * !C_N * D_N * !Y)	0.00151	0.00153	0.00151
	(B * !C_N * D_N * !Y)	-0.00182	-0.00186	-0.00185
	(!B * C_N * !D_N * !Y)	0.00173	0.00168	0.00165
	(!B * C_N * !D_N * !Y)	-0.00154	-0.00166	-0.00165
	(!B * !C_N * D_N * !Y)	0.00151	0.00152	0.00151
	(!B * !C_N * D_N * !Y)	-0.00169	-0.00181	-0.00180
	(!B * !C_N * !D_N * !Y)	0.00150	0.00152	0.00150
	(!B * !C_N * !D_N * !Y)	-0.00169	-0.00181	-0.00180
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00295	0.00292	0.00288
	(B * C_N * D_N * !Y)	-0.00339	-0.00359	-0.00357
	(B * !D_N * !Y)	0.00294	0.00292	0.00288
	(B * !D_N * !Y)	-0.00341	-0.00359	-0.00356
	(B * !C_N * D_N * !Y)	0.00288	0.00291	0.00288
	(B * !C_N * D_N * !Y)	-0.00345	-0.00360	-0.00357
	(!B * C_N * !D_N * !Y)	0.00313	0.00300	0.00293
	(!B * C_N * !D_N * !Y)	-0.00317	-0.00341	-0.00339
	(!B * !C_N * D_N * !Y)	0.00289	0.00291	0.00288
	(!B * !C_N * D_N * !Y)	-0.00322	-0.00348	-0.00345
	(!B * !C_N * !D_N * !Y)	0.00289	0.00291	0.00288
	(!B * !C_N * !D_N * !Y)	-0.00323	-0.00348	-0.00345

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00577	0.00569	0.00561
	(B * C_N * D_N * !Y)	-0.00657	-0.00690	-0.00691
	(B * !D_N * !Y)	0.00579	0.00570	0.00562
	(B * !D_N * !Y)	-0.00662	-0.00691	-0.00689
	(B * !C_N * D_N * !Y)	0.00562	0.00567	0.00560
	(B * !C_N * D_N * !Y)	-0.00674	-0.00693	-0.00691
	(!B * C_N * !D_N * !Y)	0.00606	0.00584	0.00569
	(!B * C_N * !D_N * !Y)	-0.00604	-0.00658	-0.00655
	(!B * !C_N * D_N * !Y)	0.00562	0.00567	0.00560
	(!B * !C_N * D_N * !Y)	-0.00624	-0.00673	-0.00668
	(!B * !C_N * !D_N * !Y)	0.00561	0.00566	0.00559
	(!B * !C_N * !D_N * !Y)	-0.00625	-0.00673	-0.00667

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)**	-0.00162	-0.00162	-0.00162
	(B * C_N * D_N * !Y)	0.00174	0.00175	0.00174
	(B * !D_N * !Y)	-0.00162	-0.00163	-0.00162
	(B * !D_N * !Y)	0.00174	0.00174	0.00173
	(B * !C_N * D_N * !Y)	-0.00150	-0.00150	-0.00150
	(B * !C_N * D_N * !Y)	0.00186	0.00186	0.00185
	(!B * C_N * !D_N * !Y)	-0.00167	-0.00168	-0.00165
	(!B * C_N * !D_N * !Y)	0.00165	0.00166	0.00165
	(!B * !C_N * D_N * !Y)	-0.00150	-0.00151	-0.00150
	(!B * !C_N * D_N * !Y)	0.00180	0.00181	0.00180
	(!B * !C_N * !D_N * !Y)	-0.00150	-0.00151	-0.00150
	(!B * !C_N * !D_N * !Y)	0.00180	0.00181	0.00180

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00285	-0.00288	-0.00287
	(B * C_N * D_N * !Y)	0.00354	0.00360	0.00357
	(B * !D_N * !Y)	-0.00288	-0.00289	-0.00287
	(B * !D_N * !Y)	0.00357	0.00360	0.00356
	(B * !C_N * D_N * !Y)	-0.00287	-0.00289	-0.00287
	(B * !C_N * D_N * !Y)	0.00357	0.00360	0.00357
	(!B * C_N * !D_N * !Y)	-0.00298	-0.00300	-0.00293
	(!B * C_N * !D_N * !Y)	0.00338	0.00341	0.00339
	(!B * !C_N * D_N * !Y)	-0.00287	-0.00288	-0.00287
	(!B * !C_N * D_N * !Y)	0.00346	0.00348	0.00345
	(!B * !C_N * !D_N * !Y)	-0.00287	-0.00288	-0.00287
	(!B * !C_N * !D_N * !Y)	0.00346	0.00348	0.00345
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00556	-0.00557	-0.00558
	(B * C_N * D_N * !Y)	0.00687	0.00690	0.00691
	(B * !D_N * !Y)	-0.00558	-0.00561	-0.00560
	(B * !D_N * !Y)	0.00684	0.00691	0.00689
	(B * !C_N * D_N * !Y)	-0.00555	-0.00558	-0.00557
	(B * !C_N * D_N * !Y)	0.00686	0.00693	0.00691
	(!B * C_N * !D_N * !Y)	-0.00580	-0.00583	-0.00569
	(!B * C_N * !D_N * !Y)	0.00653	0.00658	0.00655
	(!B * !C_N * D_N * !Y)	-0.00556	-0.00560	-0.00558
	(!B * !C_N * D_N * !Y)	0.00665	0.00673	0.00668
	(!B * !C_N * !D_N * !Y)	-0.00556	-0.00560	-0.00558
	(!B * !C_N * !D_N * !Y)	0.00664	0.00673	0.00667

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)**	0.00174	0.00177	0.00175
	(A * C_N * D_N * !Y)	-0.00093	-0.00095	-0.00093
	(A * C_N * !D_N * !Y)	0.00194	0.00200	0.00200
	(A * C_N * !D_N * !Y)	-0.00113	-0.00113	-0.00113
	(A * !C_N * D_N * !Y)	0.00162	0.00165	0.00159
	(A * !C_N * D_N * !Y)	-0.00132	-0.00132	-0.00132
	(A * !C_N * !D_N * !Y)	0.00158	0.00159	0.00157
	(A * !C_N * !D_N * !Y)	-0.00139	-0.00139	-0.00138
	(!A * C_N * !D_N * !Y)	0.00196	0.00180	0.00175
	(!A * C_N * !D_N * !Y)	-0.00149	-0.00165	-0.00164
	(!A * !C_N * D_N * !Y)	0.00167	0.00156	0.00157
	(!A * !C_N * D_N * !Y)	-0.00178	-0.00186	-0.00187
	(!A * !C_N * !D_N * !Y)	0.00156	0.00156	0.00157
	(!A * !C_N * !D_N * !Y)	-0.00184	-0.00187	-0.00187
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00312	0.00316	0.00310
	(A * C_N * D_N * !Y)	-0.00209	-0.00210	-0.00207
	(A * C_N * !D_N * !Y)	0.00345	0.00359	0.00359
	(A * C_N * !D_N * !Y)	-0.00248	-0.00249	-0.00247
	(A * !C_N * D_N * !Y)	0.00308	0.00312	0.00303
	(A * !C_N * D_N * !Y)	-0.00262	-0.00262	-0.00261
	(A * !C_N * !D_N * !Y)	0.00302	0.00305	0.00301
	(A * !C_N * !D_N * !Y)	-0.00273	-0.00274	-0.00272
	(!A * C_N * !D_N * !Y)	0.00346	0.00320	0.00312
	(!A * C_N * !D_N * !Y)	-0.00326	-0.00354	-0.00352
	(!A * !C_N * D_N * !Y)	0.00315	0.00302	0.00300
	(!A * !C_N * D_N * !Y)	-0.00354	-0.00375	-0.00375
	(!A * !C_N * !D_N * !Y)	0.00299	0.00302	0.00300
	(!A * !C_N * !D_N * !Y)	-0.00368	-0.00376	-0.00374

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00600	0.00613	0.00601
	(A * C_N * D_N * !Y)	-0.00409	-0.00417	-0.00410
	(A * C_N * !D_N * !Y)	0.00679	0.00707	0.00703
	(A * C_N * !D_N * !Y)	-0.00480	-0.00481	-0.00482
	(A * !C_N * D_N * !Y)	0.00595	0.00598	0.00583
	(A * !C_N * D_N * !Y)	-0.00511	-0.00517	-0.00513
	(A * !C_N * !D_N * !Y)	0.00578	0.00579	0.00577
	(A * !C_N * !D_N * !Y)	-0.00540	-0.00547	-0.00542
	(!A * C_N * !D_N * !Y)	0.00690	0.00625	0.00605
	(!A * C_N * !D_N * !Y)	-0.00629	-0.00691	-0.00692
	(!A * !C_N * D_N * !Y)	0.00621	0.00584	0.00577
	(!A * !C_N * D_N * !Y)	-0.00684	-0.00743	-0.00741
	(!A * !C_N * !D_N * !Y)	0.00579	0.00582	0.00576
	(!A * !C_N * !D_N * !Y)	-0.00734	-0.00744	-0.00741

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)**	-0.00170	-0.00172	-0.00171
	(A * C_N * D_N * !Y)	0.00096	0.00097	0.00097
	(A * C_N * !D_N * !Y)	-0.00189	-0.00190	-0.00189
	(A * C_N * !D_N * !Y)	0.00113	0.00113	0.00113
	(A * !C_N * D_N * !Y)	-0.00157	-0.00157	-0.00157
	(A * !C_N * D_N * !Y)	0.00132	0.00132	0.00132
	(A * !C_N * !D_N * !Y)	-0.00157	-0.00158	-0.00157
	(A * !C_N * !D_N * !Y)	0.00139	0.00139	0.00138
	(!A * C_N * !D_N * !Y)	-0.00180	-0.00180	-0.00175
	(!A * C_N * !D_N * !Y)	0.00163	0.00165	0.00164
	(!A * !C_N * D_N * !Y)	-0.00156	-0.00156	-0.00156
	(!A * !C_N * D_N * !Y)	0.00187	0.00189	0.00187
	(!A * !C_N * !D_N * !Y)	-0.00156	-0.00156	-0.00156
	(!A * !C_N * !D_N * !Y)	0.00186	0.00189	0.00187
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00298	-0.00301	-0.00301
	(A * C_N * D_N * !Y)	0.00217	0.00219	0.00219
	(A * C_N * !D_N * !Y)	-0.00341	-0.00342	-0.00341
	(A * C_N * !D_N * !Y)	0.00248	0.00249	0.00247
	(A * !C_N * D_N * !Y)	-0.00301	-0.00300	-0.00300
	(A * !C_N * D_N * !Y)	0.00262	0.00262	0.00261
	(A * !C_N * !D_N * !Y)	-0.00300	-0.00301	-0.00300
	(A * !C_N * !D_N * !Y)	0.00273	0.00274	0.00272
	(!A * C_N * !D_N * !Y)	-0.00323	-0.00320	-0.00312
	(!A * C_N * !D_N * !Y)	0.00351	0.00354	0.00352
	(!A * !C_N * D_N * !Y)	-0.00299	-0.00301	-0.00299
	(!A * !C_N * D_N * !Y)	0.00375	0.00377	0.00375
	(!A * !C_N * !D_N * !Y)	-0.00298	-0.00301	-0.00299
	(!A * !C_N * !D_N * !Y)	0.00372	0.00377	0.00374

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00591	-0.00592	-0.00590
	(A * C_N * D_N * !Y)	0.00421	0.00422	0.00424
	(A * C_N * !D_N * !Y)	-0.00663	-0.00664	-0.00665
	(A * C_N * !D_N * !Y)	0.00480	0.00481	0.00482
	(A * !C_N * D_N * !Y)	-0.00575	-0.00580	-0.00576
	(A * !C_N * D_N * !Y)	0.00511	0.00517	0.00513
	(A * !C_N * !D_N * !Y)	-0.00574	-0.00579	-0.00575
	(A * !C_N * !D_N * !Y)	0.00540	0.00547	0.00542
	(!A * C_N * !D_N * !Y)	-0.00630	-0.00625	-0.00605
	(!A * C_N * !D_N * !Y)	0.00693	0.00691	0.00692
	(!A * !C_N * D_N * !Y)	-0.00576	-0.00576	-0.00575
	(!A * !C_N * D_N * !Y)	0.00742	0.00743	0.00741
	(!A * !C_N * !D_N * !Y)	-0.00576	-0.00577	-0.00575
	(!A * !C_N * !D_N * !Y)	0.00741	0.00744	0.00741

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00463	0.00518	0.02879
	(B * !Y)	0.00115	0.00168	0.02530
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00470	0.00524	0.02882
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00115	0.00167	0.02526
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00532	0.00595	0.03036
	(B * !Y)	0.00156	0.00216	0.02659
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00551	0.00613	0.03046
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00160	0.00220	0.02657
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00851	0.00916	0.04976
	(B * !Y)	0.00316	0.00379	0.04442
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00875	0.00939	0.04991
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00313	0.00376	0.04434

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00180	0.00305	0.02715
	(B * !Y)	0.00527	0.00653	0.03064
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00180	0.00305	0.02715
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00528	0.00654	0.03064
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00332	0.00443	0.02931
	(B * !Y)	0.00706	0.00820	0.03305
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00332	0.00443	0.02931
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00708	0.00821	0.03306
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00604	0.00808	0.05036
	(B * !Y)	0.01131	0.01339	0.05565
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00608	0.00812	0.05038
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01136	0.01344	0.05569

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)	0.00412	0.00474	0.02871
	(B * C_N * !Y)	0.00093	0.00154	0.02553
	(A * !B * C_N * !Y)	0.00422	0.00483	0.02878
	(A * !B * C_N * !Y)	0.00098	0.00159	0.02557
	(!C_N * !Y)	0.00439	0.00501	0.02900
	(!C_N * !Y)	0.00120	0.00182	0.02582
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00517	0.00569	0.03030
	(B * C_N * !Y)	0.00171	0.00220	0.02682
	(A * !B * C_N * !Y)	0.00545	0.00595	0.03050
	(A * !B * C_N * !Y)	0.00186	0.00236	0.02693
	(!C_N * !Y)	0.00547	0.00597	0.03062
	(!C_N * !Y)	0.00203	0.00254	0.02717
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00797	0.00862	0.04911
	(B * C_N * !Y)	0.00290	0.00352	0.04403
	(A * !B * C_N * !Y)	0.00841	0.00906	0.04943
	(A * !B * C_N * !Y)	0.00315	0.00377	0.04421
	(!C_N * !Y)	0.00844	0.00911	0.04969
	(!C_N * !Y)	0.00344	0.00407	0.04466

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)	0.00161	0.00293	0.02736
	(B * C_N * !Y)	0.00478	0.00612	0.03054
	(A * !B * C_N * !Y)	0.00161	0.00293	0.02736
	(A * !B * C_N * !Y)	0.00478	0.00612	0.03054
	(!C_N * !Y)	0.00128	0.00261	0.02703
	(!C_N * !Y)	0.00445	0.00580	0.03021
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00302	0.00418	0.02916
	(B * C_N * !Y)	0.00647	0.00762	0.03261
	(A * !B * C_N * !Y)	0.00302	0.00418	0.02916
	(A * !B * C_N * !Y)	0.00648	0.00763	0.03261
	(!C_N * !Y)	0.00262	0.00378	0.02877
	(!C_N * !Y)	0.00607	0.00724	0.03222
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00709	0.00918	0.05161
	(B * C_N * !Y)	0.01209	0.01422	0.05665
	(A * !B * C_N * !Y)	0.00709	0.00918	0.05163
	(A * !B * C_N * !Y)	0.01210	0.01422	0.05665
	(!C_N * !Y)	0.00634	0.00843	0.05089
	(!C_N * !Y)	0.01134	0.01345	0.05591

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00273	0.00283	0.00282	0.00219	0.26021
sky130_fd_sc_hs__nor4b_2	0.00539	0.00545	0.00548	0.00257	0.45066
sky130_fd_sc_hs__nor4b_4	0.01057	0.01062	0.01079	0.00386	0.85163

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	0.15785	0.31778
sky130_fd_sc_hs__nor4b_2	0.00000	0.09070	0.18422
sky130_fd_sc_hs__nor4b_4	0.00000	0.33440	0.68511

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)	0.22072	1.25612	9.99492
	B->Y (FR)	0.20778	1.25412	10.39820
	C->Y (FR)	0.17345	1.24082	10.80370
	D_N->Y (RR)	0.14490	0.99544	6.67513
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.23294	1.11590	9.85088
	B->Y (FR)	0.21532	1.10051	10.23990
	C->Y (FR)	0.17861	1.09411	10.82740
	D_N->Y (RR)	0.12426	0.83137	6.59741
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.23075	0.97194	9.84753
	B->Y (FR)	0.21358	0.95946	10.28410
	C->Y (FR)	0.17385	0.95076	10.87290
	D_N->Y (RR)	0.13535	0.74598	7.08426

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.02277	0.28651	2.32066
	B->Y (RF)	0.02391	0.28215	2.30851
	C->Y (RF)	0.02392	0.27442	2.29298
	D_N->Y (FF)	0.07824	0.38032	2.29496
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.01875	0.22694	2.00043
	B->Y (RF)	0.01968	0.22405	2.00978
	C->Y (RF)	0.02179	0.22119	2.03918
	D_N->Y (FF)	0.08609	0.39950	2.34906
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.01911	0.20248	2.03559
	B->Y (RF)	0.01931	0.19512	2.00252
	C->Y (RF)	0.01958	0.17913	1.90751
	D_N->Y (FF)	0.08966	0.38012	2.12824

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00183	0.00167	0.00406
	A	0.00781	0.00767	0.01006
	B	0.00181	0.00166	0.00426
	B	0.00692	0.00676	0.00938
	C	0.00161	0.00147	0.00449
	C	0.00599	0.00585	0.00888
	D_N	0.00745	0.00807	0.03081
	D_N	0.00504	0.00566	0.02842
sky130_fd_sc_hs__nor4b_2	A	0.00334	0.00307	0.00779
	A	0.01620	0.01591	0.02057
	B	0.00337	0.00308	0.00848
	B	0.01424	0.01395	0.01937
	C	0.00325	0.00299	0.00904
	C	0.01229	0.01202	0.01809
	D_N	0.01122	0.01185	0.03673
	D_N	0.00962	0.01023	0.03516
sky130_fd_sc_hs__nor4b_4	A	0.00658	0.00601	0.01548
	A	0.03197	0.03145	0.04080
	B	0.00661	0.00599	0.01663
	B	0.02803	0.02747	0.03811
	C	0.00630	0.00582	0.01789
	C	0.02412	0.02367	0.03579
	D_N	0.01979	0.02056	0.06198
	D_N	0.01850	0.01929	0.06074

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00863	0.00852	0.01182
	A	0.00278	0.00266	0.00599
	B	0.00704	0.00700	0.01024
	B	0.00202	0.00194	0.00521
	C	0.00537	0.00547	0.00866
	C	0.00102	0.00110	0.00429
	D_N	0.00434	0.00576	0.02958
	D_N	0.00674	0.00816	0.03197
sky130_fd_sc_hs__nor4b_2	A	0.01797	0.01772	0.02443
	A	0.00550	0.00520	0.01198
	B	0.01401	0.01394	0.02062
	B	0.00331	0.00319	0.00992
	C	0.01048	0.01059	0.01713
	C	0.00152	0.00160	0.00813
	D_N	0.00789	0.00934	0.03217
	D_N	0.00950	0.01095	0.03376
sky130_fd_sc_hs__nor4b_4	A	0.03499	0.03448	0.04762
	A	0.01035	0.00971	0.02308
	B	0.02740	0.02717	0.04036
	B	0.00629	0.00597	0.01926
	C	0.02020	0.02044	0.03352
	C	0.00243	0.00261	0.01573
	D_N	0.01595	0.01853	0.05846
	D_N	0.01724	0.01983	0.05973

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)**	0.00146	0.00147	0.00145
	(B * C * D_N * !Y)	-0.00168	-0.00174	-0.00173
	(B * !D_N * !Y)	0.00140	0.00141	0.00139
	(B * !D_N * !Y)	-0.00175	-0.00179	-0.00178
	(B * !C * D_N * !Y)	0.00147	0.00148	0.00145
	(B * !C * D_N * !Y)	-0.00166	-0.00174	-0.00173
	(!B * C * D_N * !Y)	0.00146	0.00147	0.00145
	(!B * C * D_N * !Y)	-0.00154	-0.00168	-0.00167
	(!B * C * !D_N * !Y)	0.00139	0.00141	0.00139
	(!B * C * !D_N * !Y)	-0.00160	-0.00173	-0.00172
	(!B * !C * !D_N * !Y)	0.00140	0.00141	0.00139
	(!B * !C * !D_N * !Y)	-0.00159	-0.00171	-0.00170
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00293	0.00297	0.00293
	(B * C * D_N * !Y)	-0.00347	-0.00363	-0.00360
	(B * !D_N * !Y)	0.00293	0.00297	0.00293
	(B * !D_N * !Y)	-0.00348	-0.00363	-0.00360
	(B * !C * D_N * !Y)	0.00294	0.00297	0.00293
	(B * !C * D_N * !Y)	-0.00343	-0.00363	-0.00360
	(!B * C * D_N * !Y)	0.00294	0.00296	0.00293
	(!B * C * D_N * !Y)	-0.00322	-0.00349	-0.00347
	(!B * C * !D_N * !Y)	0.00293	0.00296	0.00293
	(!B * C * !D_N * !Y)	-0.00322	-0.00349	-0.00347
	(!B * !C * !D_N * !Y)	0.00296	0.00296	0.00293
	(!B * !C * !D_N * !Y)	-0.00319	-0.00343	-0.00343

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00573	0.00580	0.00573
	(B * C * D_N * !Y)	-0.00686	-0.00716	-0.00710
	(B * !D_N * !Y)	0.00572	0.00580	0.00572
	(B * !D_N * !Y)	-0.00688	-0.00716	-0.00710
	(B * !C * D_N * !Y)	0.00575	0.00580	0.00573
	(B * !C * D_N * !Y)	-0.00677	-0.00715	-0.00711
	(!B * C * D_N * !Y)	0.00575	0.00580	0.00573
	(!B * C * D_N * !Y)	-0.00635	-0.00689	-0.00685
	(!B * C * !D_N * !Y)	0.00575	0.00579	0.00572
	(!B * C * !D_N * !Y)	-0.00638	-0.00689	-0.00684
	(!B * !C * !D_N * !Y)	0.00579	0.00579	0.00573
	(!B * !C * !D_N * !Y)	-0.00632	-0.00678	-0.00675

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)**	-0.00145	-0.00145	-0.00145
	(B * C * D_N * !Y)	0.00173	0.00174	0.00173
	(B * !D_N * !Y)	-0.00139	-0.00140	-0.00139
	(B * !D_N * !Y)	0.00178	0.00179	0.00178
	(B * !C * D_N * !Y)	-0.00145	-0.00145	-0.00145
	(B * !C * D_N * !Y)	0.00173	0.00174	0.00173
	(!B * C * D_N * !Y)	-0.00145	-0.00145	-0.00145
	(!B * C * D_N * !Y)	0.00167	0.00168	0.00167
	(!B * C * !D_N * !Y)	-0.00139	-0.00140	-0.00139
	(!B * C * !D_N * !Y)	0.00172	0.00173	0.00172
	(!B * !C * !D_N * !Y)	-0.00139	-0.00140	-0.00139
	(!B * !C * !D_N * !Y)	0.00170	0.00171	0.00170

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00293	-0.00294	-0.00292
	(B * C * D_N * !Y)	0.00361	0.00363	0.00360
	(B * !D_N * !Y)	-0.00291	-0.00294	-0.00292
	(B * !D_N * !Y)	0.00358	0.00363	0.00360
	(B * !C * D_N * !Y)	-0.00293	-0.00293	-0.00292
	(B * !C * D_N * !Y)	0.00361	0.00363	0.00360
	(!B * C * D_N * !Y)	-0.00292	-0.00293	-0.00292
	(!B * C * D_N * !Y)	0.00347	0.00349	0.00347
	(!B * C * !D_N * !Y)	-0.00292	-0.00293	-0.00292
	(!B * C * !D_N * !Y)	0.00347	0.00349	0.00347
	(!B * !C * !D_N * !Y)	-0.00292	-0.00293	-0.00293
	(!B * !C * !D_N * !Y)	0.00341	0.00343	0.00343
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00569	-0.00573	-0.00571
	(B * C * D_N * !Y)	0.00707	0.00716	0.00710
	(B * !D_N * !Y)	-0.00570	-0.00574	-0.00571
	(B * !D_N * !Y)	0.00707	0.00716	0.00710
	(B * !C * D_N * !Y)	-0.00569	-0.00573	-0.00570
	(B * !C * D_N * !Y)	0.00708	0.00715	0.00711
	(!B * C * D_N * !Y)	-0.00569	-0.00573	-0.00570
	(!B * C * D_N * !Y)	0.00682	0.00689	0.00685
	(!B * C * !D_N * !Y)	-0.00570	-0.00573	-0.00571
	(!B * C * !D_N * !Y)	0.00682	0.00689	0.00684
	(!B * !C * !D_N * !Y)	-0.00571	-0.00573	-0.00571
	(!B * !C * !D_N * !Y)	0.00674	0.00678	0.00675

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)**	0.00157	0.00159	0.00152
	(A * C * D_N * !Y)	-0.00113	-0.00114	-0.00113
	(A * C * !D_N * !Y)	0.00144	0.00145	0.00143
	(A * C * !D_N * !Y)	-0.00125	-0.00125	-0.00124
	(A * !C * D_N * !Y)	0.00149	0.00152	0.00149
	(A * !C * D_N * !Y)	-0.00094	-0.00096	-0.00094
	(A * !C * !D_N * !Y)	0.00143	0.00144	0.00143
	(A * !C * !D_N * !Y)	-0.00119	-0.00119	-0.00119
	(!A * C * D_N * !Y)	0.00161	0.00149	0.00149
	(!A * C * D_N * !Y)	-0.00157	-0.00170	-0.00171
	(!A * C * !D_N * !Y)	0.00142	0.00143	0.00143
	(!A * C * !D_N * !Y)	-0.00171	-0.00176	-0.00176
	(!A * !C * !D_N * !Y)	0.00148	0.00145	0.00143
	(!A * !C * !D_N * !Y)	-0.00153	-0.00171	-0.00170
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00306	0.00310	0.00301
	(A * C * D_N * !Y)	-0.00247	-0.00247	-0.00246
	(A * C * !D_N * !Y)	0.00301	0.00304	0.00299
	(A * C * !D_N * !Y)	-0.00256	-0.00257	-0.00256
	(A * !C * D_N * !Y)	0.00299	0.00304	0.00299
	(A * !C * D_N * !Y)	-0.00204	-0.00207	-0.00204
	(A * !C * !D_N * !Y)	0.00301	0.00304	0.00302
	(A * !C * !D_N * !Y)	-0.00244	-0.00245	-0.00244
	(!A * C * D_N * !Y)	0.00313	0.00300	0.00298
	(!A * C * D_N * !Y)	-0.00336	-0.00362	-0.00361
	(!A * C * !D_N * !Y)	0.00298	0.00299	0.00298
	(!A * C * !D_N * !Y)	-0.00350	-0.00359	-0.00361
	(!A * !C * !D_N * !Y)	0.00306	0.00300	0.00298
	(!A * !C * !D_N * !Y)	-0.00321	-0.00349	-0.00347

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00600	0.00609	0.00588
	(A * C * D_N * !Y)	-0.00483	-0.00483	-0.00480
	(A * C * !D_N * !Y)	0.00586	0.00592	0.00584
	(A * C * !D_N * !Y)	-0.00504	-0.00503	-0.00501
	(A * !C * D_N * !Y)	0.00587	0.00594	0.00583
	(A * !C * D_N * !Y)	-0.00403	-0.00407	-0.00400
	(A * !C * !D_N * !Y)	0.00587	0.00593	0.00587
	(A * !C * !D_N * !Y)	-0.00478	-0.00481	-0.00476
	(!A * C * D_N * !Y)	0.00620	0.00587	0.00583
	(!A * C * D_N * !Y)	-0.00658	-0.00713	-0.00715
	(!A * C * !D_N * !Y)	0.00584	0.00586	0.00582
	(!A * C * !D_N * !Y)	-0.00695	-0.00717	-0.00714
	(!A * !C * !D_N * !Y)	0.00603	0.00586	0.00583
	(!A * !C * !D_N * !Y)	-0.00634	-0.00691	-0.00687

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)**	-0.00149	-0.00149	-0.00149
	(A * C * D_N * !Y)	0.00113	0.00114	0.00113
	(A * C * !D_N * !Y)	-0.00143	-0.00143	-0.00143
	(A * C * !D_N * !Y)	0.00125	0.00125	0.00124
	(A * !C * D_N * !Y)	-0.00146	-0.00147	-0.00146
	(A * !C * D_N * !Y)	0.00097	0.00098	0.00098
	(A * !C * !D_N * !Y)	-0.00143	-0.00143	-0.00143
	(A * !C * !D_N * !Y)	0.00119	0.00119	0.00119
	(!A * C * D_N * !Y)	-0.00148	-0.00149	-0.00148
	(!A * C * D_N * !Y)	0.00171	0.00172	0.00171
	(!A * C * !D_N * !Y)	-0.00142	-0.00143	-0.00143
	(!A * C * !D_N * !Y)	0.00175	0.00177	0.00176
	(!A * !C * !D_N * !Y)	-0.00142	-0.00143	-0.00143
	(!A * !C * !D_N * !Y)	0.00169	0.00171	0.00170
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00299	-0.00299	-0.00298
	(A * C * D_N * !Y)	0.00247	0.00247	0.00246
	(A * C * !D_N * !Y)	-0.00298	-0.00299	-0.00298
	(A * C * !D_N * !Y)	0.00256	0.00257	0.00256
	(A * !C * D_N * !Y)	-0.00288	-0.00291	-0.00288
	(A * !C * D_N * !Y)	0.00214	0.00216	0.00216
	(A * !C * !D_N * !Y)	-0.00300	-0.00301	-0.00300
	(A * !C * !D_N * !Y)	0.00244	0.00245	0.00244
	(!A * C * D_N * !Y)	-0.00297	-0.00299	-0.00297
	(!A * C * D_N * !Y)	0.00359	0.00364	0.00361
	(!A * C * !D_N * !Y)	-0.00297	-0.00297	-0.00297
	(!A * C * !D_N * !Y)	0.00359	0.00359	0.00361
	(!A * !C * !D_N * !Y)	-0.00298	-0.00300	-0.00298
	(!A * !C * !D_N * !Y)	0.00347	0.00349	0.00347

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00583	-0.00583	-0.00581
	(A * C * D_N * !Y)	0.00483	0.00483	0.00480
	(A * C * !D_N * !Y)	-0.00583	-0.00583	-0.00582
	(A * C * !D_N * !Y)	0.00504	0.00503	0.00501
	(A * !C * D_N * !Y)	-0.00565	-0.00570	-0.00564
	(A * !C * D_N * !Y)	0.00416	0.00421	0.00421
	(A * !C * !D_N * !Y)	-0.00585	-0.00589	-0.00585
	(A * !C * !D_N * !Y)	0.00478	0.00481	0.00476
	(!A * C * D_N * !Y)	-0.00581	-0.00580	-0.00580
	(!A * C * D_N * !Y)	0.00715	0.00713	0.00715
	(!A * C * !D_N * !Y)	-0.00582	-0.00583	-0.00581
	(!A * C * !D_N * !Y)	0.00714	0.00717	0.00714
	(!A * !C * !D_N * !Y)	-0.00581	-0.00584	-0.00581
	(!A * !C * !D_N * !Y)	0.00685	0.00691	0.00687

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)	0.00169	0.00172	0.00169
	(B * D_N * !Y)	-0.00094	-0.00095	-0.00094
	(B * !D_N * !Y)	0.00150	0.00153	0.00146
	(B * !D_N * !Y)	-0.00138	-0.00137	-0.00138
	(A * !B * D_N * !Y)	0.00170	0.00173	0.00169
	(A * !B * D_N * !Y)	-0.00093	-0.00094	-0.00093
	(A * !B * !D_N * !Y)	0.00156	0.00147	0.00144
	(A * !B * !D_N * !Y)	-0.00141	-0.00142	-0.00141
	(!A * !B * !D_N * !Y)	0.00174	0.00146	0.00144
	(!A * !B * !D_N * !Y)	-0.00163	-0.00195	-0.00195

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00321	0.00327	0.00321
	(B * D_N * !Y)	-0.00192	-0.00195	-0.00192
	(B * !D_N * !Y)	0.00310	0.00319	0.00309
	(B * !D_N * !Y)	-0.00248	-0.00248	-0.00247
	(A * !B * D_N * !Y)	0.00323	0.00327	0.00321
	(A * !B * D_N * !Y)	-0.00192	-0.00194	-0.00192
	(A * !B * !D_N * !Y)	0.00323	0.00310	0.00305
	(A * !B * !D_N * !Y)	-0.00256	-0.00257	-0.00255
	(!A * !B * !D_N * !Y)	0.00368	0.00305	0.00302
	(!A * !B * !D_N * !Y)	-0.00294	-0.00361	-0.00364
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00630	0.00643	0.00631
	(B * D_N * !Y)	-0.00380	-0.00388	-0.00382
	(B * !D_N * !Y)	0.00634	0.00637	0.00624
	(B * !D_N * !Y)	-0.00473	-0.00475	-0.00473
	(A * !B * D_N * !Y)	0.00632	0.00644	0.00631
	(A * !B * D_N * !Y)	-0.00378	-0.00385	-0.00380
	(A * !B * !D_N * !Y)	0.00666	0.00627	0.00617
	(A * !B * !D_N * !Y)	-0.00488	-0.00488	-0.00486
	(!A * !B * !D_N * !Y)	0.00755	0.00615	0.00612
	(!A * !B * !D_N * !Y)	-0.00566	-0.00699	-0.00708

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)**	-0.00167	-0.00168	-0.00167
	(B * D_N * !Y)	0.00097	0.00097	0.00097
	(B * !D_N * !Y)	-0.00143	-0.00143	-0.00143
	(B * !D_N * !Y)	0.00138	0.00137	0.00138
	(A * !B * D_N * !Y)	-0.00160	-0.00162	-0.00166
	(A * !B * D_N * !Y)	0.00097	0.00098	0.00096
	(A * !B * !D_N * !Y)	-0.00144	-0.00144	-0.00143
	(A * !B * !D_N * !Y)	0.00141	0.00142	0.00141
	(!A * !B * !D_N * !Y)	-0.00143	-0.00144	-0.00142
	(!A * !B * !D_N * !Y)	0.00195	0.00197	0.00196
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00315	-0.00318	-0.00316
	(B * D_N * !Y)	0.00196	0.00199	0.00199
	(B * !D_N * !Y)	-0.00306	-0.00306	-0.00305
	(B * !D_N * !Y)	0.00248	0.00248	0.00247
	(A * !B * D_N * !Y)	-0.00299	-0.00303	-0.00314
	(A * !B * D_N * !Y)	0.00201	0.00203	0.00197
	(A * !B * !D_N * !Y)	-0.00305	-0.00306	-0.00305
	(A * !B * !D_N * !Y)	0.00256	0.00257	0.00255
	(!A * !B * !D_N * !Y)	-0.00301	-0.00303	-0.00301
	(!A * !B * !D_N * !Y)	0.00362	0.00364	0.00364
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00619	-0.00619	-0.00621
	(B * D_N * !Y)	0.00392	0.00392	0.00396
	(B * !D_N * !Y)	-0.00616	-0.00619	-0.00616
	(B * !D_N * !Y)	0.00473	0.00475	0.00473
	(A * !B * D_N * !Y)	-0.00590	-0.00591	-0.00618
	(A * !B * D_N * !Y)	0.00398	0.00397	0.00390
	(A * !B * !D_N * !Y)	-0.00617	-0.00618	-0.00616
	(A * !B * !D_N * !Y)	0.00488	0.00488	0.00486
	(!A * !B * !D_N * !Y)	-0.00611	-0.00612	-0.00608
	(!A * !B * !D_N * !Y)	0.00706	0.00707	0.00708

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00418	0.00483	0.02869
	(C * !Y)	0.00084	0.00148	0.02536
	(B * !C * !Y)	0.00426	0.00491	0.02874
	(B * !C * !Y)	0.00087	0.00151	0.02537
	(A * !B * !C * !Y)	0.00436	0.00500	0.02880
	(A * !B * !C * !Y)	0.00092	0.00156	0.02539
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00538	0.00598	0.03052
	(C * !Y)	0.00159	0.00216	0.02672
	(B * !C * !Y)	0.00558	0.00617	0.03066
	(B * !C * !Y)	0.00167	0.00224	0.02678
	(A * !B * !C * !Y)	0.00583	0.00642	0.03085
	(A * !B * !C * !Y)	0.00183	0.00240	0.02689
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00826	0.00894	0.04981
	(C * !Y)	0.00266	0.00332	0.04421
	(B * !C * !Y)	0.00864	0.00932	0.05008
	(B * !C * !Y)	0.00284	0.00350	0.04431
	(A * !B * !C * !Y)	0.00914	0.00982	0.05044
	(A * !B * !C * !Y)	0.00312	0.00377	0.04451

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00134	0.00268	0.02700
	(C * !Y)	0.00467	0.00603	0.03033
	(B * !C * !Y)	0.00134	0.00268	0.02699
	(B * !C * !Y)	0.00468	0.00603	0.03033
	(A * !B * !C * !Y)	0.00135	0.00269	0.02697
	(A * !B * !C * !Y)	0.00468	0.00604	0.03031
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00278	0.00393	0.02887
	(C * !Y)	0.00657	0.00773	0.03265
	(B * !C * !Y)	0.00278	0.00393	0.02887
	(B * !C * !Y)	0.00657	0.00773	0.03266
	(A * !B * !C * !Y)	0.00278	0.00393	0.02887
	(A * !B * !C * !Y)	0.00657	0.00774	0.03266
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00584	0.00789	0.05051
	(C * !Y)	0.01141	0.01349	0.05609
	(B * !C * !Y)	0.00583	0.00788	0.05050
	(B * !C * !Y)	0.01142	0.01350	0.05610
	(A * !B * !C * !Y)	0.00583	0.00787	0.05050
	(A * !B * !C * !Y)	0.01142	0.01350	0.05610

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00267	0.00284	0.00283	0.00287	0.26022
sky130_fd_sc_hs__nor4_2	0.00414	0.00475	0.00471	0.00441	0.47703
sky130_fd_sc_hs__nor4_4	0.00818	0.00855	0.00834	0.00849	0.86445

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	0.00958	0.05288
sky130_fd_sc_hs__nor4_2	0.00000	0.01760	0.10576
sky130_fd_sc_hs__nor4_4	0.00000	0.03521	0.21152

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)	0.21513	1.24493	9.93346
	B->Y (FR)	0.20385	1.24449	10.33940
	C->Y (FR)	0.16972	1.23110	10.75060
	D->Y (FR)	0.11399	1.16882	10.60670
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.18398	1.05870	9.87976
	B->Y (FR)	0.16694	1.04833	10.25080
	C->Y (FR)	0.12306	1.02159	10.65720
	D->Y (FR)	0.06075	0.94929	10.45760
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.20164	0.93754	9.71504
	B->Y (FR)	0.18561	0.92836	10.15920
	C->Y (FR)	0.14579	0.91425	10.69240
	D->Y (FR)	0.07346	0.84159	10.58320

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.02185	0.27818	2.24431
	B->Y (RF)	0.02393	0.28205	2.30924
	C->Y (RF)	0.02421	0.27522	2.30302
	D->Y (RF)	0.02093	0.26267	2.26785
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.02895	0.36681	3.54858
	B->Y (RF)	0.03277	0.36956	3.63693
	C->Y (RF)	0.03223	0.35501	3.61001
	D->Y (RF)	0.02524	0.32763	3.47427
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.02969	0.31531	3.32161
	B->Y (RF)	0.03169	0.30795	3.33322
	C->Y (RF)	0.03268	0.30090	3.38070
	D->Y (RF)	0.02452	0.27903	3.34409

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00030	0.00016	0.00259
	A	0.00777	0.00765	0.01007
	B	0.00042	0.00026	0.00289
	B	0.00695	0.00679	0.00942
	C	0.00042	0.00027	0.00333
	C	0.00599	0.00584	0.00892
	D	0.00031	0.00051	0.00653
	D	0.00507	0.00528	0.01132
sky130_fd_sc_hs__nor4_2	A	0.00036	0.00024	0.00274
	A	0.01300	0.01288	0.01538
	B	0.00005	-0.00009	0.00274
	B	0.01140	0.01129	0.01412
	C	0.00029	0.00012	0.00377
	C	0.00938	0.00923	0.01290
	D	-0.00001	0.00037	0.00833
	D	0.00713	0.00750	0.01550
sky130_fd_sc_hs__nor4_4	A	0.00332	0.00303	0.00830
	A	0.02912	0.02885	0.03412
	B	0.00344	0.00306	0.00915
	B	0.02542	0.02510	0.03119
	C	0.00353	0.00320	0.01045
	C	0.02146	0.02111	0.02845
	D	0.00318	0.00389	0.01952
	D	0.01726	0.01800	0.03369

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00997	0.00987	0.01325
	A	0.00267	0.00256	0.00598
	B	0.00833	0.00827	0.01153
	B	0.00190	0.00184	0.00512
	C	0.00644	0.00654	0.00972
	C	0.00091	0.00099	0.00420
	D	0.00454	0.00477	0.00798
	D	-0.00021	-0.00001	0.00322
sky130_fd_sc_hs__nor4_2	A	0.01750	0.01716	0.02128
	A	0.00527	0.00490	0.00910
	B	0.01451	0.01427	0.01830
	B	0.00340	0.00311	0.00724
	C	0.01006	0.01008	0.01420
	C	0.00104	0.00103	0.00515
	D	0.00585	0.00627	0.01048
	D	-0.00127	-0.00089	0.00334
sky130_fd_sc_hs__nor4_4	A	0.03523	0.03457	0.04312
	A	0.01029	0.00957	0.01817
	B	0.02777	0.02730	0.03585
	B	0.00619	0.00572	0.01423
	C	0.02021	0.02013	0.02858
	C	0.00247	0.00237	0.01076
	D	0.01157	0.01222	0.02075
	D	-0.00249	-0.00191	0.00660

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00150	0.00152	0.00150
	(B * D * !Y)	-0.00173	-0.00178	-0.00177
	(B * C * !D * !Y)	0.00150	0.00152	0.00150
	(B * C * !D * !Y)	-0.00173	-0.00178	-0.00177
	(B * !C * !D * !Y)	0.00150	0.00152	0.00150
	(B * !C * !D * !Y)	-0.00171	-0.00178	-0.00177
	(!B * C * D * !Y)	0.00150	0.00151	0.00150
	(!B * C * D * !Y)	-0.00159	-0.00172	-0.00171
	(!B * C * !D * !Y)	0.00150	0.00151	0.00150
	(!B * C * !D * !Y)	-0.00160	-0.00172	-0.00171
	(!B * !C * D * !Y)	0.00150	0.00151	0.00150
	(!B * !C * D * !Y)	-0.00157	-0.00169	-0.00168
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00150	0.00151	0.00149
	(B * D * !Y)	-0.00334	-0.00347	-0.00344
	(B * C * !D * !Y)	0.00150	0.00151	0.00149
	(B * C * !D * !Y)	-0.00334	-0.00347	-0.00344
	(B * !C * !D * !Y)	0.00151	0.00151	0.00149
	(B * !C * !D * !Y)	-0.00327	-0.00346	-0.00344
	(!B * C * D * !Y)	0.00151	0.00151	0.00149
	(!B * C * D * !Y)	-0.00305	-0.00332	-0.00330
	(!B * C * !D * !Y)	0.00151	0.00151	0.00149
	(!B * C * !D * !Y)	-0.00305	-0.00332	-0.00330
	(!B * !C * D * !Y)	0.00152	0.00151	0.00149
	(!B * !C * D * !Y)	-0.00298	-0.00325	-0.00324

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00312	0.00315	0.00311
	(B * D * !Y)	-0.00683	-0.00710	-0.00704
	(B * C * !D * !Y)	0.00312	0.00315	0.00311
	(B * C * !D * !Y)	-0.00682	-0.00710	-0.00704
	(B * !C * !D * !Y)	0.00312	0.00315	0.00311
	(B * !C * !D * !Y)	-0.00671	-0.00710	-0.00705
	(!B * C * D * !Y)	0.00312	0.00315	0.00311
	(!B * C * D * !Y)	-0.00629	-0.00684	-0.00679
	(!B * C * !D * !Y)	0.00312	0.00315	0.00311
	(!B * C * !D * !Y)	-0.00629	-0.00684	-0.00679
	(!B * !C * D * !Y)	0.00317	0.00315	0.00311
	(!B * !C * D * !Y)	-0.00620	-0.00671	-0.00668

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00149	-0.00150	-0.00149
	(B * D * !Y)	0.00177	0.00178	0.00177
	(B * C * !D * !Y)	-0.00149	-0.00150	-0.00149
	(B * C * !D * !Y)	0.00177	0.00178	0.00177
	(B * !C * !D * !Y)	-0.00149	-0.00150	-0.00149
	(B * !C * !D * !Y)	0.00177	0.00179	0.00177
	(!B * C * D * !Y)	-0.00149	-0.00150	-0.00149
	(!B * C * D * !Y)	0.00170	0.00172	0.00171
	(!B * C * !D * !Y)	-0.00149	-0.00150	-0.00149
	(!B * C * !D * !Y)	0.00170	0.00172	0.00171
	(!B * !C * D * !Y)	-0.00149	-0.00150	-0.00149
	(!B * !C * D * !Y)	0.00168	0.00169	0.00168

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00149	-0.00150	-0.00149
	(B * D * !Y)	0.00344	0.00347	0.00344
	(B * C * !D * !Y)	-0.00149	-0.00150	-0.00149
	(B * C * !D * !Y)	0.00344	0.00347	0.00344
	(B * !C * !D * !Y)	-0.00149	-0.00149	-0.00149
	(B * !C * !D * !Y)	0.00344	0.00346	0.00344
	(!B * C * D * !Y)	-0.00149	-0.00150	-0.00149
	(!B * C * D * !Y)	0.00329	0.00332	0.00330
	(!B * C * !D * !Y)	-0.00149	-0.00150	-0.00149
	(!B * C * !D * !Y)	0.00329	0.00332	0.00330
	(!B * !C * D * !Y)	-0.00148	-0.00149	-0.00149
	(!B * !C * D * !Y)	0.00322	0.00325	0.00324
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00311	-0.00312	-0.00310
	(B * D * !Y)	0.00704	0.00710	0.00704
	(B * C * !D * !Y)	-0.00311	-0.00312	-0.00310
	(B * C * !D * !Y)	0.00704	0.00710	0.00704
	(B * !C * !D * !Y)	-0.00311	-0.00312	-0.00310
	(B * !C * !D * !Y)	0.00704	0.00710	0.00705
	(!B * C * D * !Y)	-0.00310	-0.00312	-0.00310
	(!B * C * D * !Y)	0.00678	0.00684	0.00679
	(!B * C * !D * !Y)	-0.00310	-0.00312	-0.00310
	(!B * C * !D * !Y)	0.00678	0.00684	0.00679
	(!B * !C * D * !Y)	-0.00310	-0.00312	-0.00310
	(!B * !C * D * !Y)	0.00666	0.00671	0.00668

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)**	0.00144	0.00146	0.00144
	(A * C * D * !Y)	-0.00125	-0.00125	-0.00125
	(A * C * !D * !Y)	0.00150	0.00152	0.00146
	(A * C * !D * !Y)	-0.00120	-0.00120	-0.00119
	(A * !C * D * !Y)	0.00144	0.00145	0.00144
	(A * !C * D * !Y)	-0.00118	-0.00118	-0.00117
	(A * !C * !D * !Y)	0.00144	0.00146	0.00144
	(A * !C * !D * !Y)	-0.00101	-0.00102	-0.00101
	(!A * C * D * !Y)	0.00145	0.00144	0.00144
	(!A * C * D * !Y)	-0.00173	-0.00177	-0.00177
	(!A * C * !D * !Y)	0.00153	0.00144	0.00144
	(!A * C * !D * !Y)	-0.00163	-0.00177	-0.00177
	(!A * !C * D * !Y)	0.00149	0.00146	0.00144
	(!A * !C * D * !Y)	-0.00152	-0.00171	-0.00170
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00191	0.00191	0.00190
	(A * C * D * !Y)	-0.00256	-0.00256	-0.00255
	(A * C * !D * !Y)	0.00194	0.00198	0.00190
	(A * C * !D * !Y)	-0.00244	-0.00243	-0.00242
	(A * !C * D * !Y)	0.00189	0.00190	0.00188
	(A * !C * D * !Y)	-0.00239	-0.00240	-0.00238
	(A * !C * !D * !Y)	0.00188	0.00189	0.00188
	(A * !C * !D * !Y)	-0.00206	-0.00207	-0.00205
	(!A * C * D * !Y)	0.00190	0.00188	0.00187
	(!A * C * D * !Y)	-0.00348	-0.00360	-0.00359
	(!A * C * !D * !Y)	0.00207	0.00188	0.00187
	(!A * C * !D * !Y)	-0.00328	-0.00362	-0.00359
	(!A * !C * D * !Y)	0.00199	0.00188	0.00186
	(!A * !C * D * !Y)	-0.00307	-0.00346	-0.00344

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00324	0.00327	0.00322
	(A * C * D * !Y)	-0.00505	-0.00505	-0.00505
	(A * C * !D * !Y)	0.00334	0.00336	0.00324
	(A * C * !D * !Y)	-0.00485	-0.00485	-0.00485
	(A * !C * D * !Y)	0.00325	0.00328	0.00325
	(A * !C * D * !Y)	-0.00476	-0.00477	-0.00475
	(A * !C * !D * !Y)	0.00321	0.00325	0.00322
	(A * !C * !D * !Y)	-0.00408	-0.00412	-0.00408
	(!A * C * D * !Y)	0.00322	0.00323	0.00321
	(!A * C * D * !Y)	-0.00696	-0.00728	-0.00723
	(!A * C * !D * !Y)	0.00350	0.00323	0.00321
	(!A * C * !D * !Y)	-0.00659	-0.00727	-0.00724
	(!A * !C * D * !Y)	0.00340	0.00324	0.00322
	(!A * !C * D * !Y)	-0.00624	-0.00695	-0.00692

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)**	-0.00144	-0.00144	-0.00144
	(A * C * D * !Y)	0.00125	0.00125	0.00125
	(A * C * !D * !Y)	-0.00144	-0.00144	-0.00144
	(A * C * !D * !Y)	0.00120	0.00120	0.00119
	(A * !C * D * !Y)	-0.00144	-0.00144	-0.00144
	(A * !C * D * !Y)	0.00118	0.00118	0.00117
	(A * !C * !D * !Y)	-0.00141	-0.00142	-0.00141
	(A * !C * !D * !Y)	0.00104	0.00104	0.00104
	(!A * C * D * !Y)	-0.00143	-0.00144	-0.00144
	(!A * C * D * !Y)	0.00176	0.00178	0.00177
	(!A * C * !D * !Y)	-0.00144	-0.00144	-0.00144
	(!A * C * !D * !Y)	0.00177	0.00178	0.00177
	(!A * !C * D * !Y)	-0.00143	-0.00144	-0.00143
	(!A * !C * D * !Y)	0.00168	0.00171	0.00170
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00189	-0.00190	-0.00189
	(A * C * D * !Y)	0.00256	0.00256	0.00255
	(A * C * !D * !Y)	-0.00189	-0.00189	-0.00188
	(A * C * !D * !Y)	0.00244	0.00243	0.00242
	(A * !C * D * !Y)	-0.00188	-0.00188	-0.00187
	(A * !C * D * !Y)	0.00239	0.00240	0.00238
	(A * !C * !D * !Y)	-0.00183	-0.00185	-0.00183
	(A * !C * !D * !Y)	0.00209	0.00211	0.00210
	(!A * C * D * !Y)	-0.00187	-0.00187	-0.00187
	(!A * C * D * !Y)	0.00358	0.00360	0.00359
	(!A * C * !D * !Y)	-0.00187	-0.00188	-0.00187
	(!A * C * !D * !Y)	0.00358	0.00362	0.00359
	(!A * !C * D * !Y)	-0.00186	-0.00187	-0.00186
	(!A * !C * D * !Y)	0.00342	0.00346	0.00344

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00321	-0.00321	-0.00321
	(A * C * D * !Y)	0.00505	0.00505	0.00505
	(A * C * !D * !Y)	-0.00321	-0.00321	-0.00321
	(A * C * !D * !Y)	0.00485	0.00485	0.00485
	(A * !C * D * !Y)	-0.00323	-0.00324	-0.00323
	(A * !C * D * !Y)	0.00476	0.00477	0.00475
	(A * !C * !D * !Y)	-0.00306	-0.00307	-0.00302
	(A * !C * !D * !Y)	0.00424	0.00426	0.00427
	(!A * C * D * !Y)	-0.00319	-0.00322	-0.00321
	(!A * C * D * !Y)	0.00718	0.00729	0.00723
	(!A * C * !D * !Y)	-0.00319	-0.00322	-0.00321
	(!A * C * !D * !Y)	0.00719	0.00728	0.00724
	(!A * !C * D * !Y)	-0.00322	-0.00323	-0.00320
	(!A * !C * D * !Y)	0.00692	0.00695	0.00692

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00152	0.00155	0.00148
	(B * D * !Y)	-0.00113	-0.00112	-0.00113
	(B * !D * !Y)	0.00146	0.00149	0.00146
	(B * !D * !Y)	-0.00095	-0.00096	-0.00095
	(A * !B * D * !Y)	0.00159	0.00149	0.00146
	(A * !B * D * !Y)	-0.00115	-0.00117	-0.00116
	(A * !B * !D * !Y)	0.00147	0.00150	0.00146
	(A * !B * !D * !Y)	-0.00094	-0.00096	-0.00095
	(!A * !B * D * !Y)	0.00177	0.00149	0.00146
	(!A * !B * D * !Y)	-0.00137	-0.00171	-0.00172

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00199	0.00198	0.00189
	(B * D * !Y)	-0.00232	-0.00231	-0.00231
	(B * !D * !Y)	0.00187	0.00188	0.00185
	(B * !D * !Y)	-0.00193	-0.00194	-0.00193
	(A * !B * D * !Y)	0.00212	0.00191	0.00186
	(A * !B * D * !Y)	-0.00234	-0.00238	-0.00236
	(A * !B * !D * !Y)	0.00188	0.00189	0.00186
	(A * !B * !D * !Y)	-0.00191	-0.00193	-0.00192
	(!A * !B * D * !Y)	0.00246	0.00189	0.00184
	(!A * !B * D * !Y)	-0.00283	-0.00350	-0.00352
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00337	0.00340	0.00319
	(B * D * !Y)	-0.00460	-0.00465	-0.00460
	(B * !D * !Y)	0.00313	0.00318	0.00310
	(B * !D * !Y)	-0.00392	-0.00399	-0.00395
	(A * !B * D * !Y)	0.00369	0.00321	0.00311
	(A * !B * D * !Y)	-0.00474	-0.00478	-0.00475
	(A * !B * !D * !Y)	0.00316	0.00321	0.00311
	(A * !B * !D * !Y)	-0.00388	-0.00395	-0.00392
	(!A * !B * D * !Y)	0.00457	0.00314	0.00308
	(!A * !B * D * !Y)	-0.00559	-0.00700	-0.00709

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00145	-0.00145	-0.00146
	(B * D * !Y)	0.00113	0.00112	0.00113
	(B * !D * !Y)	-0.00145	-0.00145	-0.00144
	(B * !D * !Y)	0.00097	0.00098	0.00098
	(A * !B * D * !Y)	-0.00146	-0.00146	-0.00146
	(A * !B * D * !Y)	0.00116	0.00117	0.00116
	(A * !B * !D * !Y)	-0.00140	-0.00142	-0.00144
	(A * !B * !D * !Y)	0.00097	0.00098	0.00096
	(!A * !B * D * !Y)	-0.00145	-0.00146	-0.00145
	(!A * !B * D * !Y)	0.00172	0.00173	0.00172
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00187	-0.00187	-0.00186
	(B * D * !Y)	0.00232	0.00231	0.00231
	(B * !D * !Y)	-0.00182	-0.00184	-0.00181
	(B * !D * !Y)	0.00197	0.00199	0.00199
	(A * !B * D * !Y)	-0.00185	-0.00186	-0.00185
	(A * !B * D * !Y)	0.00237	0.00238	0.00236
	(A * !B * !D * !Y)	-0.00170	-0.00173	-0.00180
	(A * !B * !D * !Y)	0.00201	0.00203	0.00196
	(!A * !B * D * !Y)	-0.00183	-0.00184	-0.00182
	(!A * !B * D * !Y)	0.00351	0.00353	0.00352
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00311	-0.00313	-0.00311
	(B * D * !Y)	0.00460	0.00465	0.00460
	(B * !D * !Y)	-0.00305	-0.00306	-0.00300
	(B * !D * !Y)	0.00404	0.00406	0.00407
	(A * !B * D * !Y)	-0.00311	-0.00312	-0.00310
	(A * !B * D * !Y)	0.00477	0.00478	0.00475
	(A * !B * !D * !Y)	-0.00288	-0.00292	-0.00298
	(A * !B * !D * !Y)	0.00400	0.00405	0.00401
	(!A * !B * D * !Y)	-0.00305	-0.00307	-0.00304
	(!A * !B * D * !Y)	0.00703	0.00710	0.00709

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00168	0.00171	0.00169
	(C * !Y)	-0.00087	-0.00088	-0.00087
	(B * !C * !Y)	0.00168	0.00171	0.00169
	(B * !C * !Y)	-0.00087	-0.00088	-0.00087
	(A * !B * !C * !Y)	0.00168	0.00171	0.00169
	(A * !B * !C * !Y)	-0.00087	-0.00088	-0.00087
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00204	0.00206	0.00205
	(C * !Y)	-0.00172	-0.00173	-0.00172
	(B * !C * !Y)	0.00204	0.00206	0.00205
	(B * !C * !Y)	-0.00171	-0.00172	-0.00171
	(A * !B * !C * !Y)	0.00204	0.00206	0.00205
	(A * !B * !C * !Y)	-0.00171	-0.00172	-0.00171
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00386	0.00390	0.00386
	(C * !Y)	-0.00345	-0.00347	-0.00343
	(B * !C * !Y)	0.00386	0.00390	0.00386
	(B * !C * !Y)	-0.00343	-0.00346	-0.00342
	(A * !B * !C * !Y)	0.00386	0.00393	0.00386
	(A * !B * !C * !Y)	-0.00343	-0.00349	-0.00342

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00162	-0.00164	-0.00168
	(C * !Y)	0.00093	0.00093	0.00089
	(B * !C * !Y)	-0.00155	-0.00156	-0.00166
	(B * !C * !Y)	0.00097	0.00097	0.00089
	(A * !B * !C * !Y)	-0.00144	-0.00146	-0.00164
	(A * !B * !C * !Y)	0.00102	0.00103	0.00090
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00192	-0.00193	-0.00204
	(C * !Y)	0.00184	0.00184	0.00176
	(B * !C * !Y)	-0.00171	-0.00173	-0.00200
	(B * !C * !Y)	0.00194	0.00195	0.00176
	(A * !B * !C * !Y)	-0.00150	-0.00151	-0.00194
	(A * !B * !C * !Y)	0.00208	0.00207	0.00179
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00357	-0.00360	-0.00383
	(C * !Y)	0.00372	0.00372	0.00351
	(B * !C * !Y)	-0.00321	-0.00326	-0.00376
	(B * !C * !Y)	0.00387	0.00390	0.00352
	(A * !B * !C * !Y)	-0.00272	-0.00278	-0.00363
	(A * !B * !C * !Y)	0.00416	0.00418	0.00359

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00270	0.00282	0.00273	0.00290	0.00283	0.53373
sky130_fd_sc_hs__o2111ai_2	0.00523	0.00528	0.00547	0.00533	0.00530	0.94793
sky130_fd_sc_hs__o2111ai_4	0.01043	0.01056	0.00797	0.00804	0.00796	1.64221

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111ai_1	0.00000	0.01961	0.21153
sky130_fd_sc_hs__o2111ai_2	0.00000	0.03921	0.42305
sky130_fd_sc_hs__o2111ai_4	0.00000	0.04867	0.52882

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)	0.14786	1.04420	10.85410
	A2->Y (FR)	0.13440	1.03339	10.99660
	B1->Y (FR)	0.05757	0.68872	7.89712
	C1->Y (FR)	0.05067	0.68097	7.89804
	D1->Y (FR)	0.04209	0.67222	7.88200
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.15100	0.91587	10.64970
	A2->Y (FR)	0.13020	0.89989	10.81260
	B1->Y (FR)	0.05377	0.60872	7.60720
	C1->Y (FR)	0.04613	0.59779	7.58913
	D1->Y (FR)	0.03490	0.58536	7.55939
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.15865	0.82028	10.47600
	A2->Y (FR)	0.13404	0.80727	10.71560
	B1->Y (FR)	0.09759	0.75890	10.32050
	C1->Y (FR)	0.07375	0.70839	9.85577
	D1->Y (FR)	0.05453	0.71284	10.25780

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.07628	0.51656	5.13857
	A2->Y (RF)	0.06371	0.49257	5.02168
	B1->Y (RF)	0.07047	0.55099	5.74861
	C1->Y (RF)	0.06361	0.58209	6.26193
	D1->Y (RF)	0.05362	0.59468	6.54672
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.08499	0.46581	5.22844
	A2->Y (RF)	0.06769	0.43843	5.11674
	B1->Y (RF)	0.07828	0.49614	5.82052
	C1->Y (RF)	0.06967	0.54899	6.65876
	D1->Y (RF)	0.05317	0.55626	6.95585
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.08005	0.37778	4.78066
	A2->Y (RF)	0.06817	0.36710	4.91841
	B1->Y (RF)	0.05792	0.40604	5.69617
	C1->Y (RF)	0.04928	0.45021	6.46537
	D1->Y (RF)	0.03234	0.46166	6.87038

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00214	0.00199	0.00394
	A1	0.01039	0.01026	0.01221
	A2	0.00218	0.00233	0.00635
	A2	0.00945	0.00962	0.01363
	B1	0.00114	0.00147	0.00646
	B1	0.00819	0.00851	0.01319
	C1	0.00054	0.00089	0.00578
	C1	0.00678	0.00712	0.01170
	D1	0.00004	0.00045	0.00530
	D1	0.00536	0.00576	0.01037
sky130_fd_sc_hs__o2111ai_2	A1	0.00348	0.00316	0.00689
	A1	0.02005	0.01971	0.02351
	A2	0.00354	0.00391	0.01144
	A2	0.01801	0.01838	0.02595
	B1	0.00149	0.00236	0.01169
	B1	0.01595	0.01667	0.02550
	C1	0.00048	0.00134	0.01046
	C1	0.01290	0.01371	0.02237
	D1	-0.00145	-0.00040	0.00883
	D1	0.00905	0.01009	0.01885

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00614	0.00538	0.01326
	A1	0.03856	0.03786	0.04554
	A2	0.00596	0.00684	0.02147
	A2	0.03471	0.03559	0.05025
	B1	0.00257	0.00308	0.01394
	B1	0.02723	0.02762	0.03839
	C1	0.00064	0.00112	0.01211
	C1	0.02152	0.02171	0.03277
	D1	-0.00257	-0.00145	0.00924
	D1	0.01440	0.01522	0.02629

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.01046	0.01037	0.01205
	A1	0.00200	0.00186	0.00341
	A2	0.00870	0.00862	0.01038
	A2	0.00117	0.00109	0.00262
	B1	0.00921	0.00910	0.01078
	B1	0.00106	0.00096	0.00270
	C1	0.00835	0.00824	0.01024
	C1	0.00106	0.00098	0.00269
	D1	0.00733	0.00729	0.00937
	D1	0.00101	0.00098	0.00320

sky130_fd_sc_hs__o2111ai_2	**A1**	0.02158	0.02127	0.02483
	A1	0.00456	0.00417	0.00726
	A2	0.01711	0.01700	0.02017
	A2	0.00209	0.00190	0.00505
	B1	0.01913	0.01884	0.02290
	B1	0.00185	0.00161	0.00522
	C1	0.01704	0.01680	0.02012
	C1	0.00191	0.00170	0.00505
	D1	0.01488	0.01489	0.01891
	D1	0.00178	0.00184	0.00612
sky130_fd_sc_hs__o2111ai_4	**A1**	0.04140	0.04052	0.04782
	A1	0.00809	0.00714	0.01372
	A2	0.03249	0.03220	0.03892
	A2	0.00273	0.00228	0.00901
	B1	0.03518	0.03497	0.03850
	B1	0.01029	0.01003	0.01364
	C1	0.03128	0.03112	0.03552
	C1	0.01035	0.01014	0.01361
	D1	0.02701	0.02713	0.03148
	D1	0.01028	0.01029	0.01476

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)**	0.00173	0.00153	0.00150
	(A2 * B1 * C1 * D1 * !Y)	-0.00153	-0.00177	-0.00178
	(A2 * B1 * C1 * !D1 * Y)	0.00150	0.00151	0.00149
	(A2 * B1 * C1 * !D1 * Y)	-0.00175	-0.00178	-0.00177
	(A2 * B1 * !C1 * Y)	0.00150	0.00151	0.00149
	(A2 * B1 * !C1 * Y)	-0.00175	-0.00178	-0.00177
	(A2 * !B1 * Y)	0.00150	0.00151	0.00149
	(A2 * !B1 * Y)	-0.00175	-0.00179	-0.00177
	(!A2 * B1 * C1 * !D1 * Y)	0.00138	0.00139	0.00138
	(!A2 * B1 * C1 * !D1 * Y)	-0.00180	-0.00180	-0.00179
	(!A2 * B1 * !C1 * D1 * Y)	0.00139	0.00141	0.00140
	(!A2 * B1 * !C1 * D1 * Y)	-0.00179	-0.00181	-0.00180
	(!A2 * B1 * !C1 * !D1 * Y)	0.00139	0.00141	0.00140
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00179	-0.00181	-0.00180
	(!A2 * !B1 * C1 * D1 * Y)	0.00141	0.00143	0.00142
	(!A2 * !B1 * C1 * D1 * Y)	-0.00179	-0.00180	-0.00180
	(!A2 * !B1 * !D1 * Y)	0.00141	0.00143	0.00142
	(!A2 * !B1 * !D1 * Y)	-0.00179	-0.00180	-0.00180
	(!A2 * !B1 * !C1 * D1 * Y)	0.00141	0.00143	0.00142
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00179	-0.00180	-0.00180

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00341	0.00297	0.00290
	(A2 * B1 * C1 * D1 * !Y)	-0.00301	-0.00357	-0.00358
	(A2 * B1 * C1 * !D1 * Y)	0.00289	0.00293	0.00289
	(A2 * B1 * C1 * !D1 * Y)	-0.00349	-0.00356	-0.00357
	(A2 * B1 * !C1 * Y)	0.00289	0.00293	0.00289
	(A2 * B1 * !C1 * Y)	-0.00349	-0.00356	-0.00357
	(A2 * !B1 * Y)	0.00289	0.00293	0.00289
	(A2 * !B1 * Y)	-0.00349	-0.00361	-0.00357
	(!A2 * B1 * C1 * !D1 * Y)	0.00271	0.00272	0.00270
	(!A2 * B1 * C1 * !D1 * Y)	-0.00364	-0.00364	-0.00363
	(!A2 * B1 * !C1 * D1 * Y)	0.00273	0.00275	0.00272
	(!A2 * B1 * !C1 * D1 * Y)	-0.00364	-0.00365	-0.00363
	(!A2 * B1 * !C1 * !D1 * Y)	0.00273	0.00273	0.00272
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00364	-0.00363	-0.00363
	(!A2 * !B1 * C1 * D1 * Y)	0.00275	0.00279	0.00276
	(!A2 * !B1 * C1 * D1 * Y)	-0.00362	-0.00365	-0.00363
	(!A2 * !B1 * !D1 * Y)	0.00275	0.00277	0.00276
	(!A2 * !B1 * !D1 * Y)	-0.00362	-0.00364	-0.00363
	(!A2 * !B1 * !C1 * D1 * Y)	0.00275	0.00277	0.00276
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00362	-0.00364	-0.00363

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00684	0.00601	0.00590
	(A2 * B1 * C1 * D1 * !Y)	-0.00587	-0.00695	-0.00692
	(A2 * B1 * C1 * !D1 * Y)	0.00566	0.00574	0.00567
	(A2 * B1 * C1 * !D1 * Y)	-0.00699	-0.00722	-0.00716
	(A2 * B1 * !C1 * Y)	0.00566	0.00574	0.00567
	(A2 * B1 * !C1 * Y)	-0.00699	-0.00722	-0.00716
	(A2 * !B1 * Y)	0.00566	0.00574	0.00567
	(A2 * !B1 * Y)	-0.00699	-0.00722	-0.00716
	(!A2 * B1 * C1 * !D1 * Y)	0.00526	0.00527	0.00525
	(!A2 * B1 * C1 * !D1 * Y)	-0.00725	-0.00725	-0.00724
	(!A2 * B1 * !C1 * D1 * Y)	0.00524	0.00529	0.00523
	(!A2 * B1 * !C1 * D1 * Y)	-0.00725	-0.00727	-0.00723
	(!A2 * B1 * !C1 * !D1 * Y)	0.00525	0.00523	0.00523
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00725	-0.00723	-0.00724
	(!A2 * !B1 * C1 * D1 * Y)	0.00538	0.00544	0.00540
	(!A2 * !B1 * C1 * D1 * Y)	-0.00722	-0.00726	-0.00723
	(!A2 * !B1 * !D1 * Y)	0.00533	0.00539	0.00534
	(!A2 * !B1 * !D1 * Y)	-0.00722	-0.00727	-0.00724
	(!A2 * !B1 * !C1 * D1 * Y)	0.00533	0.00539	0.00534
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00722	-0.00727	-0.00724

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)**	-0.00149	-0.00150	-0.00149
	(A2 * B1 * C1 * D1 * !Y)	0.00178	0.00179	0.00178
	(A2 * B1 * C1 * !D1 * Y)	-0.00149	-0.00149	-0.00149
	(A2 * B1 * C1 * !D1 * Y)	0.00178	0.00178	0.00177
	(A2 * B1 * !C1 * Y)	-0.00149	-0.00149	-0.00149
	(A2 * B1 * !C1 * Y)	0.00177	0.00178	0.00177
	(A2 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(A2 * !B1 * Y)	0.00178	0.00179	0.00177
	(!A2 * B1 * C1 * !D1 * Y)	-0.00127	-0.00139	-0.00138
	(!A2 * B1 * C1 * !D1 * Y)	0.00180	0.00182	0.00180
	(!A2 * B1 * !C1 * D1 * Y)	-0.00130	-0.00141	-0.00140
	(!A2 * B1 * !C1 * D1 * Y)	0.00179	0.00182	0.00180
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00130	-0.00141	-0.00140
	(!A2 * B1 * !C1 * !D1 * Y)	0.00179	0.00182	0.00180
	(!A2 * !B1 * C1 * D1 * Y)	-0.00134	-0.00143	-0.00142
	(!A2 * !B1 * C1 * D1 * Y)	0.00179	0.00182	0.00180
	(!A2 * !B1 * !D1 * Y)	-0.00135	-0.00143	-0.00142
	(!A2 * !B1 * !D1 * Y)	0.00179	0.00182	0.00180
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00135	-0.00143	-0.00142
	(!A2 * !B1 * !C1 * D1 * Y)	0.00179	0.00182	0.00180

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00289	-0.00291	-0.00289
	(A2 * B1 * C1 * D1 * !Y)	0.00357	0.00360	0.00358
	(A2 * B1 * C1 * !D1 * Y)	-0.00289	-0.00288	-0.00289
	(A2 * B1 * C1 * !D1 * Y)	0.00357	0.00356	0.00357
	(A2 * B1 * !C1 * Y)	-0.00288	-0.00288	-0.00289
	(A2 * B1 * !C1 * Y)	0.00355	0.00356	0.00357
	(A2 * !B1 * Y)	-0.00288	-0.00290	-0.00289
	(A2 * !B1 * Y)	0.00356	0.00361	0.00357
	(!A2 * B1 * C1 * !D1 * Y)	-0.00245	-0.00268	-0.00270
	(!A2 * B1 * C1 * !D1 * Y)	0.00365	0.00364	0.00364
	(!A2 * B1 * !C1 * D1 * Y)	-0.00249	-0.00270	-0.00272
	(!A2 * B1 * !C1 * D1 * Y)	0.00364	0.00365	0.00364
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00249	-0.00271	-0.00272
	(!A2 * B1 * !C1 * !D1 * Y)	0.00364	0.00366	0.00364
	(!A2 * !B1 * C1 * D1 * Y)	-0.00258	-0.00276	-0.00276
	(!A2 * !B1 * C1 * D1 * Y)	0.00363	0.00368	0.00364
	(!A2 * !B1 * !D1 * Y)	-0.00258	-0.00276	-0.00276
	(!A2 * !B1 * !D1 * Y)	0.00363	0.00368	0.00364
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00258	-0.00276	-0.00276
	(!A2 * !B1 * !C1 * D1 * Y)	0.00363	0.00368	0.00364

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00590	-0.00591	-0.00588
	(A2 * B1 * C1 * D1 * !Y)	0.00692	0.00697	0.00692
	(A2 * B1 * C1 * !D1 * Y)	-0.00566	-0.00568	-0.00565
	(A2 * B1 * C1 * !D1 * Y)	0.00716	0.00722	0.00716
	(A2 * B1 * !C1 * Y)	-0.00566	-0.00568	-0.00565
	(A2 * B1 * !C1 * Y)	0.00716	0.00722	0.00716
	(A2 * !B1 * Y)	-0.00564	-0.00568	-0.00565
	(A2 * !B1 * Y)	0.00712	0.00722	0.00716
	(!A2 * B1 * C1 * !D1 * Y)	-0.00474	-0.00527	-0.00525
	(!A2 * B1 * C1 * !D1 * Y)	0.00725	0.00734	0.00725
	(!A2 * B1 * !C1 * D1 * Y)	-0.00482	-0.00528	-0.00523
	(!A2 * B1 * !C1 * D1 * Y)	0.00725	0.00727	0.00726
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00482	-0.00523	-0.00523
	(!A2 * B1 * !C1 * !D1 * Y)	0.00725	0.00726	0.00725
	(!A2 * !B1 * C1 * D1 * Y)	-0.00503	-0.00541	-0.00540
	(!A2 * !B1 * C1 * D1 * Y)	0.00722	0.00738	0.00725
	(!A2 * !B1 * !D1 * Y)	-0.00504	-0.00539	-0.00534
	(!A2 * !B1 * !D1 * Y)	0.00722	0.00738	0.00725
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00504	-0.00539	-0.00534
	(!A2 * !B1 * !C1 * D1 * Y)	0.00722	0.00738	0.00725

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)**	0.00162	0.00165	0.00162
	(A1 * B1 * C1 * D1 * !Y)	-0.00085	-0.00086	-0.00085
	(A1 * B1 * C1 * !D1 * Y)	0.00146	0.00146	0.00146
	(A1 * B1 * C1 * !D1 * Y)	-0.00172	-0.00176	-0.00175
	(A1 * B1 * !C1 * D1 * Y)	0.00146	0.00147	0.00146
	(A1 * B1 * !C1 * D1 * Y)	-0.00172	-0.00176	-0.00175
	(A1 * B1 * !C1 * !D1 * Y)	0.00146	0.00148	0.00146
	(A1 * B1 * !C1 * !D1 * Y)	-0.00172	-0.00176	-0.00175
	(A1 * !B1 * C1 * D1 * Y)	0.00146	0.00146	0.00146
	(A1 * !B1 * C1 * D1 * Y)	-0.00172	-0.00175	-0.00175
	(A1 * !B1 * !D1 * Y)	0.00146	0.00148	0.00146
	(A1 * !B1 * !D1 * Y)	-0.00172	-0.00176	-0.00175
	(A1 * !B1 * !C1 * D1 * Y)	0.00146	0.00148	0.00146
	(A1 * !B1 * !C1 * D1 * Y)	-0.00172	-0.00176	-0.00175
	(!A1 * B1 * C1 * !D1 * Y)	0.00135	0.00135	0.00134
	(!A1 * B1 * C1 * !D1 * Y)	-0.00177	-0.00178	-0.00177
	(!A1 * B1 * !C1 * D1 * Y)	0.00136	0.00137	0.00136
	(!A1 * B1 * !C1 * D1 * Y)	-0.00177	-0.00178	-0.00177
	(!A1 * B1 * !C1 * !D1 * Y)	0.00136	0.00137	0.00136
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00177	-0.00178	-0.00177
	(!A1 * !B1 * C1 * D1 * Y)	0.00137	0.00140	0.00138
	(!A1 * !B1 * C1 * D1 * Y)	-0.00176	-0.00178	-0.00177
	(!A1 * !B1 * !D1 * Y)	0.00137	0.00139	0.00138
	(!A1 * !B1 * !D1 * Y)	-0.00177	-0.00177	-0.00177
	(!A1 * !B1 * !C1 * D1 * Y)	0.00137	0.00139	0.00138
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00177	-0.00177	-0.00177

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00316	0.00321	0.00316
	(A1 * B1 * C1 * D1 * !Y)	-0.00174	-0.00176	-0.00173
	(A1 * B1 * C1 * !D1 * Y)	0.00282	0.00285	0.00283
	(A1 * B1 * C1 * !D1 * Y)	-0.00343	-0.00353	-0.00352
	(A1 * B1 * !C1 * D1 * Y)	0.00282	0.00285	0.00283
	(A1 * B1 * !C1 * D1 * Y)	-0.00344	-0.00353	-0.00352
	(A1 * B1 * !C1 * !D1 * Y)	0.00283	0.00283	0.00283
	(A1 * B1 * !C1 * !D1 * Y)	-0.00344	-0.00354	-0.00353
	(A1 * !B1 * C1 * D1 * Y)	0.00282	0.00285	0.00283
	(A1 * !B1 * C1 * D1 * Y)	-0.00344	-0.00353	-0.00352
	(A1 * !B1 * !D1 * Y)	0.00283	0.00283	0.00283
	(A1 * !B1 * !D1 * Y)	-0.00344	-0.00354	-0.00353
	(A1 * !B1 * !C1 * D1 * Y)	0.00282	0.00283	0.00283
	(A1 * !B1 * !C1 * D1 * Y)	-0.00343	-0.00354	-0.00353
	(!A1 * B1 * C1 * !D1 * Y)	0.00263	0.00265	0.00264
	(!A1 * B1 * C1 * !D1 * Y)	-0.00358	-0.00359	-0.00358
	(!A1 * B1 * !C1 * D1 * Y)	0.00266	0.00269	0.00266
	(!A1 * B1 * !C1 * D1 * Y)	-0.00358	-0.00360	-0.00358
	(!A1 * B1 * !C1 * !D1 * Y)	0.00266	0.00268	0.00266
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00358	-0.00360	-0.00358
	(!A1 * !B1 * C1 * D1 * Y)	0.00268	0.00272	0.00269
	(!A1 * !B1 * C1 * D1 * Y)	-0.00357	-0.00360	-0.00358
	(!A1 * !B1 * !D1 * Y)	0.00269	0.00270	0.00269
	(!A1 * !B1 * !D1 * Y)	-0.00357	-0.00359	-0.00358
	(!A1 * !B1 * !C1 * D1 * Y)	0.00269	0.00271	0.00269
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00357	-0.00359	-0.00358

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00654	0.00662	0.00651
	(A1 * B1 * C1 * D1 * !Y)	-0.00350	-0.00353	-0.00347
	(A1 * B1 * C1 * !D1 * Y)	0.00574	0.00581	0.00576
	(A1 * B1 * C1 * !D1 * Y)	-0.00696	-0.00712	-0.00712
	(A1 * B1 * !C1 * D1 * Y)	0.00575	0.00581	0.00576
	(A1 * B1 * !C1 * D1 * Y)	-0.00696	-0.00713	-0.00712
	(A1 * B1 * !C1 * !D1 * Y)	0.00574	0.00578	0.00576
	(A1 * B1 * !C1 * !D1 * Y)	-0.00696	-0.00717	-0.00713
	(A1 * !B1 * C1 * D1 * Y)	0.00575	0.00582	0.00576
	(A1 * !B1 * C1 * D1 * Y)	-0.00697	-0.00712	-0.00712
	(A1 * !B1 * !D1 * Y)	0.00575	0.00578	0.00576
	(A1 * !B1 * !D1 * Y)	-0.00698	-0.00712	-0.00713
	(A1 * !B1 * !C1 * D1 * Y)	0.00576	0.00579	0.00576
	(A1 * !B1 * !C1 * D1 * Y)	-0.00698	-0.00711	-0.00713
	(!A1 * B1 * C1 * !D1 * Y)	0.00524	0.00527	0.00525
	(!A1 * B1 * C1 * !D1 * Y)	-0.00723	-0.00724	-0.00723
	(!A1 * B1 * !C1 * D1 * Y)	0.00532	0.00529	0.00530
	(!A1 * B1 * !C1 * D1 * Y)	-0.00724	-0.00723	-0.00723
	(!A1 * B1 * !C1 * !D1 * Y)	0.00532	0.00529	0.00529
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00724	-0.00723	-0.00723
	(!A1 * !B1 * C1 * D1 * Y)	0.00542	0.00545	0.00542
	(!A1 * !B1 * C1 * D1 * Y)	-0.00721	-0.00726	-0.00723
	(!A1 * !B1 * !D1 * Y)	0.00542	0.00547	0.00541
	(!A1 * !B1 * !D1 * Y)	-0.00721	-0.00727	-0.00723
	(!A1 * !B1 * !C1 * D1 * Y)	0.00542	0.00547	0.00541
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00721	-0.00727	-0.00723

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)**	-0.00156	-0.00157	-0.00161
	(A1 * B1 * C1 * D1 * !Y)	0.00091	0.00091	0.00087
	(A1 * B1 * C1 * !D1 * Y)	-0.00145	-0.00146	-0.00146
	(A1 * B1 * C1 * !D1 * Y)	0.00174	0.00176	0.00175
	(A1 * B1 * !C1 * D1 * Y)	-0.00145	-0.00146	-0.00146
	(A1 * B1 * !C1 * D1 * Y)	0.00174	0.00176	0.00175
	(A1 * B1 * !C1 * !D1 * Y)	-0.00145	-0.00146	-0.00146
	(A1 * B1 * !C1 * !D1 * Y)	0.00174	0.00176	0.00175
	(A1 * !B1 * C1 * D1 * Y)	-0.00146	-0.00146	-0.00146
	(A1 * !B1 * C1 * D1 * Y)	0.00175	0.00176	0.00175
	(A1 * !B1 * !D1 * Y)	-0.00145	-0.00146	-0.00146
	(A1 * !B1 * !D1 * Y)	0.00174	0.00176	0.00175
	(A1 * !B1 * !C1 * D1 * Y)	-0.00145	-0.00146	-0.00146
	(A1 * !B1 * !C1 * D1 * Y)	0.00174	0.00176	0.00175
	(!A1 * B1 * C1 * !D1 * Y)	-0.00122	-0.00135	-0.00134
	(!A1 * B1 * C1 * !D1 * Y)	0.00177	0.00179	0.00178
	(!A1 * B1 * !C1 * D1 * Y)	-0.00125	-0.00137	-0.00136
	(!A1 * B1 * !C1 * D1 * Y)	0.00177	0.00180	0.00178
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00125	-0.00137	-0.00136
	(!A1 * B1 * !C1 * !D1 * Y)	0.00177	0.00180	0.00178
	(!A1 * !B1 * C1 * D1 * Y)	-0.00132	-0.00139	-0.00138
	(!A1 * !B1 * C1 * D1 * Y)	0.00177	0.00179	0.00178
	(!A1 * !B1 * !D1 * Y)	-0.00132	-0.00138	-0.00138
	(!A1 * !B1 * !D1 * Y)	0.00177	0.00177	0.00178
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00132	-0.00138	-0.00138
	(!A1 * !B1 * !C1 * D1 * Y)	0.00177	0.00177	0.00178

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00298	-0.00300	-0.00313
	(A1 * B1 * C1 * D1 * !Y)	0.00190	0.00191	0.00178
	(A1 * B1 * C1 * !D1 * Y)	-0.00282	-0.00283	-0.00283
	(A1 * B1 * C1 * !D1 * Y)	0.00351	0.00353	0.00352
	(A1 * B1 * !C1 * D1 * Y)	-0.00282	-0.00283	-0.00283
	(A1 * B1 * !C1 * D1 * Y)	0.00351	0.00353	0.00352
	(A1 * B1 * !C1 * !D1 * Y)	-0.00282	-0.00283	-0.00283
	(A1 * B1 * !C1 * !D1 * Y)	0.00351	0.00354	0.00353
	(A1 * !B1 * C1 * D1 * Y)	-0.00282	-0.00283	-0.00283
	(A1 * !B1 * C1 * D1 * Y)	0.00351	0.00353	0.00352
	(A1 * !B1 * !D1 * Y)	-0.00282	-0.00283	-0.00283
	(A1 * !B1 * !D1 * Y)	0.00352	0.00354	0.00353
	(A1 * !B1 * !C1 * D1 * Y)	-0.00282	-0.00283	-0.00283
	(A1 * !B1 * !C1 * D1 * Y)	0.00352	0.00354	0.00353
	(!A1 * B1 * C1 * !D1 * Y)	-0.00237	-0.00265	-0.00264
	(!A1 * B1 * C1 * !D1 * Y)	0.00358	0.00363	0.00359
	(!A1 * B1 * !C1 * D1 * Y)	-0.00241	-0.00265	-0.00266
	(!A1 * B1 * !C1 * D1 * Y)	0.00358	0.00360	0.00359
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00241	-0.00265	-0.00266
	(!A1 * B1 * !C1 * !D1 * Y)	0.00358	0.00360	0.00359
	(!A1 * !B1 * C1 * D1 * Y)	-0.00251	-0.00270	-0.00269
	(!A1 * !B1 * C1 * D1 * Y)	0.00357	0.00362	0.00359
	(!A1 * !B1 * !D1 * Y)	-0.00252	-0.00270	-0.00269
	(!A1 * !B1 * !D1 * Y)	0.00357	0.00363	0.00359
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00252	-0.00270	-0.00269
	(!A1 * !B1 * !C1 * D1 * Y)	0.00357	0.00363	0.00359

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00614	-0.00619	-0.00646
	(A1 * B1 * C1 * D1 * !Y)	0.00382	0.00383	0.00356
	(A1 * B1 * C1 * !D1 * Y)	-0.00574	-0.00575	-0.00575
	(A1 * B1 * C1 * !D1 * Y)	0.00712	0.00712	0.00712
	(A1 * B1 * !C1 * D1 * Y)	-0.00575	-0.00576	-0.00575
	(A1 * B1 * !C1 * D1 * Y)	0.00712	0.00713	0.00712
	(A1 * B1 * !C1 * !D1 * Y)	-0.00574	-0.00578	-0.00575
	(A1 * B1 * !C1 * !D1 * Y)	0.00715	0.00719	0.00713
	(A1 * !B1 * C1 * D1 * Y)	-0.00572	-0.00575	-0.00575
	(A1 * !B1 * C1 * D1 * Y)	0.00708	0.00712	0.00712
	(A1 * !B1 * !D1 * Y)	-0.00574	-0.00574	-0.00575
	(A1 * !B1 * !D1 * Y)	0.00711	0.00712	0.00713
	(A1 * !B1 * !C1 * D1 * Y)	-0.00574	-0.00573	-0.00575
	(A1 * !B1 * !C1 * D1 * Y)	0.00711	0.00711	0.00713
	(!A1 * B1 * C1 * !D1 * Y)	-0.00484	-0.00527	-0.00525
	(!A1 * B1 * C1 * !D1 * Y)	0.00724	0.00733	0.00725
	(!A1 * B1 * !C1 * D1 * Y)	-0.00492	-0.00529	-0.00530
	(!A1 * B1 * !C1 * D1 * Y)	0.00724	0.00733	0.00725
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00492	-0.00529	-0.00529
	(!A1 * B1 * !C1 * !D1 * Y)	0.00724	0.00733	0.00725
	(!A1 * !B1 * C1 * D1 * Y)	-0.00511	-0.00545	-0.00542
	(!A1 * !B1 * C1 * D1 * Y)	0.00721	0.00737	0.00725
	(!A1 * !B1 * !D1 * Y)	-0.00512	-0.00547	-0.00541
	(!A1 * !B1 * !D1 * Y)	0.00721	0.00737	0.00725
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00512	-0.00547	-0.00541
	(!A1 * !B1 * !C1 * D1 * Y)	0.00721	0.00737	0.00725

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)**	0.00130	0.00131	0.00130
	(A2 * C1 * !D1 * Y)	-0.00179	-0.00179	-0.00179
	(A2 * !C1 * D1 * Y)	0.00134	0.00135	0.00134
	(A2 * !C1 * D1 * Y)	-0.00179	-0.00180	-0.00179
	(A2 * !C1 * !D1 * Y)	0.00134	0.00136	0.00134
	(A2 * !C1 * !D1 * Y)	-0.00179	-0.00180	-0.00179
	(A1 * !A2 * C1 * !D1 * Y)	0.00130	0.00132	0.00131
	(A1 * !A2 * C1 * !D1 * Y)	-0.00179	-0.00180	-0.00179
	(A1 * !A2 * !C1 * D1 * Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * !C1 * D1 * Y)	-0.00179	-0.00179	-0.00179
	(A1 * !A2 * !C1 * !D1 * Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00179	-0.00180	-0.00179
	(!A1 * !A2 * C1 * D1 * Y)	0.00064	0.00064	0.00064
	(!A1 * !A2 * C1 * D1 * Y)	-0.00176	-0.00175	-0.00175
	(!A1 * !A2 * C1 * !D1 * Y)	0.00075	0.00075	0.00074
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00180	-0.00179	-0.00179
	(!A1 * !A2 * !C1 * D1 * Y)	0.00079	0.00079	0.00079
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00179	-0.00180	-0.00179
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00081	0.00082	0.00081
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00179	-0.00180	-0.00179

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00279	0.00283	0.00281
	(A2 * C1 * !D1 * Y)	-0.00370	-0.00373	-0.00371
	(A2 * !C1 * D1 * Y)	0.00285	0.00289	0.00286
	(A2 * !C1 * D1 * Y)	-0.00371	-0.00374	-0.00371
	(A2 * !C1 * !D1 * Y)	0.00285	0.00287	0.00286
	(A2 * !C1 * !D1 * Y)	-0.00371	-0.00372	-0.00371
	(A1 * !A2 * C1 * !D1 * Y)	0.00279	0.00282	0.00281
	(A1 * !A2 * C1 * !D1 * Y)	-0.00370	-0.00372	-0.00371
	(A1 * !A2 * !C1 * D1 * Y)	0.00284	0.00286	0.00284
	(A1 * !A2 * !C1 * D1 * Y)	-0.00370	-0.00374	-0.00371
	(A1 * !A2 * !C1 * !D1 * Y)	0.00284	0.00286	0.00284
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00370	-0.00373	-0.00371
	(!A1 * !A2 * C1 * D1 * Y)	0.00135	0.00136	0.00137
	(!A1 * !A2 * C1 * D1 * Y)	-0.00363	-0.00366	-0.00361
	(!A1 * !A2 * C1 * !D1 * Y)	0.00160	0.00160	0.00159
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00372	-0.00373	-0.00372
	(!A1 * !A2 * !C1 * D1 * Y)	0.00164	0.00164	0.00163
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00372	-0.00373	-0.00371
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00169	0.00169	0.00168
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00370	-0.00374	-0.00371

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00539	0.00544	0.00539
	(A2 * C1 * !D1 * Y)	-0.00388	-0.00390	-0.00388
	(A2 * !C1 * D1 * Y)	0.00543	0.00552	0.00546
	(A2 * !C1 * D1 * Y)	-0.00386	-0.00390	-0.00388
	(A2 * !C1 * !D1 * Y)	0.00542	0.00550	0.00546
	(A2 * !C1 * !D1 * Y)	-0.00386	-0.00389	-0.00388
	(A1 * !A2 * C1 * !D1 * Y)	0.00537	0.00543	0.00539
	(A1 * !A2 * C1 * !D1 * Y)	-0.00387	-0.00390	-0.00388
	(A1 * !A2 * !C1 * D1 * Y)	0.00547	0.00551	0.00546
	(A1 * !A2 * !C1 * D1 * Y)	-0.00388	-0.00390	-0.00388
	(A1 * !A2 * !C1 * !D1 * Y)	0.00542	0.00547	0.00546
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00386	-0.00388	-0.00388
	(!A1 * !A2 * C1 * D1 * Y)	0.00249	0.00249	0.00251
	(!A1 * !A2 * C1 * D1 * Y)	-0.00373	-0.00372	-0.00369
	(!A1 * !A2 * C1 * !D1 * Y)	0.00294	0.00294	0.00292
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00391	-0.00392	-0.00390
	(!A1 * !A2 * !C1 * D1 * Y)	0.00300	0.00303	0.00301
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00387	-0.00390	-0.00388
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00311	0.00313	0.00310
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00388	-0.00391	-0.00388

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)**	-0.00120	-0.00131	-0.00130
	(A2 * C1 * !D1 * Y)	0.00180	0.00179	0.00180
	(A2 * !C1 * D1 * Y)	-0.00128	-0.00135	-0.00134
	(A2 * !C1 * D1 * Y)	0.00179	0.00181	0.00180
	(A2 * !C1 * !D1 * Y)	-0.00129	-0.00136	-0.00134
	(A2 * !C1 * !D1 * Y)	0.00179	0.00181	0.00180
	(A1 * !A2 * C1 * !D1 * Y)	-0.00118	-0.00132	-0.00131
	(A1 * !A2 * C1 * !D1 * Y)	0.00180	0.00181	0.00180
	(A1 * !A2 * !C1 * D1 * Y)	-0.00128	-0.00135	-0.00134
	(A1 * !A2 * !C1 * D1 * Y)	0.00180	0.00181	0.00180
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00129	-0.00135	-0.00134
	(A1 * !A2 * !C1 * !D1 * Y)	0.00180	0.00181	0.00180
	(!A1 * !A2 * C1 * D1 * Y)	-0.00059	-0.00060	-0.00060
	(!A1 * !A2 * C1 * D1 * Y)	0.00182	0.00185	0.00181
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00075	-0.00075	-0.00074
	(!A1 * !A2 * C1 * !D1 * Y)	0.00181	0.00184	0.00180
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * !C1 * D1 * Y)	0.00185	0.00185	0.00180
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00179	0.00182	0.00180

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00259	-0.00280	-0.00281
	(A2 * C1 * !D1 * Y)	0.00374	0.00374	0.00372
	(A2 * !C1 * D1 * Y)	-0.00271	-0.00287	-0.00286
	(A2 * !C1 * D1 * Y)	0.00371	0.00376	0.00372
	(A2 * !C1 * !D1 * Y)	-0.00273	-0.00287	-0.00286
	(A2 * !C1 * !D1 * Y)	0.00371	0.00376	0.00372
	(A1 * !A2 * C1 * !D1 * Y)	-0.00253	-0.00282	-0.00281
	(A1 * !A2 * C1 * !D1 * Y)	0.00374	0.00375	0.00372
	(A1 * !A2 * !C1 * D1 * Y)	-0.00268	-0.00286	-0.00284
	(A1 * !A2 * !C1 * D1 * Y)	0.00370	0.00376	0.00372
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00271	-0.00286	-0.00284
	(A1 * !A2 * !C1 * !D1 * Y)	0.00370	0.00376	0.00372
	(!A1 * !A2 * C1 * D1 * Y)	-0.00128	-0.00130	-0.00128
	(!A1 * !A2 * C1 * D1 * Y)	0.00374	0.00381	0.00374
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00160	-0.00160	-0.00159
	(!A1 * !A2 * C1 * !D1 * Y)	0.00372	0.00381	0.00373
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00164	-0.00164	-0.00163
	(!A1 * !A2 * !C1 * D1 * Y)	0.00377	0.00380	0.00373
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00169	-0.00169	-0.00168
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00370	0.00377	0.00373

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00487	-0.00541	-0.00539
	(A2 * C1 * !D1 * Y)	0.00392	0.00391	0.00389
	(A2 * !C1 * D1 * Y)	-0.00519	-0.00552	-0.00546
	(A2 * !C1 * D1 * Y)	0.00388	0.00392	0.00389
	(A2 * !C1 * !D1 * Y)	-0.00524	-0.00550	-0.00546
	(A2 * !C1 * !D1 * Y)	0.00388	0.00392	0.00389
	(A1 * !A2 * C1 * !D1 * Y)	-0.00481	-0.00543	-0.00539
	(A1 * !A2 * C1 * !D1 * Y)	0.00393	0.00392	0.00389
	(A1 * !A2 * !C1 * D1 * Y)	-0.00515	-0.00551	-0.00546
	(A1 * !A2 * !C1 * D1 * Y)	0.00388	0.00392	0.00389
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00521	-0.00547	-0.00546
	(A1 * !A2 * !C1 * !D1 * Y)	0.00388	0.00392	0.00389
	(!A1 * !A2 * C1 * D1 * Y)	-0.00233	-0.00237	-0.00235
	(!A1 * !A2 * C1 * D1 * Y)	0.00395	0.00402	0.00392
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00294	-0.00294	-0.00292
	(!A1 * !A2 * C1 * !D1 * Y)	0.00392	0.00402	0.00390
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00300	-0.00303	-0.00301
	(!A1 * !A2 * !C1 * D1 * Y)	0.00408	0.00406	0.00391
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00311	-0.00313	-0.00310
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00388	0.00394	0.00389

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)**	0.00138	0.00138	0.00138
	(A2 * B1 * !D1 * Y)	-0.00185	-0.00186	-0.00185
	(A2 * !B1 * D1 * Y)	0.00064	0.00064	0.00064
	(A2 * !B1 * D1 * Y)	-0.00185	-0.00185	-0.00184
	(A2 * !B1 * !D1 * Y)	0.00074	0.00073	0.00074
	(A2 * !B1 * !D1 * Y)	-0.00185	-0.00185	-0.00186
	(A1 * !A2 * B1 * !D1 * Y)	0.00137	0.00139	0.00138
	(A1 * !A2 * B1 * !D1 * Y)	-0.00185	-0.00186	-0.00185
	(!A2 * !B1 * D1 * Y)	0.00064	0.00064	0.00064
	(!A2 * !B1 * D1 * Y)	-0.00185	-0.00185	-0.00184
	(!A2 * !B1 * !D1 * Y)	0.00074	0.00074	0.00074
	(!A2 * !B1 * !D1 * Y)	-0.00185	-0.00186	-0.00186
	(!A1 * !A2 * B1 * D1 * Y)	0.00062	0.00062	0.00061
	(!A1 * !A2 * B1 * D1 * Y)	-0.00186	-0.00185	-0.00184
	(!A1 * !A2 * B1 * !D1 * Y)	0.00078	0.00078	0.00078
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00185	-0.00186	-0.00185

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00272	0.00272	0.00272
	(A2 * B1 * !D1 * Y)	-0.00363	-0.00362	-0.00362
	(A2 * !B1 * D1 * Y)	0.00127	0.00128	0.00129
	(A2 * !B1 * D1 * Y)	-0.00360	-0.00362	-0.00360
	(A2 * !B1 * !D1 * Y)	0.00153	0.00153	0.00153
	(A2 * !B1 * !D1 * Y)	-0.00363	-0.00363	-0.00363
	(A1 * !A2 * B1 * !D1 * Y)	0.00272	0.00273	0.00272
	(A1 * !A2 * B1 * !D1 * Y)	-0.00363	-0.00362	-0.00362
	(!A2 * !B1 * D1 * Y)	0.00128	0.00128	0.00129
	(!A2 * !B1 * D1 * Y)	-0.00361	-0.00362	-0.00360
	(!A2 * !B1 * !D1 * Y)	0.00152	0.00153	0.00153
	(!A2 * !B1 * !D1 * Y)	-0.00362	-0.00364	-0.00363
	(!A1 * !A2 * B1 * D1 * Y)	0.00120	0.00121	0.00123
	(!A1 * !A2 * B1 * D1 * Y)	-0.00360	-0.00363	-0.00360
	(!A1 * !A2 * B1 * !D1 * Y)	0.00155	0.00157	0.00156
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00362	-0.00364	-0.00363

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00536	0.00540	0.00538
	(A2 * B1 * !D1 * Y)	-0.00381	-0.00383	-0.00381
	(A2 * !B1 * D1 * Y)	0.00240	0.00240	0.00240
	(A2 * !B1 * D1 * Y)	-0.00383	-0.00382	-0.00380
	(A2 * !B1 * !D1 * Y)	0.00280	0.00281	0.00281
	(A2 * !B1 * !D1 * Y)	-0.00386	-0.00387	-0.00387
	(A1 * !A2 * B1 * !D1 * Y)	0.00535	0.00540	0.00538
	(A1 * !A2 * B1 * !D1 * Y)	-0.00381	-0.00383	-0.00381
	(!A2 * !B1 * D1 * Y)	0.00241	0.00240	0.00240
	(!A2 * !B1 * D1 * Y)	-0.00383	-0.00383	-0.00380
	(!A2 * !B1 * !D1 * Y)	0.00280	0.00281	0.00281
	(!A2 * !B1 * !D1 * Y)	-0.00386	-0.00386	-0.00387
	(!A1 * !A2 * B1 * D1 * Y)	0.00230	0.00230	0.00231
	(!A1 * !A2 * B1 * D1 * Y)	-0.00382	-0.00382	-0.00380
	(!A1 * !A2 * B1 * !D1 * Y)	0.00293	0.00296	0.00294
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00384	-0.00387	-0.00385

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)**	-0.00125	-0.00138	-0.00138
	(A2 * B1 * !D1 * Y)	0.00194	0.00187	0.00186
	(A2 * !B1 * D1 * Y)	-0.00061	-0.00062	-0.00062
	(A2 * !B1 * D1 * Y)	0.00189	0.00192	0.00186
	(A2 * !B1 * !D1 * Y)	-0.00074	-0.00073	-0.00074
	(A2 * !B1 * !D1 * Y)	0.00195	0.00196	0.00188
	(A1 * !A2 * B1 * !D1 * Y)	-0.00125	-0.00139	-0.00138
	(A1 * !A2 * B1 * !D1 * Y)	0.00197	0.00188	0.00186
	(!A2 * !B1 * D1 * Y)	-0.00061	-0.00062	-0.00062
	(!A2 * !B1 * D1 * Y)	0.00189	0.00192	0.00186
	(!A2 * !B1 * !D1 * Y)	-0.00074	-0.00074	-0.00074
	(!A2 * !B1 * !D1 * Y)	0.00194	0.00196	0.00188
	(!A1 * !A2 * B1 * D1 * Y)	-0.00058	-0.00059	-0.00059
	(!A1 * !A2 * B1 * D1 * Y)	0.00189	0.00192	0.00186
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * B1 * !D1 * Y)	0.00196	0.00193	0.00186

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00241	-0.00272	-0.00272
	(A2 * B1 * !D1 * Y)	0.00387	0.00366	0.00363
	(A2 * !B1 * D1 * Y)	-0.00121	-0.00122	-0.00124
	(A2 * !B1 * D1 * Y)	0.00374	0.00379	0.00365
	(A2 * !B1 * !D1 * Y)	-0.00153	-0.00153	-0.00153
	(A2 * !B1 * !D1 * Y)	0.00379	0.00385	0.00368
	(A1 * !A2 * B1 * !D1 * Y)	-0.00238	-0.00273	-0.00272
	(A1 * !A2 * B1 * !D1 * Y)	0.00389	0.00367	0.00363
	(!A2 * !B1 * D1 * Y)	-0.00121	-0.00122	-0.00124
	(!A2 * !B1 * D1 * Y)	0.00374	0.00378	0.00365
	(!A2 * !B1 * !D1 * Y)	-0.00152	-0.00153	-0.00153
	(!A2 * !B1 * !D1 * Y)	0.00383	0.00385	0.00368
	(!A1 * !A2 * B1 * D1 * Y)	-0.00117	-0.00119	-0.00120
	(!A1 * !A2 * B1 * D1 * Y)	0.00374	0.00378	0.00365
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00155	-0.00157	-0.00156
	(!A1 * !A2 * B1 * !D1 * Y)	0.00381	0.00376	0.00363

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00471	-0.00540	-0.00538
	(A2 * B1 * !D1 * Y)	0.00440	0.00388	0.00383
	(A2 * !B1 * D1 * Y)	-0.00227	-0.00230	-0.00232
	(A2 * !B1 * D1 * Y)	0.00404	0.00408	0.00388
	(A2 * !B1 * !D1 * Y)	-0.00280	-0.00281	-0.00281
	(A2 * !B1 * !D1 * Y)	0.00426	0.00427	0.00395
	(A1 * !A2 * B1 * !D1 * Y)	-0.00468	-0.00540	-0.00538
	(A1 * !A2 * B1 * !D1 * Y)	0.00444	0.00388	0.00383
	(!A2 * !B1 * D1 * Y)	-0.00227	-0.00230	-0.00232
	(!A2 * !B1 * D1 * Y)	0.00404	0.00408	0.00388
	(!A2 * !B1 * !D1 * Y)	-0.00280	-0.00281	-0.00281
	(!A2 * !B1 * !D1 * Y)	0.00426	0.00427	0.00395
	(!A1 * !A2 * B1 * D1 * Y)	-0.00221	-0.00223	-0.00225
	(!A1 * !A2 * B1 * D1 * Y)	0.00404	0.00408	0.00388
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00293	-0.00296	-0.00294
	(!A1 * !A2 * B1 * !D1 * Y)	0.00434	0.00407	0.00386

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00047	0.00047	0.00046
	(A2 * !C1 * Y)	-0.00214	-0.00214	-0.00216
	(A2 * !B1 * C1 * Y)	0.00049	0.00049	0.00045
	(A2 * !B1 * C1 * Y)	-0.00209	-0.00210	-0.00216
	(!A2 * !C1 * Y)	0.00047	0.00047	0.00046
	(!A2 * !C1 * Y)	-0.00212	-0.00214	-0.00216
	(!A2 * !B1 * C1 * Y)	0.00048	0.00049	0.00045
	(!A2 * !B1 * C1 * Y)	-0.00208	-0.00209	-0.00216
	(!A1 * !A2 * B1 * C1 * Y)	0.00054	0.00054	0.00047
	(!A1 * !A2 * B1 * C1 * Y)	-0.00200	-0.00201	-0.00214

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00108	0.00109	0.00104
	(A2 * !C1 * Y)	-0.00407	-0.00410	-0.00417
	(A2 * !B1 * C1 * Y)	0.00109	0.00110	0.00100
	(A2 * !B1 * C1 * Y)	-0.00396	-0.00400	-0.00415
	(!A2 * !C1 * Y)	0.00108	0.00109	0.00104
	(!A2 * !C1 * Y)	-0.00407	-0.00410	-0.00417
	(!A2 * !B1 * C1 * Y)	0.00109	0.00109	0.00100
	(!A2 * !B1 * C1 * Y)	-0.00396	-0.00400	-0.00415
	(!A1 * !A2 * B1 * C1 * Y)	0.00115	0.00115	0.00100
	(!A1 * !A2 * B1 * C1 * Y)	-0.00378	-0.00383	-0.00412
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00194	0.00193	0.00185
	(A2 * !C1 * Y)	-0.00486	-0.00488	-0.00502
	(A2 * !B1 * C1 * Y)	0.00195	0.00194	0.00178
	(A2 * !B1 * C1 * Y)	-0.00464	-0.00467	-0.00498
	(!A2 * !C1 * Y)	0.00192	0.00193	0.00185
	(!A2 * !C1 * Y)	-0.00483	-0.00488	-0.00502
	(!A2 * !B1 * C1 * Y)	0.00193	0.00194	0.00178
	(!A2 * !B1 * C1 * Y)	-0.00462	-0.00466	-0.00498
	(!A1 * !A2 * B1 * C1 * Y)	0.00206	0.00207	0.00180
	(!A1 * !A2 * B1 * C1 * Y)	-0.00427	-0.00433	-0.00491

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00045	-0.00046	-0.00045
	(A2 * !C1 * Y)	0.00216	0.00220	0.00217
	(A2 * !B1 * C1 * Y)	-0.00044	-0.00045	-0.00044
	(A2 * !B1 * C1 * Y)	0.00216	0.00219	0.00217
	(!A2 * !C1 * Y)	-0.00045	-0.00046	-0.00045
	(!A2 * !C1 * Y)	0.00216	0.00220	0.00217
	(!A2 * !B1 * C1 * Y)	-0.00044	-0.00045	-0.00044
	(!A2 * !B1 * C1 * Y)	0.00216	0.00219	0.00217
	(!A1 * !A2 * B1 * C1 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B1 * C1 * Y)	0.00216	0.00217	0.00217
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00101	-0.00101	-0.00101
	(A2 * !C1 * Y)	0.00417	0.00417	0.00418
	(A2 * !B1 * C1 * Y)	-0.00098	-0.00098	-0.00098
	(A2 * !B1 * C1 * Y)	0.00416	0.00417	0.00418
	(!A2 * !C1 * Y)	-0.00101	-0.00101	-0.00101
	(!A2 * !C1 * Y)	0.00417	0.00419	0.00418
	(!A2 * !B1 * C1 * Y)	-0.00098	-0.00098	-0.00098
	(!A2 * !B1 * C1 * Y)	0.00417	0.00418	0.00418
	(!A1 * !A2 * B1 * C1 * Y)	-0.00098	-0.00098	-0.00097
	(!A1 * !A2 * B1 * C1 * Y)	0.00418	0.00419	0.00418
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00181	-0.00180	-0.00179
	(A2 * !C1 * Y)	0.00504	0.00504	0.00502
	(A2 * !B1 * C1 * Y)	-0.00177	-0.00176	-0.00174
	(A2 * !B1 * C1 * Y)	0.00503	0.00503	0.00502
	(!A2 * !C1 * Y)	-0.00182	-0.00183	-0.00179
	(!A2 * !C1 * Y)	0.00504	0.00511	0.00502
	(!A2 * !B1 * C1 * Y)	-0.00177	-0.00178	-0.00174
	(!A2 * !B1 * C1 * Y)	0.00503	0.00509	0.00502
	(!A1 * !A2 * B1 * C1 * Y)	-0.00176	-0.00175	-0.00174
	(!A1 * !A2 * B1 * C1 * Y)	0.00503	0.00503	0.00502

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00260	0.00266	0.00246	0.00267	0.00269	1.03905
sky130_fd_sc_hs__o2111a_2	0.00263	0.00263	0.00259	0.00268	0.00278	2.13043
sky130_fd_sc_hs__o2111a_4	0.00501	0.00540	0.00458	0.00472	0.00476	3.95035

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	0.13914	1.01984
sky130_fd_sc_hs__o2111a_2	0.00000	0.14312	0.55103
sky130_fd_sc_hs__o2111a_4	0.00000	0.37529	2.05207

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)	0.13100	0.66578	6.38427
	A2->X (RR)	0.11604	0.64359	6.38410
	B1->X (RR)	0.12458	0.67614	6.61948
	C1->X (RR)	0.11842	0.68070	6.66202
	D1->X (RR)	0.10909	0.66889	6.58391
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.14335	0.59068	6.46536
	A2->X (RR)	0.12826	0.56966	6.46388
	B1->X (RR)	0.13763	0.60520	6.68613
	C1->X (RR)	0.13114	0.61458	6.74153
	D1->X (RR)	0.12090	0.60652	6.70404
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.16719	0.53714	6.44559
	A2->X (RR)	0.15316	0.52750	6.45961
	B1->X (RR)	0.16105	0.56232	6.76201
	C1->X (RR)	0.15409	0.59077	6.89491
	D1->X (RR)	0.13817	0.57557	6.87507

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.19904	0.68234	4.82545
	A2->X (FF)	0.18542	0.67942	4.77046
	B1->X (FF)	0.11183	0.58638	4.50618
	C1->X (FF)	0.10071	0.56309	4.42571
	D1->X (FF)	0.08401	0.52866	4.35112
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.23123	0.71159	5.12784
	A2->X (FF)	0.21748	0.71058	5.07946
	B1->X (FF)	0.11037	0.57242	4.70079
	C1->X (FF)	0.10172	0.55385	4.62349
	D1->X (FF)	0.08772	0.52412	4.55130
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.27059	0.71581	5.15834
	A2->X (FF)	0.25836	0.73317	5.22830
	B1->X (FF)	0.14212	0.59084	4.79757
	C1->X (FF)	0.13124	0.56909	4.69186
	D1->X (FF)	0.11387	0.53724	4.60575

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.01281	0.01294	0.02386
	A1	0.00467	0.00480	0.01590
	A2	0.01119	0.01128	0.02787
	A2	0.00394	0.00403	0.02080
	B1	0.00978	0.01012	0.03222
	B1	0.00402	0.00436	0.02659
	C1	0.00892	0.00928	0.03129
	C1	0.00401	0.00437	0.02649
	D1	0.00802	0.00861	0.02763
	D1	0.00398	0.00457	0.02374
sky130_fd_sc_hs__o2111a_2	A1	0.01561	0.01597	0.02650
	A1	0.00747	0.00784	0.01866
	A2	0.01393	0.01426	0.03001
	A2	0.00674	0.00766	0.02312
	B1	0.01433	0.01463	0.03238
	B1	0.00662	0.00708	0.02656
	C1	0.01164	0.01210	0.03122
	C1	0.00660	0.00706	0.02632
	D1	0.01077	0.01145	0.03019
	D1	0.00654	0.00724	0.02615

sky130_fd_sc_hs__o2111a_4	**A1**	0.03220	0.03240	0.05051
	A1	0.01563	0.01587	0.03457
	A2	0.02930	0.02957	0.05422
	A2	0.01417	0.01457	0.03969
	B1	0.02604	0.02671	0.06661
	B1	0.01420	0.01488	0.05507
	C1	0.02419	0.02493	0.06302
	C1	0.01419	0.01500	0.05418
	D1	0.02208	0.02317	0.06551
	D1	0.01410	0.01523	0.05754

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00485	0.00503	0.01736
	A1	0.01272	0.01290	0.02452
	A2	0.00491	0.00571	0.02446
	A2	0.01187	0.01267	0.03103
	B1	0.00390	0.00517	0.02907
	B1	0.01038	0.01164	0.03478
	C1	0.00347	0.00479	0.02852
	C1	0.00914	0.01036	0.03324
	D1	0.00289	0.00414	0.02800
	D1	0.00776	0.00891	0.03178

sky130_fd_sc_hs__o2111a_2	**A1**	0.00754	0.00766	0.01957
	A1	0.01541	0.01555	0.02688
	A2	0.00765	0.00830	0.02802
	A2	0.01454	0.01524	0.03338
	B1	0.00631	0.00776	0.02987
	B1	0.01298	0.01431	0.03533
	C1	0.00585	0.00731	0.02936
	C1	0.01164	0.01288	0.03369
	D1	0.00514	0.00649	0.02809
	D1	0.01019	0.01140	0.03246
sky130_fd_sc_hs__o2111a_4	**A1**	0.01521	0.01484	0.03592
	A1	0.03123	0.03082	0.05178
	A2	0.01531	0.01523	0.04759
	A2	0.02980	0.02994	0.06197
	B1	0.01263	0.01569	0.06018
	B1	0.02593	0.02840	0.07097
	C1	0.01183	0.01427	0.05640
	C1	0.02329	0.02545	0.06652
	D1	0.00987	0.01277	0.05759
	D1	0.01954	0.02224	0.06369

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)**	0.00175	0.00155	0.00151
	(A2 * B1 * C1 * D1 * X)	-0.00137	-0.00160	-0.00162
	(A2 * B1 * C1 * !D1 * !X)	0.00150	0.00152	0.00150
	(A2 * B1 * C1 * !D1 * !X)	-0.00160	-0.00163	-0.00162
	(A2 * B1 * !C1 * !X)	0.00150	0.00152	0.00150
	(A2 * B1 * !C1 * !X)	-0.00160	-0.00163	-0.00162
	(A2 * !B1 * !X)	0.00150	0.00152	0.00150
	(A2 * !B1 * !X)	-0.00160	-0.00163	-0.00162
	(!A2 * B1 * C1 * !D1 * !X)	0.00138	0.00139	0.00138
	(!A2 * B1 * C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * !C1 * D1 * !X)	0.00140	0.00140	0.00139
	(!A2 * B1 * !C1 * D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * !C1 * !D1 * !X)	0.00139	0.00139	0.00139
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00164	-0.00164	-0.00164
	(!A2 * !B1 * C1 * D1 * !X)	0.00142	0.00144	0.00143
	(!A2 * !B1 * C1 * D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * !D1 * !X)	0.00142	0.00144	0.00143
	(!A2 * !B1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * !C1 * D1 * !X)	0.00142	0.00144	0.00143
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00180	0.00160	0.00156
	(A2 * B1 * C1 * D1 * X)	-0.00136	-0.00159	-0.00161
	(A2 * B1 * C1 * !D1 * !X)	0.00156	0.00158	0.00156
	(A2 * B1 * C1 * !D1 * !X)	-0.00158	-0.00161	-0.00160
	(A2 * B1 * !C1 * !X)	0.00156	0.00158	0.00156
	(A2 * B1 * !C1 * !X)	-0.00158	-0.00161	-0.00160
	(A2 * !B1 * !X)	0.00156	0.00158	0.00156
	(A2 * !B1 * !X)	-0.00158	-0.00161	-0.00160
	(!A2 * B1 * C1 * !D1 * !X)	0.00147	0.00148	0.00147
	(!A2 * B1 * C1 * !D1 * !X)	-0.00162	-0.00163	-0.00162
	(!A2 * B1 * !C1 * D1 * !X)	0.00148	0.00148	0.00147
	(!A2 * B1 * !C1 * D1 * !X)	-0.00163	-0.00163	-0.00162
	(!A2 * B1 * !C1 * !D1 * !X)	0.00148	0.00148	0.00147
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00162	-0.00162	-0.00162
	(!A2 * !B1 * C1 * D1 * !X)	0.00148	0.00150	0.00148
	(!A2 * !B1 * C1 * D1 * !X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * !D1 * !X)	0.00148	0.00150	0.00148
	(!A2 * !B1 * !D1 * !X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * !C1 * D1 * !X)	0.00148	0.00150	0.00148
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00162	-0.00163	-0.00162

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00351	0.00310	0.00302
	(A2 * B1 * C1 * D1 * X)	-0.00264	-0.00314	-0.00316
	(A2 * B1 * C1 * !D1 * !X)	0.00278	0.00282	0.00279
	(A2 * B1 * C1 * !D1 * !X)	-0.00333	-0.00340	-0.00339
	(A2 * B1 * !C1 * !X)	0.00278	0.00282	0.00279
	(A2 * B1 * !C1 * !X)	-0.00333	-0.00340	-0.00339
	(A2 * !B1 * !X)	0.00279	0.00282	0.00279
	(A2 * !B1 * !X)	-0.00333	-0.00340	-0.00339
	(!A2 * B1 * C1 * !D1 * !X)	0.00262	0.00263	0.00261
	(!A2 * B1 * C1 * !D1 * !X)	-0.00343	-0.00344	-0.00342
	(!A2 * B1 * !C1 * D1 * !X)	0.00261	0.00264	0.00262
	(!A2 * B1 * !C1 * D1 * !X)	-0.00341	-0.00344	-0.00343
	(!A2 * B1 * !C1 * !D1 * !X)	0.00261	0.00264	0.00263
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00341	-0.00344	-0.00343
	(!A2 * !B1 * C1 * D1 * !X)	0.00266	0.00270	0.00267
	(!A2 * !B1 * C1 * D1 * !X)	-0.00342	-0.00344	-0.00343
	(!A2 * !B1 * !D1 * !X)	0.00266	0.00267	0.00267
	(!A2 * !B1 * !D1 * !X)	-0.00342	-0.00343	-0.00343
	(!A2 * !B1 * !C1 * D1 * !X)	0.00266	0.00267	0.00267
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00342	-0.00343	-0.00343

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)**	-0.00148	-0.00149	-0.00148
	(A2 * B1 * C1 * D1 * X)	0.00162	0.00164	0.00164
	(A2 * B1 * C1 * !D1 * !X)	-0.00150	-0.00150	-0.00150
	(A2 * B1 * C1 * !D1 * !X)	0.00162	0.00163	0.00162
	(A2 * B1 * !C1 * !X)	-0.00150	-0.00150	-0.00150
	(A2 * B1 * !C1 * !X)	0.00163	0.00163	0.00162
	(A2 * !B1 * !X)	-0.00150	-0.00151	-0.00150
	(A2 * !B1 * !X)	0.00163	0.00164	0.00162
	(!A2 * B1 * C1 * !D1 * !X)	-0.00127	-0.00139	-0.00138
	(!A2 * B1 * C1 * !D1 * !X)	0.00164	0.00166	0.00165
	(!A2 * B1 * !C1 * D1 * !X)	-0.00130	-0.00140	-0.00139
	(!A2 * B1 * !C1 * D1 * !X)	0.00164	0.00166	0.00165
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00130	-0.00139	-0.00139
	(!A2 * B1 * !C1 * !D1 * !X)	0.00164	0.00166	0.00165
	(!A2 * !B1 * C1 * D1 * !X)	-0.00136	-0.00144	-0.00143
	(!A2 * !B1 * C1 * D1 * !X)	0.00164	0.00166	0.00165
	(!A2 * !B1 * !D1 * !X)	-0.00136	-0.00144	-0.00143
	(!A2 * !B1 * !D1 * !X)	0.00164	0.00166	0.00165
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00136	-0.00144	-0.00143
	(!A2 * !B1 * !C1 * D1 * !X)	0.00164	0.00166	0.00165

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00154	-0.00155	-0.00154
	(A2 * B1 * C1 * D1 * X)	0.00161	0.00162	0.00162
	(A2 * B1 * C1 * !D1 * !X)	-0.00156	-0.00156	-0.00156
	(A2 * B1 * C1 * !D1 * !X)	0.00161	0.00162	0.00160
	(A2 * B1 * !C1 * !X)	-0.00155	-0.00156	-0.00156
	(A2 * B1 * !C1 * !X)	0.00160	0.00162	0.00160
	(A2 * !B1 * !X)	-0.00156	-0.00156	-0.00155
	(A2 * !B1 * !X)	0.00161	0.00162	0.00160
	(!A2 * B1 * C1 * !D1 * !X)	-0.00133	-0.00148	-0.00147
	(!A2 * B1 * C1 * !D1 * !X)	0.00162	0.00165	0.00163
	(!A2 * B1 * !C1 * D1 * !X)	-0.00136	-0.00148	-0.00147
	(!A2 * B1 * !C1 * D1 * !X)	0.00163	0.00165	0.00163
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00136	-0.00148	-0.00147
	(!A2 * B1 * !C1 * !D1 * !X)	0.00162	0.00165	0.00163
	(!A2 * !B1 * C1 * D1 * !X)	-0.00142	-0.00150	-0.00148
	(!A2 * !B1 * C1 * D1 * !X)	0.00163	0.00164	0.00163
	(!A2 * !B1 * !D1 * !X)	-0.00142	-0.00150	-0.00148
	(!A2 * !B1 * !D1 * !X)	0.00163	0.00164	0.00163
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00142	-0.00150	-0.00148
	(!A2 * !B1 * !C1 * D1 * !X)	0.00163	0.00164	0.00163

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00297	-0.00299	-0.00297
	(A2 * B1 * C1 * D1 * X)	0.00317	0.00322	0.00319
	(A2 * B1 * C1 * !D1 * !X)	-0.00277	-0.00278	-0.00278
	(A2 * B1 * C1 * !D1 * !X)	0.00337	0.00340	0.00339
	(A2 * B1 * !C1 * !X)	-0.00277	-0.00278	-0.00278
	(A2 * B1 * !C1 * !X)	0.00337	0.00340	0.00339
	(A2 * !B1 * !X)	-0.00277	-0.00278	-0.00278
	(A2 * !B1 * !X)	0.00337	0.00340	0.00339
	(!A2 * B1 * C1 * !D1 * !X)	-0.00239	-0.00261	-0.00261
	(!A2 * B1 * C1 * !D1 * !X)	0.00343	0.00348	0.00344
	(!A2 * B1 * !C1 * D1 * !X)	-0.00241	-0.00260	-0.00262
	(!A2 * B1 * !C1 * D1 * !X)	0.00341	0.00344	0.00344
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00241	-0.00260	-0.00263
	(!A2 * B1 * !C1 * !D1 * !X)	0.00341	0.00344	0.00344
	(!A2 * !B1 * C1 * D1 * !X)	-0.00251	-0.00266	-0.00267
	(!A2 * !B1 * C1 * D1 * !X)	0.00342	0.00347	0.00344
	(!A2 * !B1 * !D1 * !X)	-0.00251	-0.00266	-0.00267
	(!A2 * !B1 * !D1 * !X)	0.00342	0.00347	0.00344
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00251	-0.00266	-0.00267
	(!A2 * !B1 * !C1 * D1 * !X)	0.00342	0.00347	0.00344

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)**	0.00157	0.00160	0.00157
	(A1 * B1 * C1 * D1 * X)	-0.00080	-0.00082	-0.00080
	(A1 * B1 * C1 * !D1 * !X)	0.00142	0.00144	0.00143
	(A1 * B1 * C1 * !D1 * !X)	-0.00157	-0.00160	-0.00159
	(A1 * B1 * !C1 * D1 * !X)	0.00142	0.00144	0.00143
	(A1 * B1 * !C1 * D1 * !X)	-0.00157	-0.00160	-0.00159
	(A1 * B1 * !C1 * !D1 * !X)	0.00142	0.00145	0.00143
	(A1 * B1 * !C1 * !D1 * !X)	-0.00157	-0.00160	-0.00159
	(A1 * !B1 * C1 * D1 * !X)	0.00143	0.00144	0.00143
	(A1 * !B1 * C1 * D1 * !X)	-0.00157	-0.00160	-0.00159
	(A1 * !B1 * !D1 * !X)	0.00143	0.00145	0.00143
	(A1 * !B1 * !D1 * !X)	-0.00157	-0.00160	-0.00159
	(A1 * !B1 * !C1 * D1 * !X)	0.00143	0.00145	0.00143
	(A1 * !B1 * !C1 * D1 * !X)	-0.00157	-0.00160	-0.00159
	(!A1 * B1 * C1 * !D1 * !X)	0.00132	0.00133	0.00132
	(!A1 * B1 * C1 * !D1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * B1 * !C1 * D1 * !X)	0.00132	0.00132	0.00132
	(!A1 * B1 * !C1 * D1 * !X)	-0.00161	-0.00161	-0.00161
	(!A1 * B1 * !C1 * !D1 * !X)	0.00134	0.00135	0.00134
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * C1 * D1 * !X)	0.00136	0.00137	0.00136
	(!A1 * !B1 * C1 * D1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * !D1 * !X)	0.00137	0.00137	0.00137
	(!A1 * !B1 * !D1 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * !C1 * D1 * !X)	0.00137	0.00138	0.00137
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00161	-0.00162	-0.00161

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00156	0.00159	0.00156
	(A1 * B1 * C1 * D1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * B1 * C1 * !D1 * !X)	0.00143	0.00144	0.00144
	(A1 * B1 * C1 * !D1 * !X)	-0.00153	-0.00156	-0.00156
	(A1 * B1 * !C1 * D1 * !X)	0.00143	0.00144	0.00144
	(A1 * B1 * !C1 * D1 * !X)	-0.00153	-0.00156	-0.00156
	(A1 * B1 * !C1 * !D1 * !X)	0.00143	0.00146	0.00144
	(A1 * B1 * !C1 * !D1 * !X)	-0.00154	-0.00156	-0.00156
	(A1 * !B1 * C1 * D1 * !X)	0.00144	0.00145	0.00144
	(A1 * !B1 * C1 * D1 * !X)	-0.00154	-0.00156	-0.00156
	(A1 * !B1 * !D1 * !X)	0.00144	0.00146	0.00144
	(A1 * !B1 * !D1 * !X)	-0.00154	-0.00156	-0.00156
	(A1 * !B1 * !C1 * D1 * !X)	0.00144	0.00146	0.00144
	(A1 * !B1 * !C1 * D1 * !X)	-0.00154	-0.00156	-0.00156
	(!A1 * B1 * C1 * !D1 * !X)	0.00134	0.00134	0.00134
	(!A1 * B1 * C1 * !D1 * !X)	-0.00158	-0.00158	-0.00158
	(!A1 * B1 * !C1 * D1 * !X)	0.00135	0.00136	0.00135
	(!A1 * B1 * !C1 * D1 * !X)	-0.00158	-0.00159	-0.00158
	(!A1 * B1 * !C1 * !D1 * !X)	0.00135	0.00136	0.00135
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00158	-0.00159	-0.00158
	(!A1 * !B1 * C1 * D1 * !X)	0.00136	0.00138	0.00136
	(!A1 * !B1 * C1 * D1 * !X)	-0.00157	-0.00159	-0.00158
	(!A1 * !B1 * !D1 * !X)	0.00136	0.00138	0.00136
	(!A1 * !B1 * !D1 * !X)	-0.00157	-0.00159	-0.00158
	(!A1 * !B1 * !C1 * D1 * !X)	0.00136	0.00137	0.00136
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00157	-0.00158	-0.00158

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00343	0.00349	0.00344
	(A1 * B1 * C1 * D1 * X)	-0.00159	-0.00162	-0.00159
	(A1 * B1 * C1 * !D1 * !X)	0.00292	0.00295	0.00293
	(A1 * B1 * C1 * !D1 * !X)	-0.00334	-0.00342	-0.00340
	(A1 * B1 * !C1 * D1 * !X)	0.00292	0.00295	0.00293
	(A1 * B1 * !C1 * D1 * !X)	-0.00334	-0.00342	-0.00340
	(A1 * B1 * !C1 * !D1 * !X)	0.00292	0.00294	0.00293
	(A1 * B1 * !C1 * !D1 * !X)	-0.00334	-0.00342	-0.00340
	(A1 * !B1 * C1 * D1 * !X)	0.00292	0.00295	0.00293
	(A1 * !B1 * C1 * D1 * !X)	-0.00334	-0.00342	-0.00340
	(A1 * !B1 * !D1 * !X)	0.00292	0.00293	0.00293
	(A1 * !B1 * !D1 * !X)	-0.00334	-0.00341	-0.00340
	(A1 * !B1 * !C1 * D1 * !X)	0.00292	0.00293	0.00293
	(A1 * !B1 * !C1 * D1 * !X)	-0.00334	-0.00341	-0.00340
	(!A1 * B1 * C1 * !D1 * !X)	0.00267	0.00267	0.00267
	(!A1 * B1 * C1 * !D1 * !X)	-0.00346	-0.00345	-0.00345
	(!A1 * B1 * !C1 * D1 * !X)	0.00269	0.00269	0.00269
	(!A1 * B1 * !C1 * D1 * !X)	-0.00346	-0.00345	-0.00345
	(!A1 * B1 * !C1 * !D1 * !X)	0.00271	0.00273	0.00270
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00346	-0.00347	-0.00345
	(!A1 * !B1 * C1 * D1 * !X)	0.00275	0.00279	0.00276
	(!A1 * !B1 * C1 * D1 * !X)	-0.00344	-0.00347	-0.00345
	(!A1 * !B1 * !D1 * !X)	0.00278	0.00280	0.00279
	(!A1 * !B1 * !D1 * !X)	-0.00344	-0.00346	-0.00345
	(!A1 * !B1 * !C1 * D1 * !X)	0.00278	0.00282	0.00279
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00344	-0.00347	-0.00345

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)**	-0.00151	-0.00151	-0.00155
	(A1 * B1 * C1 * D1 * X)	0.00086	0.00087	0.00083
	(A1 * B1 * C1 * !D1 * !X)	-0.00142	-0.00143	-0.00143
	(A1 * B1 * C1 * !D1 * !X)	0.00158	0.00160	0.00159
	(A1 * B1 * !C1 * D1 * !X)	-0.00142	-0.00143	-0.00143
	(A1 * B1 * !C1 * D1 * !X)	0.00158	0.00160	0.00159
	(A1 * B1 * !C1 * !D1 * !X)	-0.00142	-0.00143	-0.00143
	(A1 * B1 * !C1 * !D1 * !X)	0.00159	0.00160	0.00159
	(A1 * !B1 * C1 * D1 * !X)	-0.00142	-0.00143	-0.00143
	(A1 * !B1 * C1 * D1 * !X)	0.00158	0.00160	0.00159
	(A1 * !B1 * !D1 * !X)	-0.00142	-0.00143	-0.00143
	(A1 * !B1 * !D1 * !X)	0.00158	0.00160	0.00159
	(A1 * !B1 * !C1 * D1 * !X)	-0.00142	-0.00143	-0.00143
	(A1 * !B1 * !C1 * D1 * !X)	0.00158	0.00160	0.00159
	(!A1 * B1 * C1 * !D1 * !X)	-0.00120	-0.00133	-0.00132
	(!A1 * B1 * C1 * !D1 * !X)	0.00161	0.00163	0.00162
	(!A1 * B1 * !C1 * D1 * !X)	-0.00123	-0.00132	-0.00132
	(!A1 * B1 * !C1 * D1 * !X)	0.00161	0.00163	0.00162
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00123	-0.00135	-0.00134
	(!A1 * B1 * !C1 * !D1 * !X)	0.00161	0.00163	0.00162
	(!A1 * !B1 * C1 * D1 * !X)	-0.00129	-0.00137	-0.00136
	(!A1 * !B1 * C1 * D1 * !X)	0.00161	0.00163	0.00162
	(!A1 * !B1 * !D1 * !X)	-0.00129	-0.00137	-0.00137
	(!A1 * !B1 * !D1 * !X)	0.00161	0.00163	0.00162
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00129	-0.00137	-0.00137
	(!A1 * !B1 * !C1 * D1 * !X)	0.00161	0.00163	0.00162

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00151	-0.00152	-0.00155
	(A1 * B1 * C1 * D1 * X)	0.00083	0.00084	0.00080
	(A1 * B1 * C1 * !D1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * B1 * C1 * !D1 * !X)	0.00155	0.00156	0.00156
	(A1 * B1 * !C1 * D1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * B1 * !C1 * D1 * !X)	0.00155	0.00156	0.00156
	(A1 * B1 * !C1 * !D1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * B1 * !C1 * !D1 * !X)	0.00155	0.00156	0.00156
	(A1 * !B1 * C1 * D1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * !B1 * C1 * D1 * !X)	0.00155	0.00156	0.00156
	(A1 * !B1 * !D1 * !X)	-0.00143	-0.00143	-0.00143
	(A1 * !B1 * !D1 * !X)	0.00156	0.00156	0.00156
	(A1 * !B1 * !C1 * D1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * !B1 * !C1 * D1 * !X)	0.00155	0.00156	0.00156
	(!A1 * B1 * C1 * !D1 * !X)	-0.00121	-0.00134	-0.00134
	(!A1 * B1 * C1 * !D1 * !X)	0.00158	0.00160	0.00158
	(!A1 * B1 * !C1 * D1 * !X)	-0.00124	-0.00136	-0.00135
	(!A1 * B1 * !C1 * D1 * !X)	0.00158	0.00160	0.00159
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00124	-0.00136	-0.00135
	(!A1 * B1 * !C1 * !D1 * !X)	0.00158	0.00160	0.00159
	(!A1 * !B1 * C1 * D1 * !X)	-0.00130	-0.00138	-0.00136
	(!A1 * !B1 * C1 * D1 * !X)	0.00158	0.00159	0.00158
	(!A1 * !B1 * !D1 * !X)	-0.00130	-0.00138	-0.00136
	(!A1 * !B1 * !D1 * !X)	0.00158	0.00160	0.00158
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00130	-0.00137	-0.00136
	(!A1 * !B1 * !C1 * D1 * !X)	0.00158	0.00160	0.00158

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00330	-0.00332	-0.00340
	(A1 * B1 * C1 * D1 * X)	0.00173	0.00174	0.00165
	(A1 * B1 * C1 * !D1 * !X)	-0.00291	-0.00294	-0.00292
	(A1 * B1 * C1 * !D1 * !X)	0.00339	0.00342	0.00340
	(A1 * B1 * !C1 * D1 * !X)	-0.00291	-0.00294	-0.00292
	(A1 * B1 * !C1 * D1 * !X)	0.00339	0.00343	0.00340
	(A1 * B1 * !C1 * !D1 * !X)	-0.00291	-0.00294	-0.00292
	(A1 * B1 * !C1 * !D1 * !X)	0.00339	0.00343	0.00340
	(A1 * !B1 * C1 * D1 * !X)	-0.00290	-0.00294	-0.00292
	(A1 * !B1 * C1 * D1 * !X)	0.00338	0.00343	0.00340
	(A1 * !B1 * !D1 * !X)	-0.00291	-0.00293	-0.00292
	(A1 * !B1 * !D1 * !X)	0.00339	0.00343	0.00340
	(A1 * !B1 * !C1 * D1 * !X)	-0.00291	-0.00293	-0.00292
	(A1 * !B1 * !C1 * D1 * !X)	0.00339	0.00343	0.00340
	(!A1 * B1 * C1 * !D1 * !X)	-0.00243	-0.00267	-0.00267
	(!A1 * B1 * C1 * !D1 * !X)	0.00346	0.00349	0.00346
	(!A1 * B1 * !C1 * D1 * !X)	-0.00247	-0.00269	-0.00269
	(!A1 * B1 * !C1 * D1 * !X)	0.00346	0.00349	0.00346
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00247	-0.00273	-0.00270
	(!A1 * B1 * !C1 * !D1 * !X)	0.00346	0.00349	0.00346
	(!A1 * !B1 * C1 * D1 * !X)	-0.00259	-0.00279	-0.00276
	(!A1 * !B1 * C1 * D1 * !X)	0.00345	0.00351	0.00346
	(!A1 * !B1 * !D1 * !X)	-0.00260	-0.00279	-0.00279
	(!A1 * !B1 * !D1 * !X)	0.00345	0.00351	0.00346
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00260	-0.00279	-0.00279
	(!A1 * !B1 * !C1 * D1 * !X)	0.00345	0.00351	0.00346

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)**	0.00130	0.00130	0.00129
	(A2 * C1 * !D1 * !X)	-0.00142	-0.00142	-0.00141
	(A2 * !C1 * D1 * !X)	0.00131	0.00133	0.00132
	(A2 * !C1 * D1 * !X)	-0.00141	-0.00142	-0.00141
	(A2 * !C1 * !D1 * !X)	0.00131	0.00133	0.00132
	(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)	-0.00142	-0.00141	-0.00141
	(A1 * !A2 * !C1 * D1 * !X)	0.00131	0.00132	0.00131
	(A1 * !A2 * !C1 * D1 * !X)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * !C1 * !D1 * !X)	0.00131	0.00132	0.00132
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * !A2 * C1 * D1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A2 * C1 * D1 * !X)	-0.00137	-0.00139	-0.00137
	(!A1 * !A2 * C1 * !D1 * !X)	0.00072	0.00071	0.00071
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00142	-0.00141	-0.00141
	(!A1 * !A2 * !C1 * D1 * !X)	0.00075	0.00076	0.00075
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00078	0.00078	0.00077
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00142	-0.00142	-0.00141

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00132	0.00131	0.00131
	(A2 * C1 * !D1 * !X)	-0.00162	-0.00162	-0.00162
	(A2 * !C1 * D1 * !X)	0.00134	0.00135	0.00135
	(A2 * !C1 * D1 * !X)	-0.00161	-0.00162	-0.00162
	(A2 * !C1 * !D1 * !X)	0.00134	0.00135	0.00134
	(A2 * !C1 * !D1 * !X)	-0.00161	-0.00162	-0.00162
	(A1 * !A2 * C1 * !D1 * !X)	0.00131	0.00131	0.00131
	(A1 * !A2 * C1 * !D1 * !X)	-0.00162	-0.00162	-0.00162
	(A1 * !A2 * !C1 * D1 * !X)	0.00134	0.00136	0.00135
	(A1 * !A2 * !C1 * D1 * !X)	-0.00161	-0.00163	-0.00162
	(A1 * !A2 * !C1 * !D1 * !X)	0.00134	0.00136	0.00134
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00161	-0.00163	-0.00162
	(!A1 * !A2 * C1 * D1 * !X)	0.00066	0.00066	0.00065
	(!A1 * !A2 * C1 * D1 * !X)	-0.00158	-0.00159	-0.00157
	(!A1 * !A2 * C1 * !D1 * !X)	0.00078	0.00078	0.00077
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00162	-0.00162	-0.00162
	(!A1 * !A2 * !C1 * D1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00161	-0.00163	-0.00162
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00161	-0.00163	-0.00162

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00261	0.00263	0.00263
	(A2 * C1 * !D1 * !X)	-0.00277	-0.00279	-0.00278
	(A2 * !C1 * D1 * !X)	0.00265	0.00269	0.00266
	(A2 * !C1 * D1 * !X)	-0.00278	-0.00280	-0.00278
	(A2 * !C1 * !D1 * !X)	0.00265	0.00268	0.00266
	(A2 * !C1 * !D1 * !X)	-0.00278	-0.00280	-0.00278
	(A1 * !A2 * C1 * !D1 * !X)	0.00262	0.00262	0.00262
	(A1 * !A2 * C1 * !D1 * !X)	-0.00279	-0.00278	-0.00278
	(A1 * !A2 * !C1 * D1 * !X)	0.00263	0.00266	0.00265
	(A1 * !A2 * !C1 * D1 * !X)	-0.00278	-0.00279	-0.00278
	(A1 * !A2 * !C1 * !D1 * !X)	0.00263	0.00265	0.00265
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00278	-0.00279	-0.00278
	(!A1 * !A2 * C1 * D1 * !X)	0.00122	0.00123	0.00122
	(!A1 * !A2 * C1 * D1 * !X)	-0.00271	-0.00273	-0.00269
	(!A1 * !A2 * C1 * !D1 * !X)	0.00146	0.00147	0.00146
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00279	-0.00281	-0.00280
	(!A1 * !A2 * !C1 * D1 * !X)	0.00147	0.00147	0.00146
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00280	-0.00281	-0.00279
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00151	0.00151	0.00151
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00280	-0.00280	-0.00279

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)**	-0.00117	-0.00129	-0.00129
	(A2 * C1 * !D1 * !X)	0.00142	0.00142	0.00142
	(A2 * !C1 * D1 * !X)	-0.00125	-0.00133	-0.00132
	(A2 * !C1 * D1 * !X)	0.00141	0.00143	0.00142
	(A2 * !C1 * !D1 * !X)	-0.00126	-0.00133	-0.00132
	(A2 * !C1 * !D1 * !X)	0.00141	0.00143	0.00142
	(A1 * !A2 * C1 * !D1 * !X)	-0.00114	-0.00129	-0.00128
	(A1 * !A2 * C1 * !D1 * !X)	0.00142	0.00143	0.00142
	(A1 * !A2 * !C1 * D1 * !X)	-0.00124	-0.00132	-0.00131
	(A1 * !A2 * !C1 * D1 * !X)	0.00141	0.00142	0.00142
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00125	-0.00132	-0.00132
	(A1 * !A2 * !C1 * !D1 * !X)	0.00141	0.00142	0.00142
	(!A1 * !A2 * C1 * D1 * !X)	-0.00056	-0.00057	-0.00057
	(!A1 * !A2 * C1 * D1 * !X)	0.00144	0.00146	0.00143
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00072	-0.00071	-0.00071
	(!A1 * !A2 * C1 * !D1 * !X)	0.00143	0.00145	0.00142
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * !C1 * D1 * !X)	0.00150	0.00148	0.00143
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00142	0.00143	0.00142

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00121	-0.00131	-0.00131
	(A2 * C1 * !D1 * !X)	0.00162	0.00162	0.00162
	(A2 * !C1 * D1 * !X)	-0.00128	-0.00135	-0.00135
	(A2 * !C1 * D1 * !X)	0.00161	0.00164	0.00162
	(A2 * !C1 * !D1 * !X)	-0.00129	-0.00135	-0.00134
	(A2 * !C1 * !D1 * !X)	0.00161	0.00164	0.00162
	(A1 * !A2 * C1 * !D1 * !X)	-0.00119	-0.00131	-0.00131
	(A1 * !A2 * C1 * !D1 * !X)	0.00162	0.00163	0.00162
	(A1 * !A2 * !C1 * D1 * !X)	-0.00128	-0.00135	-0.00135
	(A1 * !A2 * !C1 * D1 * !X)	0.00162	0.00163	0.00162
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00130	-0.00135	-0.00134
	(A1 * !A2 * !C1 * !D1 * !X)	0.00163	0.00163	0.00162
	(!A1 * !A2 * C1 * D1 * !X)	-0.00060	-0.00061	-0.00060
	(!A1 * !A2 * C1 * D1 * !X)	0.00164	0.00167	0.00163
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * C1 * !D1 * !X)	0.00163	0.00166	0.00162
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * !C1 * D1 * !X)	0.00166	0.00166	0.00163
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00161	0.00164	0.00162

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00240	-0.00261	-0.00263
	(A2 * C1 * !D1 * !X)	0.00281	0.00281	0.00280
	(A2 * !C1 * D1 * !X)	-0.00252	-0.00267	-0.00266
	(A2 * !C1 * D1 * !X)	0.00279	0.00282	0.00280
	(A2 * !C1 * !D1 * !X)	-0.00253	-0.00267	-0.00266
	(A2 * !C1 * !D1 * !X)	0.00279	0.00282	0.00280
	(A1 * !A2 * C1 * !D1 * !X)	-0.00235	-0.00262	-0.00262
	(A1 * !A2 * C1 * !D1 * !X)	0.00281	0.00281	0.00280
	(A1 * !A2 * !C1 * D1 * !X)	-0.00250	-0.00266	-0.00265
	(A1 * !A2 * !C1 * D1 * !X)	0.00278	0.00282	0.00280
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00252	-0.00265	-0.00265
	(A1 * !A2 * !C1 * !D1 * !X)	0.00279	0.00282	0.00280
	(!A1 * !A2 * C1 * D1 * !X)	-0.00113	-0.00114	-0.00112
	(!A1 * !A2 * C1 * D1 * !X)	0.00284	0.00287	0.00281
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00146	-0.00147	-0.00146
	(!A1 * !A2 * C1 * !D1 * !X)	0.00280	0.00287	0.00281
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00147	-0.00147	-0.00146
	(!A1 * !A2 * !C1 * D1 * !X)	0.00287	0.00286	0.00281
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00151	-0.00151	-0.00151
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00282	0.00284	0.00281

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)**	0.00131	0.00133	0.00132
	(A2 * B1 * !D1 * !X)	-0.00149	-0.00150	-0.00150
	(A2 * !B1 * D1 * !X)	0.00057	0.00057	0.00057
	(A2 * !B1 * D1 * !X)	-0.00149	-0.00149	-0.00149
	(A2 * !B1 * !D1 * !X)	0.00066	0.00066	0.00065
	(A2 * !B1 * !D1 * !X)	-0.00151	-0.00151	-0.00150
	(A1 * !A2 * B1 * !D1 * !X)	0.00132	0.00133	0.00132
	(A1 * !A2 * B1 * !D1 * !X)	-0.00149	-0.00150	-0.00150
	(!A2 * !B1 * D1 * !X)	0.00057	0.00057	0.00057
	(!A2 * !B1 * D1 * !X)	-0.00149	-0.00150	-0.00149
	(!A2 * !B1 * !D1 * !X)	0.00066	0.00065	0.00065
	(!A2 * !B1 * !D1 * !X)	-0.00151	-0.00150	-0.00150
	(!A1 * !A2 * B1 * D1 * !X)	0.00058	0.00058	0.00057
	(!A1 * !A2 * B1 * D1 * !X)	-0.00150	-0.00150	-0.00149
	(!A1 * !A2 * B1 * !D1 * !X)	0.00073	0.00074	0.00073
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00149	-0.00150	-0.00150

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00133	0.00134	0.00133
	(A2 * B1 * !D1 * !X)	-0.00167	-0.00168	-0.00167
	(A2 * !B1 * D1 * !X)	0.00060	0.00060	0.00061
	(A2 * !B1 * D1 * !X)	-0.00167	-0.00167	-0.00166
	(A2 * !B1 * !D1 * !X)	0.00070	0.00072	0.00071
	(A2 * !B1 * !D1 * !X)	-0.00167	-0.00169	-0.00167
	(A1 * !A2 * B1 * !D1 * !X)	0.00132	0.00134	0.00133
	(A1 * !A2 * B1 * !D1 * !X)	-0.00167	-0.00168	-0.00167
	(!A2 * !B1 * D1 * !X)	0.00060	0.00060	0.00061
	(!A2 * !B1 * D1 * !X)	-0.00167	-0.00167	-0.00166
	(!A2 * !B1 * !D1 * !X)	0.00071	0.00071	0.00071
	(!A2 * !B1 * !D1 * !X)	-0.00168	-0.00167	-0.00167
	(!A1 * !A2 * B1 * D1 * !X)	0.00060	0.00060	0.00060
	(!A1 * !A2 * B1 * D1 * !X)	-0.00167	-0.00167	-0.00166
	(!A1 * !A2 * B1 * !D1 * !X)	0.00078	0.00078	0.00078
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00168	-0.00168	-0.00167

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00273	0.00277	0.00275
	(A2 * B1 * !D1 * !X)	-0.00285	-0.00287	-0.00285
	(A2 * !B1 * D1 * !X)	0.00125	0.00125	0.00126
	(A2 * !B1 * D1 * !X)	-0.00285	-0.00285	-0.00284
	(A2 * !B1 * !D1 * !X)	0.00149	0.00149	0.00148
	(A2 * !B1 * !D1 * !X)	-0.00288	-0.00287	-0.00287
	(A1 * !A2 * B1 * !D1 * !X)	0.00273	0.00276	0.00274
	(A1 * !A2 * B1 * !D1 * !X)	-0.00284	-0.00287	-0.00285
	(!A2 * !B1 * D1 * !X)	0.00124	0.00125	0.00126
	(!A2 * !B1 * D1 * !X)	-0.00285	-0.00285	-0.00284
	(!A2 * !B1 * !D1 * !X)	0.00149	0.00149	0.00148
	(!A2 * !B1 * !D1 * !X)	-0.00288	-0.00288	-0.00287
	(!A1 * !A2 * B1 * D1 * !X)	0.00118	0.00119	0.00122
	(!A1 * !A2 * B1 * D1 * !X)	-0.00284	-0.00286	-0.00284
	(!A1 * !A2 * B1 * !D1 * !X)	0.00153	0.00156	0.00154
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00286	-0.00289	-0.00287

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)**	-0.00120	-0.00132	-0.00132
	(A2 * B1 * !D1 * !X)	0.00160	0.00151	0.00150
	(A2 * !B1 * D1 * !X)	-0.00054	-0.00055	-0.00055
	(A2 * !B1 * D1 * !X)	0.00153	0.00155	0.00150
	(A2 * !B1 * !D1 * !X)	-0.00066	-0.00066	-0.00065
	(A2 * !B1 * !D1 * !X)	0.00159	0.00160	0.00152
	(A1 * !A2 * B1 * !D1 * !X)	-0.00118	-0.00133	-0.00132
	(A1 * !A2 * B1 * !D1 * !X)	0.00161	0.00152	0.00150
	(!A2 * !B1 * D1 * !X)	-0.00054	-0.00055	-0.00055
	(!A2 * !B1 * D1 * !X)	0.00153	0.00155	0.00150
	(!A2 * !B1 * !D1 * !X)	-0.00066	-0.00065	-0.00065
	(!A2 * !B1 * !D1 * !X)	0.00159	0.00160	0.00152
	(!A1 * !A2 * B1 * D1 * !X)	-0.00053	-0.00054	-0.00054
	(!A1 * !A2 * B1 * D1 * !X)	0.00153	0.00155	0.00150
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00073	-0.00074	-0.00073
	(!A1 * !A2 * B1 * !D1 * !X)	0.00161	0.00157	0.00151

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00121	-0.00133	-0.00133
	(A2 * B1 * !D1 * !X)	0.00175	0.00169	0.00168
	(A2 * !B1 * D1 * !X)	-0.00057	-0.00058	-0.00058
	(A2 * !B1 * D1 * !X)	0.00171	0.00174	0.00168
	(A2 * !B1 * !D1 * !X)	-0.00070	-0.00072	-0.00071
	(A2 * !B1 * !D1 * !X)	0.00176	0.00178	0.00170
	(A1 * !A2 * B1 * !D1 * !X)	-0.00120	-0.00134	-0.00133
	(A1 * !A2 * B1 * !D1 * !X)	0.00178	0.00169	0.00168
	(!A2 * !B1 * D1 * !X)	-0.00056	-0.00058	-0.00058
	(!A2 * !B1 * D1 * !X)	0.00170	0.00174	0.00168
	(!A2 * !B1 * !D1 * !X)	-0.00071	-0.00071	-0.00071
	(!A2 * !B1 * !D1 * !X)	0.00176	0.00178	0.00170
	(!A1 * !A2 * B1 * D1 * !X)	-0.00056	-0.00057	-0.00057
	(!A1 * !A2 * B1 * D1 * !X)	0.00171	0.00174	0.00168
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * B1 * !D1 * !X)	0.00175	0.00173	0.00168

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00244	-0.00277	-0.00275
	(A2 * B1 * !D1 * !X)	0.00307	0.00289	0.00286
	(A2 * !B1 * D1 * !X)	-0.00117	-0.00119	-0.00121
	(A2 * !B1 * D1 * !X)	0.00296	0.00300	0.00289
	(A2 * !B1 * !D1 * !X)	-0.00149	-0.00149	-0.00148
	(A2 * !B1 * !D1 * !X)	0.00303	0.00308	0.00292
	(A1 * !A2 * B1 * !D1 * !X)	-0.00241	-0.00276	-0.00274
	(A1 * !A2 * B1 * !D1 * !X)	0.00310	0.00289	0.00286
	(!A2 * !B1 * D1 * !X)	-0.00117	-0.00119	-0.00121
	(!A2 * !B1 * D1 * !X)	0.00295	0.00300	0.00289
	(!A2 * !B1 * !D1 * !X)	-0.00149	-0.00149	-0.00148
	(!A2 * !B1 * !D1 * !X)	0.00303	0.00308	0.00292
	(!A1 * !A2 * B1 * D1 * !X)	-0.00113	-0.00115	-0.00117
	(!A1 * !A2 * B1 * D1 * !X)	0.00296	0.00299	0.00289
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00153	-0.00156	-0.00154
	(!A1 * !A2 * B1 * !D1 * !X)	0.00303	0.00298	0.00288

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00049	0.00049	0.00047
	(A2 * !C1 * !X)	-0.00180	-0.00180	-0.00183
	(A2 * !B1 * C1 * !X)	0.00049	0.00049	0.00046
	(A2 * !B1 * C1 * !X)	-0.00176	-0.00176	-0.00182
	(!A2 * !C1 * !X)	0.00049	0.00049	0.00047
	(!A2 * !C1 * !X)	-0.00180	-0.00180	-0.00183
	(!A2 * !B1 * C1 * !X)	0.00049	0.00049	0.00046
	(!A2 * !B1 * C1 * !X)	-0.00176	-0.00176	-0.00182
	(!A1 * !A2 * B1 * C1 * !X)	0.00054	0.00055	0.00048
	(!A1 * !A2 * B1 * C1 * !X)	-0.00167	-0.00168	-0.00181

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00052	0.00052	0.00050
	(A2 * !C1 * !X)	-0.00201	-0.00202	-0.00205
	(A2 * !B1 * C1 * !X)	0.00051	0.00051	0.00047
	(A2 * !B1 * C1 * !X)	-0.00197	-0.00197	-0.00204
	(!A2 * !C1 * !X)	0.00052	0.00052	0.00050
	(!A2 * !C1 * !X)	-0.00201	-0.00202	-0.00205
	(!A2 * !B1 * C1 * !X)	0.00051	0.00051	0.00047
	(!A2 * !B1 * C1 * !X)	-0.00197	-0.00197	-0.00204
	(!A1 * !A2 * B1 * C1 * !X)	0.00056	0.00056	0.00049
	(!A1 * !A2 * B1 * C1 * !X)	-0.00187	-0.00188	-0.00203
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00107	0.00108	0.00102
	(A2 * !C1 * !X)	-0.00332	-0.00335	-0.00343
	(A2 * !B1 * C1 * !X)	0.00104	0.00105	0.00095
	(A2 * !B1 * C1 * !X)	-0.00322	-0.00325	-0.00341
	(!A2 * !C1 * !X)	0.00107	0.00108	0.00102
	(!A2 * !C1 * !X)	-0.00332	-0.00335	-0.00343
	(!A2 * !B1 * C1 * !X)	0.00104	0.00105	0.00095
	(!A2 * !B1 * C1 * !X)	-0.00322	-0.00325	-0.00341
	(!A1 * !A2 * B1 * C1 * !X)	0.00111	0.00112	0.00096
	(!A1 * !A2 * B1 * C1 * !X)	-0.00305	-0.00308	-0.00338

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00046	-0.00046	-0.00046
	(A2 * !C1 * !X)	0.00182	0.00183	0.00183
	(A2 * !B1 * C1 * !X)	-0.00045	-0.00046	-0.00045
	(A2 * !B1 * C1 * !X)	0.00182	0.00183	0.00183
	(!A2 * !C1 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * !C1 * !X)	0.00183	0.00183	0.00183
	(!A2 * !B1 * C1 * !X)	-0.00046	-0.00045	-0.00045
	(!A2 * !B1 * C1 * !X)	0.00182	0.00182	0.00183
	(!A1 * !A2 * B1 * C1 * !X)	-0.00046	-0.00046	-0.00045
	(!A1 * !A2 * B1 * C1 * !X)	0.00182	0.00183	0.00183
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00048	-0.00049	-0.00048
	(A2 * !C1 * !X)	0.00205	0.00209	0.00205
	(A2 * !B1 * C1 * !X)	-0.00047	-0.00048	-0.00047
	(A2 * !B1 * C1 * !X)	0.00204	0.00209	0.00205
	(!A2 * !C1 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * !C1 * !X)	0.00205	0.00209	0.00205
	(!A2 * !B1 * C1 * !X)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * C1 * !X)	0.00204	0.00208	0.00205
	(!A1 * !A2 * B1 * C1 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !A2 * B1 * C1 * !X)	0.00205	0.00208	0.00205
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00098	-0.00099	-0.00099
	(A2 * !C1 * !X)	0.00342	0.00345	0.00344
	(A2 * !B1 * C1 * !X)	-0.00096	-0.00095	-0.00095
	(A2 * !B1 * C1 * !X)	0.00345	0.00344	0.00344
	(!A2 * !C1 * !X)	-0.00098	-0.00099	-0.00099
	(!A2 * !C1 * !X)	0.00342	0.00343	0.00344
	(!A2 * !B1 * C1 * !X)	-0.00094	-0.00095	-0.00095
	(!A2 * !B1 * C1 * !X)	0.00342	0.00343	0.00344
	(!A1 * !A2 * B1 * C1 * !X)	-0.00096	-0.00095	-0.00095
	(!A1 * !A2 * B1 * C1 * !X)	0.00345	0.00343	0.00344

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00271	0.00282	0.00287	0.00280	0.53266
sky130_fd_sc_hs__o211ai_2	0.00526	0.00540	0.00540	0.00526	0.95502
sky130_fd_sc_hs__o211ai_4	0.01038	0.01067	0.00767	0.00790	1.77860

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211ai_1	0.00000	0.02776	0.15865
sky130_fd_sc_hs__o211ai_2	0.00000	0.05551	0.31729
sky130_fd_sc_hs__o211ai_4	0.00000	0.07136	0.42305

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)	0.13240	1.02521	10.83010
	A2->Y (FR)	0.11864	1.01496	10.97580
	B1->Y (FR)	0.05196	0.69005	7.98399
	C1->Y (FR)	0.04221	0.68016	7.97222
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.12528	0.88880	10.67600
	A2->Y (FR)	0.10478	0.87144	10.84360
	B1->Y (FR)	0.04297	0.59641	7.61553
	C1->Y (FR)	0.03094	0.58044	7.55095
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.11878	0.77111	10.52030
	A2->Y (FR)	0.09946	0.76686	10.79940
	B1->Y (FR)	0.06481	0.71995	10.34510
	C1->Y (FR)	0.04122	0.69154	10.18280

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.05798	0.45639	4.69746
	A2->Y (RF)	0.04824	0.43682	4.60716
	B1->Y (RF)	0.05262	0.50565	5.44363
	C1->Y (RF)	0.04432	0.52679	5.79468
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.05518	0.37976	4.46376
	A2->Y (RF)	0.04518	0.36576	4.46118
	B1->Y (RF)	0.05033	0.44912	5.49114
	C1->Y (RF)	0.03865	0.46600	5.86757
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.05616	0.33873	4.65127
	A2->Y (RF)	0.04251	0.31359	4.50460
	B1->Y (RF)	0.04657	0.39512	5.61238
	C1->Y (RF)	0.03598	0.43316	6.31941

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00163	0.00149	0.00358
	A1	0.00880	0.00868	0.01078
	A2	0.00165	0.00187	0.00624
	A2	0.00787	0.00811	0.01247
	B1	0.00061	0.00101	0.00631
	B1	0.00671	0.00708	0.01204
	C1	-0.00002	0.00042	0.00565
	C1	0.00510	0.00553	0.01046
sky130_fd_sc_hs__o211ai_2	A1	0.00195	0.00172	0.00581
	A1	0.01645	0.01621	0.02039
	A2	0.00196	0.00248	0.01075
	A2	0.01441	0.01466	0.02324
	B1	0.00048	0.00152	0.01179
	B1	0.01271	0.01364	0.02336
	C1	-0.00149	-0.00034	0.01002
	C1	0.00867	0.00979	0.01967
sky130_fd_sc_hs__o211ai_4	A1	0.00378	0.00320	0.01132
	A1	0.03203	0.03147	0.03971
	A2	0.00376	0.00492	0.02048
	A2	0.02804	0.02917	0.04485
	B1	0.00033	0.00147	0.01251
	B1	0.02040	0.02108	0.03199
	C1	-0.00298	-0.00190	0.00988
	C1	0.01325	0.01431	0.02558

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00935	0.00927	0.01087
	A1	0.00204	0.00192	0.00357
	A2	0.00760	0.00753	0.00940
	A2	0.00121	0.00114	0.00277
	B1	0.00820	0.00811	0.01013
	B1	0.00111	0.00103	0.00289
	C1	0.00717	0.00714	0.00972
	C1	0.00110	0.00111	0.00347
sky130_fd_sc_hs__o211ai_2	A1	0.01828	0.01797	0.02140
	A1	0.00352	0.00317	0.00668
	A2	0.01380	0.01373	0.01734
	A2	0.00101	0.00091	0.00441
	B1	0.01568	0.01546	0.01914
	B1	0.00077	0.00064	0.00445
	C1	0.01343	0.01348	0.01796
	C1	0.00066	0.00080	0.00562
sky130_fd_sc_hs__o211ai_4	A1	0.03352	0.03279	0.04096
	A1	0.00476	0.00402	0.01087
	A2	0.02486	0.02464	0.03274
	A2	-0.00013	-0.00038	0.00664
	B1	0.02703	0.02693	0.03147
	B1	0.00205	0.00200	0.00605
	C1	0.02299	0.02305	0.02756
	C1	0.00192	0.00207	0.00703

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)**	0.00174	0.00153	0.00150
	(A2 * B1 * C1 * !Y)	-0.00152	-0.00176	-0.00177
	(A2 * B1 * !C1 * Y)	0.00150	0.00152	0.00150
	(A2 * B1 * !C1 * Y)	-0.00173	-0.00176	-0.00176
	(A2 * !B1 * Y)	0.00150	0.00152	0.00150
	(A2 * !B1 * Y)	-0.00173	-0.00177	-0.00176
	(!A2 * B1 * !C1 * Y)	0.00140	0.00140	0.00140
	(!A2 * B1 * !C1 * Y)	-0.00178	-0.00178	-0.00178
	(!A2 * !B1 * C1 * Y)	0.00143	0.00145	0.00144
	(!A2 * !B1 * C1 * Y)	-0.00178	-0.00179	-0.00178
	(!A2 * !B1 * !C1 * Y)	0.00143	0.00145	0.00143
	(!A2 * !B1 * !C1 * Y)	-0.00178	-0.00179	-0.00178
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00348	0.00301	0.00294
	(A2 * B1 * C1 * !Y)	-0.00300	-0.00359	-0.00360
	(A2 * B1 * !C1 * Y)	0.00293	0.00297	0.00293
	(A2 * B1 * !C1 * Y)	-0.00351	-0.00361	-0.00360
	(A2 * !B1 * Y)	0.00293	0.00297	0.00293
	(A2 * !B1 * Y)	-0.00351	-0.00361	-0.00360
	(!A2 * B1 * !C1 * Y)	0.00274	0.00277	0.00274
	(!A2 * B1 * !C1 * Y)	-0.00367	-0.00368	-0.00366
	(!A2 * !B1 * C1 * Y)	0.00277	0.00281	0.00278
	(!A2 * !B1 * C1 * Y)	-0.00365	-0.00367	-0.00366
	(!A2 * !B1 * !C1 * Y)	0.00277	0.00281	0.00278
	(!A2 * !B1 * !C1 * Y)	-0.00365	-0.00368	-0.00366

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00683	0.00589	0.00576
	(A2 * B1 * C1 * !Y)	-0.00598	-0.00713	-0.00715
	(A2 * B1 * !C1 * Y)	0.00575	0.00582	0.00575
	(A2 * B1 * !C1 * Y)	-0.00698	-0.00719	-0.00713
	(A2 * !B1 * Y)	0.00575	0.00582	0.00575
	(A2 * !B1 * Y)	-0.00698	-0.00719	-0.00713
	(!A2 * B1 * !C1 * Y)	0.00530	0.00540	0.00534
	(!A2 * B1 * !C1 * Y)	-0.00722	-0.00730	-0.00725
	(!A2 * !B1 * C1 * Y)	0.00540	0.00548	0.00542
	(!A2 * !B1 * C1 * Y)	-0.00724	-0.00730	-0.00726
	(!A2 * !B1 * !C1 * Y)	0.00540	0.00543	0.00541
	(!A2 * !B1 * !C1 * Y)	-0.00724	-0.00727	-0.00726

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)**	-0.00149	-0.00150	-0.00149
	(A2 * B1 * C1 * !Y)	0.00175	0.00178	0.00177
	(A2 * B1 * !C1 * Y)	-0.00150	-0.00150	-0.00150
	(A2 * B1 * !C1 * Y)	0.00176	0.00176	0.00176
	(A2 * !B1 * Y)	-0.00150	-0.00150	-0.00150
	(A2 * !B1 * Y)	0.00176	0.00177	0.00176
	(!A2 * B1 * !C1 * Y)	-0.00130	-0.00140	-0.00140
	(!A2 * B1 * !C1 * Y)	0.00178	0.00181	0.00179
	(!A2 * !B1 * C1 * Y)	-0.00136	-0.00144	-0.00144
	(!A2 * !B1 * C1 * Y)	0.00178	0.00181	0.00179
	(!A2 * !B1 * !C1 * Y)	-0.00136	-0.00144	-0.00143
	(!A2 * !B1 * !C1 * Y)	0.00178	0.00181	0.00179

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00293	-0.00293	-0.00292
	(A2 * B1 * C1 * !Y)	0.00358	0.00359	0.00360
	(A2 * B1 * !C1 * Y)	-0.00292	-0.00293	-0.00293
	(A2 * B1 * !C1 * Y)	0.00358	0.00361	0.00360
	(A2 * !B1 * Y)	-0.00293	-0.00293	-0.00293
	(A2 * !B1 * Y)	0.00360	0.00361	0.00360
	(!A2 * B1 * !C1 * Y)	-0.00257	-0.00277	-0.00274
	(!A2 * B1 * !C1 * Y)	0.00367	0.00371	0.00367
	(!A2 * !B1 * C1 * Y)	-0.00265	-0.00278	-0.00278
	(!A2 * !B1 * C1 * Y)	0.00366	0.00367	0.00367
	(!A2 * !B1 * !C1 * Y)	-0.00265	-0.00280	-0.00278
	(!A2 * !B1 * !C1 * Y)	0.00366	0.00370	0.00367
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00572	-0.00575	-0.00572
	(A2 * B1 * C1 * !Y)	0.00711	0.00718	0.00715
	(A2 * B1 * !C1 * Y)	-0.00572	-0.00576	-0.00574
	(A2 * B1 * !C1 * Y)	0.00710	0.00719	0.00713
	(A2 * !B1 * Y)	-0.00572	-0.00576	-0.00574
	(A2 * !B1 * Y)	0.00709	0.00719	0.00713
	(!A2 * B1 * !C1 * Y)	-0.00493	-0.00535	-0.00534
	(!A2 * B1 * !C1 * Y)	0.00730	0.00730	0.00728
	(!A2 * !B1 * C1 * Y)	-0.00510	-0.00547	-0.00542
	(!A2 * !B1 * C1 * Y)	0.00724	0.00735	0.00728
	(!A2 * !B1 * !C1 * Y)	-0.00511	-0.00543	-0.00541
	(!A2 * !B1 * !C1 * Y)	0.00724	0.00735	0.00728

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)**	0.00161	0.00164	0.00161
	(A1 * B1 * C1 * !Y)	-0.00088	-0.00090	-0.00088
	(A1 * B1 * !C1 * Y)	0.00146	0.00147	0.00146
	(A1 * B1 * !C1 * Y)	-0.00174	-0.00177	-0.00177
	(A1 * !B1 * C1 * Y)	0.00146	0.00147	0.00146
	(A1 * !B1 * C1 * Y)	-0.00174	-0.00177	-0.00177
	(A1 * !B1 * !C1 * Y)	0.00146	0.00149	0.00146
	(A1 * !B1 * !C1 * Y)	-0.00174	-0.00177	-0.00177
	(!A1 * B1 * !C1 * Y)	0.00136	0.00138	0.00136
	(!A1 * B1 * !C1 * Y)	-0.00179	-0.00180	-0.00179
	(!A1 * !B1 * C1 * Y)	0.00139	0.00140	0.00139
	(!A1 * !B1 * C1 * Y)	-0.00179	-0.00181	-0.00180
	(!A1 * !B1 * !C1 * Y)	0.00138	0.00139	0.00139
	(!A1 * !B1 * !C1 * Y)	-0.00179	-0.00180	-0.00180
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00332	0.00338	0.00332
	(A1 * B1 * C1 * !Y)	-0.00172	-0.00175	-0.00172
	(A1 * B1 * !C1 * Y)	0.00293	0.00295	0.00294
	(A1 * B1 * !C1 * Y)	-0.00345	-0.00357	-0.00356
	(A1 * !B1 * C1 * Y)	0.00297	0.00295	0.00294
	(A1 * !B1 * C1 * Y)	-0.00349	-0.00357	-0.00356
	(A1 * !B1 * !C1 * Y)	0.00293	0.00298	0.00294
	(A1 * !B1 * !C1 * Y)	-0.00346	-0.00359	-0.00356
	(!A1 * B1 * !C1 * Y)	0.00271	0.00276	0.00273
	(!A1 * B1 * !C1 * Y)	-0.00361	-0.00364	-0.00362
	(!A1 * !B1 * C1 * Y)	0.00278	0.00281	0.00277
	(!A1 * !B1 * C1 * Y)	-0.00361	-0.00361	-0.00362
	(!A1 * !B1 * !C1 * Y)	0.00278	0.00279	0.00277
	(!A1 * !B1 * !C1 * Y)	-0.00361	-0.00362	-0.00362

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00649	0.00660	0.00649
	(A1 * B1 * C1 * !Y)	-0.00348	-0.00354	-0.00348
	(A1 * B1 * !C1 * Y)	0.00578	0.00580	0.00575
	(A1 * B1 * !C1 * Y)	-0.00703	-0.00714	-0.00713
	(A1 * !B1 * C1 * Y)	0.00578	0.00580	0.00575
	(A1 * !B1 * C1 * Y)	-0.00703	-0.00714	-0.00713
	(A1 * !B1 * !C1 * Y)	0.00579	0.00576	0.00575
	(A1 * !B1 * !C1 * Y)	-0.00704	-0.00718	-0.00714
	(!A1 * B1 * !C1 * Y)	0.00529	0.00537	0.00531
	(!A1 * B1 * !C1 * Y)	-0.00727	-0.00732	-0.00728
	(!A1 * !B1 * C1 * Y)	0.00546	0.00550	0.00544
	(!A1 * !B1 * C1 * Y)	-0.00727	-0.00732	-0.00728
	(!A1 * !B1 * !C1 * Y)	0.00540	0.00547	0.00541
	(!A1 * !B1 * !C1 * Y)	-0.00727	-0.00733	-0.00728

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)**	-0.00155	-0.00156	-0.00160
	(A1 * B1 * C1 * !Y)	0.00094	0.00094	0.00090
	(A1 * B1 * !C1 * Y)	-0.00146	-0.00147	-0.00146
	(A1 * B1 * !C1 * Y)	0.00176	0.00177	0.00177
	(A1 * !B1 * C1 * Y)	-0.00146	-0.00147	-0.00146
	(A1 * !B1 * C1 * Y)	0.00177	0.00177	0.00177
	(A1 * !B1 * !C1 * Y)	-0.00146	-0.00147	-0.00146
	(A1 * !B1 * !C1 * Y)	0.00177	0.00177	0.00177
	(!A1 * B1 * !C1 * Y)	-0.00126	-0.00138	-0.00136
	(!A1 * B1 * !C1 * Y)	0.00179	0.00182	0.00180
	(!A1 * !B1 * C1 * Y)	-0.00132	-0.00140	-0.00139
	(!A1 * !B1 * C1 * Y)	0.00179	0.00181	0.00180
	(!A1 * !B1 * !C1 * Y)	-0.00132	-0.00139	-0.00139
	(!A1 * !B1 * !C1 * Y)	0.00179	0.00181	0.00180
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00314	-0.00317	-0.00330
	(A1 * B1 * C1 * !Y)	0.00188	0.00189	0.00176
	(A1 * B1 * !C1 * Y)	-0.00293	-0.00295	-0.00294
	(A1 * B1 * !C1 * Y)	0.00357	0.00359	0.00356
	(A1 * !B1 * C1 * Y)	-0.00293	-0.00295	-0.00294
	(A1 * !B1 * C1 * Y)	0.00354	0.00359	0.00356
	(A1 * !B1 * !C1 * Y)	-0.00293	-0.00295	-0.00294
	(A1 * !B1 * !C1 * Y)	0.00356	0.00359	0.00356
	(!A1 * B1 * !C1 * Y)	-0.00255	-0.00276	-0.00273
	(!A1 * B1 * !C1 * Y)	0.00362	0.00366	0.00363
	(!A1 * !B1 * C1 * Y)	-0.00263	-0.00277	-0.00277
	(!A1 * !B1 * C1 * Y)	0.00361	0.00361	0.00363
	(!A1 * !B1 * !C1 * Y)	-0.00263	-0.00278	-0.00277
	(!A1 * !B1 * !C1 * Y)	0.00361	0.00362	0.00363

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00617	-0.00621	-0.00645
	(A1 * B1 * C1 * !Y)	0.00378	0.00378	0.00355
	(A1 * B1 * !C1 * Y)	-0.00575	-0.00575	-0.00573
	(A1 * B1 * !C1 * Y)	0.00715	0.00714	0.00713
	(A1 * !B1 * C1 * Y)	-0.00572	-0.00575	-0.00573
	(A1 * !B1 * C1 * Y)	0.00710	0.00714	0.00713
	(A1 * !B1 * !C1 * Y)	-0.00574	-0.00575	-0.00573
	(A1 * !B1 * !C1 * Y)	0.00715	0.00718	0.00714
	(!A1 * B1 * !C1 * Y)	-0.00489	-0.00537	-0.00531
	(!A1 * B1 * !C1 * Y)	0.00730	0.00738	0.00730
	(!A1 * !B1 * C1 * Y)	-0.00510	-0.00547	-0.00544
	(!A1 * !B1 * C1 * Y)	0.00727	0.00741	0.00730
	(!A1 * !B1 * !C1 * Y)	-0.00511	-0.00547	-0.00541
	(!A1 * !B1 * !C1 * Y)	0.00727	0.00741	0.00730

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00136	0.00137	0.00136
	(A2 * !C1 * Y)	-0.00188	-0.00188	-0.00188
	(A1 * !A2 * !C1 * Y)	0.00136	0.00136	0.00136
	(A1 * !A2 * !C1 * Y)	-0.00188	-0.00188	-0.00188
	(!A1 * !A2 * C1 * Y)	0.00065	0.00064	0.00064
	(!A1 * !A2 * C1 * Y)	-0.00188	-0.00188	-0.00187
	(!A1 * !A2 * !C1 * Y)	0.00080	0.00081	0.00080
	(!A1 * !A2 * !C1 * Y)	-0.00188	-0.00189	-0.00188
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00273	0.00275	0.00273
	(A2 * !C1 * Y)	-0.00369	-0.00370	-0.00368
	(A1 * !A2 * !C1 * Y)	0.00274	0.00277	0.00274
	(A1 * !A2 * !C1 * Y)	-0.00369	-0.00371	-0.00368
	(!A1 * !A2 * C1 * Y)	0.00122	0.00122	0.00124
	(!A1 * !A2 * C1 * Y)	-0.00369	-0.00369	-0.00367
	(!A1 * !A2 * !C1 * Y)	0.00152	0.00152	0.00152
	(!A1 * !A2 * !C1 * Y)	-0.00370	-0.00370	-0.00371
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00543	0.00546	0.00543
	(A2 * !C1 * Y)	-0.00370	-0.00371	-0.00369
	(A1 * !A2 * !C1 * Y)	0.00539	0.00547	0.00542
	(A1 * !A2 * !C1 * Y)	-0.00368	-0.00371	-0.00369
	(!A1 * !A2 * C1 * Y)	0.00235	0.00238	0.00239
	(!A1 * !A2 * C1 * Y)	-0.00368	-0.00371	-0.00366
	(!A1 * !A2 * !C1 * Y)	0.00294	0.00298	0.00295
	(!A1 * !A2 * !C1 * Y)	-0.00372	-0.00376	-0.00373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00126	-0.00137	-0.00136
	(A2 * !C1 * Y)	0.00194	0.00190	0.00188
	(A1 * !A2 * !C1 * Y)	-0.00125	-0.00136	-0.00136
	(A1 * !A2 * !C1 * Y)	0.00197	0.00190	0.00188
	(!A1 * !A2 * C1 * Y)	-0.00060	-0.00062	-0.00062
	(!A1 * !A2 * C1 * Y)	0.00192	0.00195	0.00189
	(!A1 * !A2 * !C1 * Y)	-0.00080	-0.00081	-0.00080
	(!A1 * !A2 * !C1 * Y)	0.00201	0.00199	0.00191
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00249	-0.00275	-0.00273
	(A2 * !C1 * Y)	0.00382	0.00373	0.00370
	(A1 * !A2 * !C1 * Y)	-0.00246	-0.00275	-0.00274
	(A1 * !A2 * !C1 * Y)	0.00389	0.00373	0.00369
	(!A1 * !A2 * C1 * Y)	-0.00113	-0.00116	-0.00118
	(!A1 * !A2 * C1 * Y)	0.00378	0.00386	0.00372
	(!A1 * !A2 * !C1 * Y)	-0.00152	-0.00152	-0.00152
	(!A1 * !A2 * !C1 * Y)	0.00391	0.00394	0.00376
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00495	-0.00545	-0.00543
	(A2 * !C1 * Y)	0.00397	0.00375	0.00371
	(A1 * !A2 * !C1 * Y)	-0.00485	-0.00547	-0.00542
	(A1 * !A2 * !C1 * Y)	0.00411	0.00374	0.00371
	(!A1 * !A2 * C1 * Y)	-0.00222	-0.00226	-0.00229
	(!A1 * !A2 * C1 * Y)	0.00389	0.00395	0.00375
	(!A1 * !A2 * !C1 * Y)	-0.00294	-0.00298	-0.00295
	(!A1 * !A2 * !C1 * Y)	0.00418	0.00413	0.00382

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00050	0.00050	0.00048
	(A2 * !B1 * Y)	-0.00211	-0.00211	-0.00214
	(!A2 * !B1 * Y)	0.00050	0.00050	0.00048
	(!A2 * !B1 * Y)	-0.00210	-0.00212	-0.00214
	(!A1 * !A2 * B1 * Y)	0.00053	0.00053	0.00047
	(!A1 * !A2 * B1 * Y)	-0.00203	-0.00204	-0.00213
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00105	0.00106	0.00100
	(A2 * !B1 * Y)	-0.00408	-0.00411	-0.00419
	(!A2 * !B1 * Y)	0.00105	0.00106	0.00100
	(!A2 * !B1 * Y)	-0.00408	-0.00411	-0.00419
	(!A1 * !A2 * B1 * Y)	0.00105	0.00105	0.00094
	(!A1 * !A2 * B1 * Y)	-0.00393	-0.00397	-0.00416
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00202	0.00201	0.00191
	(A2 * !B1 * Y)	-0.00476	-0.00477	-0.00492
	(!A2 * !B1 * Y)	0.00200	0.00201	0.00191
	(!A2 * !B1 * Y)	-0.00473	-0.00477	-0.00492
	(!A1 * !A2 * B1 * Y)	0.00200	0.00201	0.00181
	(!A1 * !A2 * B1 * Y)	-0.00442	-0.00447	-0.00487

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00047	-0.00048	-0.00047
	(A2 * !B1 * Y)	0.00215	0.00218	0.00215
	(!A2 * !B1 * Y)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * Y)	0.00215	0.00218	0.00215
	(!A1 * !A2 * B1 * Y)	-0.00047	-0.00046	-0.00046
	(!A1 * !A2 * B1 * Y)	0.00215	0.00215	0.00215
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00097	-0.00099	-0.00097
	(A2 * !B1 * Y)	0.00420	0.00427	0.00420
	(!A2 * !B1 * Y)	-0.00097	-0.00097	-0.00097
	(!A2 * !B1 * Y)	0.00420	0.00419	0.00420
	(!A1 * !A2 * B1 * Y)	-0.00093	-0.00094	-0.00094
	(!A1 * !A2 * B1 * Y)	0.00417	0.00422	0.00420
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00188	-0.00187	-0.00186
	(A2 * !B1 * Y)	0.00495	0.00495	0.00493
	(!A2 * !B1 * Y)	-0.00186	-0.00186	-0.00186
	(!A2 * !B1 * Y)	0.00492	0.00493	0.00493
	(!A1 * !A2 * B1 * Y)	-0.00179	-0.00180	-0.00179
	(!A1 * !A2 * B1 * Y)	0.00491	0.00494	0.00492

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00261	0.00281	0.00258	0.00254	1.10323
sky130_fd_sc_hs__o211a_2	0.00277	0.00276	0.00276	0.00269	2.13826
sky130_fd_sc_hs__o211a_4	0.00501	0.00478	0.00495	0.00437	3.96498

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211a_1	0.00000	0.11049	0.41018
sky130_fd_sc_hs__o211a_2	0.00000	0.15368	0.41637
sky130_fd_sc_hs__o211a_4	0.00000	0.42798	1.46609

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)	0.11841	0.64916	6.37229
	A2->X (RR)	0.10487	0.62638	6.36892
	B1->X (RR)	0.11153	0.65866	6.61364
	C1->X (RR)	0.10378	0.65107	6.61098
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.11990	0.56212	6.40187
	A2->X (RR)	0.10365	0.53973	6.38269
	B1->X (RR)	0.11396	0.58410	6.65457
	C1->X (RR)	0.10597	0.57964	6.65290
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.12021	0.49695	6.51125
	A2->X (RR)	0.11080	0.47567	6.51528
	B1->X (RR)	0.11259	0.50915	6.72051
	C1->X (RR)	0.10283	0.50024	6.71930

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.18142	0.66145	4.89646
	A2->X (FF)	0.16802	0.65739	4.84451
	B1->X (FF)	0.08552	0.54316	4.52391
	C1->X (FF)	0.07660	0.52106	4.48460
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.21085	0.68077	5.05258
	A2->X (FF)	0.19566	0.67927	5.00986
	B1->X (FF)	0.10090	0.55227	4.65971
	C1->X (FF)	0.09088	0.53151	4.60569
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.19756	0.62685	4.93443
	A2->X (FF)	0.17937	0.61839	4.87431
	B1->X (FF)	0.10406	0.51834	4.59627
	C1->X (FF)	0.10266	0.51430	4.61876

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01182	0.01195	0.02244
	A1	0.00484	0.00506	0.01567
	A2	0.01057	0.01070	0.02612
	A2	0.00415	0.00428	0.01990
	B1	0.00897	0.00928	0.03007
	B1	0.00399	0.00431	0.02524
	C1	0.00810	0.00880	0.03175
	C1	0.00397	0.00466	0.02775
sky130_fd_sc_hs__o211a_2	A1	0.01448	0.01486	0.02478
	A1	0.00714	0.00752	0.01782
	A2	0.01277	0.01318	0.02756
	A2	0.00634	0.00675	0.02151
	B1	0.01151	0.01206	0.03233
	B1	0.00623	0.00682	0.02732
	C1	0.01056	0.01136	0.03355
	C1	0.00621	0.00705	0.02945
sky130_fd_sc_hs__o211a_4	A1	0.02688	0.02768	0.05030
	A1	0.01359	0.01441	0.03744
	A2	0.02317	0.02397	0.05715
	A2	0.01190	0.01281	0.04631
	B1	0.02486	0.02578	0.06280
	B1	0.01202	0.01323	0.05296
	C1	0.01888	0.02062	0.06751
	C1	0.01207	0.01389	0.06094

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00462	0.00467	0.01701
	A1	0.01144	0.01149	0.02296
	A2	0.00425	0.00510	0.02317
	A2	0.01049	0.01134	0.02930
	B1	0.00364	0.00488	0.02692
	B1	0.00942	0.01048	0.03183
	C1	0.00322	0.00440	0.02757
	C1	0.00818	0.00929	0.03155
sky130_fd_sc_hs__o211a_2	A1	0.00687	0.00673	0.01933
	A1	0.01405	0.01410	0.02549
	A2	0.00687	0.00752	0.02656
	A2	0.01315	0.01391	0.03196
	B1	0.00581	0.00752	0.03015
	B1	0.01189	0.01320	0.03464
	C1	0.00532	0.00717	0.03027
	C1	0.01051	0.01185	0.03375
sky130_fd_sc_hs__o211a_4	A1	0.01314	0.01359	0.03678
	A1	0.02613	0.02658	0.04958
	A2	0.01350	0.01520	0.05296
	A2	0.02443	0.02611	0.06239
	B1	0.01050	0.01350	0.06235
	B1	0.02132	0.02409	0.06966
	C1	0.01026	0.01330	0.06288
	C1	0.01879	0.02181	0.06771

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)**	0.00168	0.00149	0.00145
	(A2 * B1 * C1 * X)	-0.00137	-0.00160	-0.00161
	(A2 * B1 * !C1 * !X)	0.00128	0.00130	0.00128
	(A2 * B1 * !C1 * !X)	-0.00175	-0.00177	-0.00177
	(A2 * !B1 * !X)	0.00128	0.00130	0.00128
	(A2 * !B1 * !X)	-0.00175	-0.00177	-0.00177
	(!A2 * B1 * !C1 * !X)	0.00121	0.00122	0.00121
	(!A2 * B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(!A2 * !B1 * C1 * !X)	0.00123	0.00123	0.00122
	(!A2 * !B1 * C1 * !X)	-0.00180	-0.00181	-0.00180
	(!A2 * !B1 * !C1 * !X)	0.00122	0.00122	0.00121
	(!A2 * !B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00185	0.00166	0.00162
	(A2 * B1 * C1 * X)	-0.00132	-0.00155	-0.00157
	(A2 * B1 * !C1 * !X)	0.00140	0.00141	0.00140
	(A2 * B1 * !C1 * !X)	-0.00176	-0.00180	-0.00179
	(A2 * !B1 * !X)	0.00140	0.00141	0.00140
	(A2 * !B1 * !X)	-0.00176	-0.00179	-0.00179
	(!A2 * B1 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A2 * B1 * !C1 * !X)	-0.00181	-0.00181	-0.00181
	(!A2 * !B1 * C1 * !X)	0.00133	0.00135	0.00134
	(!A2 * !B1 * C1 * !X)	-0.00181	-0.00181	-0.00181
	(!A2 * !B1 * !C1 * !X)	0.00133	0.00134	0.00133
	(!A2 * !B1 * !C1 * !X)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00332	0.00294	0.00288
	(A2 * B1 * C1 * X)	-0.00272	-0.00320	-0.00321
	(A2 * B1 * !C1 * !X)	0.00282	0.00287	0.00283
	(A2 * B1 * !C1 * !X)	-0.00318	-0.00327	-0.00325
	(A2 * !B1 * !X)	0.00283	0.00287	0.00283
	(A2 * !B1 * !X)	-0.00318	-0.00327	-0.00325
	(!A2 * B1 * !C1 * !X)	0.00268	0.00269	0.00269
	(!A2 * B1 * !C1 * !X)	-0.00328	-0.00329	-0.00329
	(!A2 * !B1 * C1 * !X)	0.00273	0.00273	0.00273
	(!A2 * !B1 * C1 * !X)	-0.00328	-0.00329	-0.00329
	(!A2 * !B1 * !C1 * !X)	0.00269	0.00273	0.00270
	(!A2 * !B1 * !C1 * !X)	-0.00328	-0.00331	-0.00329

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)**	-0.00144	-0.00144	-0.00143
	(A2 * B1 * C1 * X)	0.00162	0.00162	0.00162
	(A2 * B1 * !C1 * !X)	-0.00128	-0.00128	-0.00128
	(A2 * B1 * !C1 * !X)	0.00177	0.00177	0.00177
	(A2 * !B1 * !X)	-0.00128	-0.00128	-0.00128
	(A2 * !B1 * !X)	0.00178	0.00177	0.00177
	(!A2 * B1 * !C1 * !X)	-0.00111	-0.00122	-0.00121
	(!A2 * B1 * !C1 * !X)	0.00181	0.00182	0.00180
	(!A2 * !B1 * C1 * !X)	-0.00115	-0.00123	-0.00122
	(!A2 * !B1 * C1 * !X)	0.00181	0.00182	0.00181
	(!A2 * !B1 * !C1 * !X)	-0.00116	-0.00122	-0.00121
	(!A2 * !B1 * !C1 * !X)	0.00181	0.00182	0.00180

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00160	-0.00162	-0.00161
	(A2 * B1 * C1 * X)	0.00156	0.00159	0.00157
	(A2 * B1 * !C1 * !X)	-0.00140	-0.00140	-0.00139
	(A2 * B1 * !C1 * !X)	0.00179	0.00180	0.00179
	(A2 * !B1 * !X)	-0.00140	-0.00140	-0.00139
	(A2 * !B1 * !X)	0.00179	0.00179	0.00179
	(!A2 * B1 * !C1 * !X)	-0.00121	-0.00131	-0.00130
	(!A2 * B1 * !C1 * !X)	0.00181	0.00183	0.00181
	(!A2 * !B1 * C1 * !X)	-0.00126	-0.00133	-0.00134
	(!A2 * !B1 * C1 * !X)	0.00182	0.00181	0.00182
	(!A2 * !B1 * !C1 * !X)	-0.00127	-0.00134	-0.00133
	(!A2 * !B1 * !C1 * !X)	0.00182	0.00183	0.00182
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00285	-0.00286	-0.00284
	(A2 * B1 * C1 * X)	0.00322	0.00325	0.00323
	(A2 * B1 * !C1 * !X)	-0.00282	-0.00284	-0.00282
	(A2 * B1 * !C1 * !X)	0.00324	0.00327	0.00325
	(A2 * !B1 * !X)	-0.00282	-0.00284	-0.00282
	(A2 * !B1 * !X)	0.00324	0.00327	0.00325
	(!A2 * B1 * !C1 * !X)	-0.00249	-0.00269	-0.00269
	(!A2 * B1 * !C1 * !X)	0.00329	0.00333	0.00330
	(!A2 * !B1 * C1 * !X)	-0.00258	-0.00273	-0.00273
	(!A2 * !B1 * C1 * !X)	0.00328	0.00333	0.00330
	(!A2 * !B1 * !C1 * !X)	-0.00258	-0.00273	-0.00270
	(!A2 * !B1 * !C1 * !X)	0.00328	0.00333	0.00330

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)**	0.00185	0.00188	0.00185
	(A1 * B1 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * B1 * !C1 * !X)	0.00168	0.00168	0.00166
	(A1 * B1 * !C1 * !X)	-0.00161	-0.00163	-0.00162
	(A1 * !B1 * C1 * !X)	0.00168	0.00168	0.00166
	(A1 * !B1 * C1 * !X)	-0.00161	-0.00163	-0.00162
	(A1 * !B1 * !C1 * !X)	0.00168	0.00166	0.00166
	(A1 * !B1 * !C1 * !X)	-0.00161	-0.00162	-0.00162
	(!A1 * B1 * !C1 * !X)	0.00158	0.00158	0.00157
	(!A1 * B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * !B1 * C1 * !X)	0.00160	0.00160	0.00159
	(!A1 * !B1 * C1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * !B1 * !C1 * !X)	0.00159	0.00160	0.00159
	(!A1 * !B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00163	0.00166	0.00163
	(A1 * B1 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * B1 * !C1 * !X)	0.00137	0.00138	0.00138
	(A1 * B1 * !C1 * !X)	-0.00167	-0.00170	-0.00169
	(A1 * !B1 * C1 * !X)	0.00138	0.00139	0.00138
	(A1 * !B1 * C1 * !X)	-0.00167	-0.00170	-0.00169
	(A1 * !B1 * !C1 * !X)	0.00138	0.00140	0.00138
	(A1 * !B1 * !C1 * !X)	-0.00167	-0.00170	-0.00169
	(!A1 * B1 * !C1 * !X)	0.00128	0.00128	0.00128
	(!A1 * B1 * !C1 * !X)	-0.00172	-0.00172	-0.00172
	(!A1 * !B1 * C1 * !X)	0.00133	0.00133	0.00132
	(!A1 * !B1 * C1 * !X)	-0.00172	-0.00173	-0.00172
	(!A1 * !B1 * !C1 * !X)	0.00132	0.00133	0.00131
	(!A1 * !B1 * !C1 * !X)	-0.00172	-0.00173	-0.00172

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00277	0.00282	0.00277
	(A1 * B1 * C1 * X)	-0.00161	-0.00163	-0.00160
	(A1 * B1 * !C1 * !X)	0.00242	0.00245	0.00243
	(A1 * B1 * !C1 * !X)	-0.00319	-0.00326	-0.00325
	(A1 * !B1 * C1 * !X)	0.00242	0.00244	0.00243
	(A1 * !B1 * C1 * !X)	-0.00319	-0.00326	-0.00325
	(A1 * !B1 * !C1 * !X)	0.00242	0.00243	0.00242
	(A1 * !B1 * !C1 * !X)	-0.00320	-0.00326	-0.00325
	(!A1 * B1 * !C1 * !X)	0.00225	0.00225	0.00224
	(!A1 * B1 * !C1 * !X)	-0.00332	-0.00332	-0.00331
	(!A1 * !B1 * C1 * !X)	0.00226	0.00231	0.00228
	(!A1 * !B1 * C1 * !X)	-0.00329	-0.00333	-0.00331
	(!A1 * !B1 * !C1 * !X)	0.00227	0.00231	0.00229
	(!A1 * !B1 * !C1 * !X)	-0.00329	-0.00332	-0.00331

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)**	-0.00179	-0.00180	-0.00184
	(A1 * B1 * C1 * X)	0.00083	0.00084	0.00081
	(A1 * B1 * !C1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * B1 * !C1 * !X)	0.00161	0.00163	0.00162
	(A1 * !B1 * C1 * !X)	-0.00166	-0.00167	-0.00166
	(A1 * !B1 * C1 * !X)	0.00161	0.00163	0.00162
	(A1 * !B1 * !C1 * !X)	-0.00166	-0.00166	-0.00166
	(A1 * !B1 * !C1 * !X)	0.00161	0.00163	0.00162
	(!A1 * B1 * !C1 * !X)	-0.00149	-0.00158	-0.00157
	(!A1 * B1 * !C1 * !X)	0.00166	0.00166	0.00165
	(!A1 * !B1 * C1 * !X)	-0.00153	-0.00160	-0.00159
	(!A1 * !B1 * C1 * !X)	0.00165	0.00167	0.00165
	(!A1 * !B1 * !C1 * !X)	-0.00153	-0.00160	-0.00159
	(!A1 * !B1 * !C1 * !X)	0.00165	0.00167	0.00165
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00158	-0.00159	-0.00162
	(A1 * B1 * C1 * X)	0.00084	0.00084	0.00081
	(A1 * B1 * !C1 * !X)	-0.00137	-0.00138	-0.00137
	(A1 * B1 * !C1 * !X)	0.00169	0.00170	0.00169
	(A1 * !B1 * C1 * !X)	-0.00137	-0.00138	-0.00137
	(A1 * !B1 * C1 * !X)	0.00168	0.00170	0.00169
	(A1 * !B1 * !C1 * !X)	-0.00137	-0.00138	-0.00137
	(A1 * !B1 * !C1 * !X)	0.00168	0.00170	0.00169
	(!A1 * B1 * !C1 * !X)	-0.00119	-0.00128	-0.00128
	(!A1 * B1 * !C1 * !X)	0.00172	0.00174	0.00172
	(!A1 * !B1 * C1 * !X)	-0.00124	-0.00132	-0.00132
	(!A1 * !B1 * C1 * !X)	0.00172	0.00174	0.00172
	(!A1 * !B1 * !C1 * !X)	-0.00125	-0.00132	-0.00131
	(!A1 * !B1 * !C1 * !X)	0.00172	0.00174	0.00172

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00263	-0.00265	-0.00274
	(A1 * B1 * C1 * X)	0.00174	0.00174	0.00165
	(A1 * B1 * !C1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * B1 * !C1 * !X)	0.00326	0.00326	0.00325
	(A1 * !B1 * C1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * !B1 * C1 * !X)	0.00325	0.00326	0.00325
	(A1 * !B1 * !C1 * !X)	-0.00242	-0.00243	-0.00242
	(A1 * !B1 * !C1 * !X)	0.00326	0.00326	0.00325
	(!A1 * B1 * !C1 * !X)	-0.00208	-0.00225	-0.00224
	(!A1 * B1 * !C1 * !X)	0.00332	0.00335	0.00332
	(!A1 * !B1 * C1 * !X)	-0.00218	-0.00231	-0.00228
	(!A1 * !B1 * C1 * !X)	0.00332	0.00334	0.00332
	(!A1 * !B1 * !C1 * !X)	-0.00218	-0.00231	-0.00229
	(!A1 * !B1 * !C1 * !X)	0.00332	0.00334	0.00332

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00112	0.00112	0.00111
	(A2 * !C1 * !X)	-0.00184	-0.00184	-0.00184
	(A1 * !A2 * !C1 * !X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !C1 * !X)	-0.00183	-0.00184	-0.00184
	(!A1 * !A2 * C1 * !X)	0.00052	0.00052	0.00051
	(!A1 * !A2 * C1 * !X)	-0.00186	-0.00186	-0.00184
	(!A1 * !A2 * !C1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A2 * !C1 * !X)	-0.00186	-0.00186	-0.00186
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00129	0.00131	0.00130
	(A2 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(A1 * !A2 * !C1 * !X)	0.00130	0.00131	0.00130
	(A1 * !A2 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A2 * C1 * !X)	0.00059	0.00059	0.00058
	(!A1 * !A2 * C1 * !X)	-0.00176	-0.00176	-0.00174
	(!A1 * !A2 * !C1 * !X)	0.00073	0.00074	0.00073
	(!A1 * !A2 * !C1 * !X)	-0.00176	-0.00177	-0.00176
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00281	0.00284	0.00283
	(A2 * !C1 * !X)	-0.00295	-0.00296	-0.00295
	(A1 * !A2 * !C1 * !X)	0.00281	0.00284	0.00282
	(A1 * !A2 * !C1 * !X)	-0.00294	-0.00296	-0.00295
	(!A1 * !A2 * C1 * !X)	0.00155	0.00157	0.00154
	(!A1 * !A2 * C1 * !X)	-0.00295	-0.00298	-0.00296
	(!A1 * !A2 * !C1 * !X)	0.00181	0.00181	0.00181
	(!A1 * !A2 * !C1 * !X)	-0.00298	-0.00298	-0.00298

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00104	-0.00112	-0.00111
	(A2 * !C1 * !X)	0.00191	0.00187	0.00184
	(A1 * !A2 * !C1 * !X)	-0.00102	-0.00112	-0.00111
	(A1 * !A2 * !C1 * !X)	0.00193	0.00185	0.00184
	(!A1 * !A2 * C1 * !X)	-0.00048	-0.00049	-0.00049
	(!A1 * !A2 * C1 * !X)	0.00188	0.00191	0.00186
	(!A1 * !A2 * !C1 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A2 * !C1 * !X)	0.00195	0.00195	0.00188
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00120	-0.00131	-0.00130
	(A2 * !C1 * !X)	0.00181	0.00176	0.00174
	(A1 * !A2 * !C1 * !X)	-0.00118	-0.00130	-0.00130
	(A1 * !A2 * !C1 * !X)	0.00183	0.00175	0.00174
	(!A1 * !A2 * C1 * !X)	-0.00054	-0.00056	-0.00055
	(!A1 * !A2 * C1 * !X)	0.00178	0.00181	0.00176
	(!A1 * !A2 * !C1 * !X)	-0.00073	-0.00074	-0.00073
	(!A1 * !A2 * !C1 * !X)	0.00190	0.00188	0.00180
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00265	-0.00284	-0.00283
	(A2 * !C1 * !X)	0.00308	0.00299	0.00297
	(A1 * !A2 * !C1 * !X)	-0.00263	-0.00284	-0.00282
	(A1 * !A2 * !C1 * !X)	0.00310	0.00299	0.00297
	(!A1 * !A2 * C1 * !X)	-0.00147	-0.00148	-0.00149
	(!A1 * !A2 * C1 * !X)	0.00305	0.00306	0.00299
	(!A1 * !A2 * !C1 * !X)	-0.00181	-0.00181	-0.00181
	(!A1 * !A2 * !C1 * !X)	0.00320	0.00318	0.00304

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00041	0.00041	0.00040
	(A2 * !B1 * !X)	-0.00200	-0.00201	-0.00203
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00040
	(!A2 * !B1 * !X)	-0.00200	-0.00201	-0.00203
	(!A1 * !A2 * B1 * !X)	0.00046	0.00046	0.00040
	(!A1 * !A2 * B1 * !X)	-0.00192	-0.00194	-0.00202
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00051	0.00051	0.00050
	(A2 * !B1 * !X)	-0.00193	-0.00193	-0.00196
	(!A2 * !B1 * !X)	0.00051	0.00051	0.00050
	(!A2 * !B1 * !X)	-0.00193	-0.00193	-0.00196
	(!A1 * !A2 * B1 * !X)	0.00055	0.00055	0.00050
	(!A1 * !A2 * B1 * !X)	-0.00186	-0.00187	-0.00196
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00076	0.00076	0.00073
	(A2 * !B1 * !X)	-0.00326	-0.00327	-0.00332
	(!A2 * !B1 * !X)	0.00076	0.00076	0.00073
	(!A2 * !B1 * !X)	-0.00326	-0.00327	-0.00332
	(!A1 * !A2 * B1 * !X)	0.00082	0.00083	0.00073
	(!A1 * !A2 * B1 * !X)	-0.00308	-0.00312	-0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00039	-0.00039	-0.00039
	(A2 * !B1 * !X)	0.00203	0.00207	0.00203
	(!A2 * !B1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * !X)	0.00203	0.00207	0.00203
	(!A1 * !A2 * B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B1 * !X)	0.00203	0.00203	0.00203
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(A2 * !B1 * !X)	0.00196	0.00200	0.00197
	(!A2 * !B1 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * !X)	0.00196	0.00200	0.00197
	(!A1 * !A2 * B1 * !X)	-0.00048	-0.00049	-0.00047
	(!A1 * !A2 * B1 * !X)	0.00196	0.00200	0.00196
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00071	-0.00072	-0.00070
	(A2 * !B1 * !X)	0.00332	0.00338	0.00333
	(!A2 * !B1 * !X)	-0.00070	-0.00072	-0.00070
	(!A2 * !B1 * !X)	0.00332	0.00338	0.00333
	(!A1 * !A2 * B1 * !X)	-0.00068	-0.00070	-0.00067
	(!A1 * !A2 * B1 * !X)	0.00332	0.00337	0.00333

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00284	0.00292	0.00284	0.53240
sky130_fd_sc_hs__o21ai_2	0.00574	0.00532	0.00525	0.99658
sky130_fd_sc_hs__o21ai_4	0.01019	0.01052	0.00781	1.76014

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.03323	0.10576
sky130_fd_sc_hs__o21ai_2	0.00000	0.06645	0.21153
sky130_fd_sc_hs__o21ai_4	0.00000	0.09325	0.31729

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)	0.10558	0.99553	10.79760
	A2->Y (FR)	0.09108	0.98574	10.94360
	B1->Y (FR)	0.03578	0.66563	7.86460
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.09325	0.84552	10.63550
	A2->Y (FR)	0.07374	0.83166	10.76770
	B1->Y (FR)	0.02723	0.59036	7.79307
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.09301	0.74143	10.52250
	A2->Y (FR)	0.07401	0.75004	10.90160
	B1->Y (FR)	0.03933	0.71897	10.76680

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.03851	0.40303	4.32560
	A2->Y (RF)	0.03200	0.38899	4.27008
	B1->Y (RF)	0.03225	0.45029	4.98402
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.03195	0.33476	4.16903
	A2->Y (RF)	0.02769	0.32622	4.19311
	B1->Y (RF)	0.02038	0.36933	4.92316
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.03148	0.28605	4.04752
	A2->Y (RF)	0.02642	0.27306	4.04048
	B1->Y (RF)	0.01700	0.30696	4.77543

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00063	0.00049	0.00270
	A1	0.00704	0.00692	0.00916
	A2	0.00068	0.00098	0.00557
	A2	0.00606	0.00639	0.01099
	B1	-0.00036	0.00024	0.00596
	B1	0.00394	0.00454	0.01041
sky130_fd_sc_hs__o21ai_2	A1	0.00072	0.00045	0.00504
	A1	0.01296	0.01272	0.01739
	A2	0.00071	0.00157	0.01030
	A2	0.01071	0.01158	0.02038
	B1	-0.00178	-0.00052	0.01080
	B1	0.00788	0.00910	0.02002
sky130_fd_sc_hs__o21ai_4	A1	0.00104	0.00061	0.01003
	A1	0.02485	0.02413	0.03399
	A2	0.00074	0.00161	0.01970
	A2	0.02073	0.02158	0.03977
	B1	-0.00333	-0.00149	0.01116
	B1	0.01233	0.01376	0.02601

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00764	0.00758	0.00936
	A1	0.00118	0.00107	0.00288
	A2	0.00581	0.00581	0.00779
	A2	0.00033	0.00031	0.00209
	B1	0.00439	0.00446	0.00730
	B1	0.00011	0.00015	0.00281
sky130_fd_sc_hs__o21ai_2	A1	0.01423	0.01399	0.01785
	A1	0.00187	0.00159	0.00523
	A2	0.00994	0.00999	0.01365
	A2	-0.00025	-0.00023	0.00343
	B1	0.01133	0.01151	0.01698
	B1	-0.00053	-0.00028	0.00505
sky130_fd_sc_hs__o21ai_4	A1	0.02692	0.02647	0.03400
	A1	0.00297	0.00249	0.01010
	A2	0.01872	0.01885	0.02658
	A2	-0.00165	-0.00153	0.00614
	B1	0.02065	0.02088	0.02684
	B1	0.00041	0.00078	0.00642

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00189	0.00169	0.00166
	(A2 * B1 * !Y)	-0.00149	-0.00174	-0.00174
	(A2 * !B1 * Y)	0.00153	0.00155	0.00153
	(A2 * !B1 * Y)	-0.00184	-0.00187	-0.00186
	(!A2 * !B1 * Y)	0.00145	0.00146	0.00145
	(!A2 * !B1 * Y)	-0.00189	-0.00190	-0.00189
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00360	0.00316	0.00309
	(A2 * B1 * !Y)	-0.00299	-0.00352	-0.00353
	(A2 * !B1 * Y)	0.00292	0.00295	0.00292
	(A2 * !B1 * Y)	-0.00363	-0.00370	-0.00370
	(!A2 * !B1 * Y)	0.00277	0.00281	0.00278
	(!A2 * !B1 * Y)	-0.00374	-0.00377	-0.00375
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00667	0.00579	0.00566
	(A2 * B1 * !Y)	-0.00595	-0.00703	-0.00704
	(A2 * !B1 * Y)	0.00567	0.00572	0.00564
	(A2 * !B1 * Y)	-0.00692	-0.00711	-0.00705
	(!A2 * !B1 * Y)	0.00533	0.00539	0.00535
	(!A2 * !B1 * Y)	-0.00716	-0.00715	-0.00717

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00165	-0.00166	-0.00165
	(A2 * B1 * !Y)	0.00173	0.00176	0.00174
	(A2 * !B1 * Y)	-0.00153	-0.00153	-0.00153
	(A2 * !B1 * Y)	0.00187	0.00187	0.00186
	(!A2 * !B1 * Y)	-0.00137	-0.00146	-0.00145
	(!A2 * !B1 * Y)	0.00190	0.00191	0.00189
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00308	-0.00308	-0.00307
	(A2 * B1 * !Y)	0.00351	0.00353	0.00353
	(A2 * !B1 * Y)	-0.00290	-0.00291	-0.00291
	(A2 * !B1 * Y)	0.00368	0.00370	0.00370
	(!A2 * !B1 * Y)	-0.00261	-0.00279	-0.00278
	(!A2 * !B1 * Y)	0.00378	0.00382	0.00376
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00565	-0.00566	-0.00563
	(A2 * B1 * !Y)	0.00703	0.00706	0.00704
	(A2 * !B1 * Y)	-0.00564	-0.00566	-0.00563
	(A2 * !B1 * Y)	0.00705	0.00712	0.00705
	(!A2 * !B1 * Y)	-0.00501	-0.00535	-0.00535
	(!A2 * !B1 * Y)	0.00724	0.00715	0.00719

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00170	0.00173	0.00170
	(A1 * B1 * !Y)	-0.00085	-0.00086	-0.00085
	(A1 * !B1 * Y)	0.00138	0.00139	0.00139
	(A1 * !B1 * Y)	-0.00187	-0.00190	-0.00190
	(!A1 * !B1 * Y)	0.00134	0.00134	0.00133
	(!A1 * !B1 * Y)	-0.00193	-0.00193	-0.00193
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00308	0.00313	0.00308
	(A1 * B1 * !Y)	-0.00172	-0.00174	-0.00171
	(A1 * !B1 * Y)	0.00282	0.00285	0.00283
	(A1 * !B1 * Y)	-0.00336	-0.00344	-0.00343
	(!A1 * !B1 * Y)	0.00268	0.00272	0.00269
	(!A1 * !B1 * Y)	-0.00348	-0.00348	-0.00349
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00652	0.00661	0.00650
	(A1 * B1 * !Y)	-0.00350	-0.00353	-0.00347
	(A1 * !B1 * Y)	0.00576	0.00570	0.00573
	(A1 * !B1 * Y)	-0.00704	-0.00715	-0.00714
	(!A1 * !B1 * Y)	0.00544	0.00548	0.00542
	(!A1 * !B1 * Y)	-0.00732	-0.00734	-0.00729

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00164	-0.00166	-0.00169
	(A1 * B1 * !Y)	0.00089	0.00090	0.00086
	(A1 * !B1 * Y)	-0.00138	-0.00139	-0.00138
	(A1 * !B1 * Y)	0.00190	0.00191	0.00190
	(!A1 * !B1 * Y)	-0.00126	-0.00133	-0.00133
	(!A1 * !B1 * Y)	0.00195	0.00194	0.00193
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00293	-0.00297	-0.00306
	(A1 * B1 * !Y)	0.00182	0.00185	0.00175
	(A1 * !B1 * Y)	-0.00282	-0.00283	-0.00283
	(A1 * !B1 * Y)	0.00343	0.00344	0.00343
	(!A1 * !B1 * Y)	-0.00253	-0.00268	-0.00269
	(!A1 * !B1 * Y)	0.00351	0.00348	0.00350
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00616	-0.00623	-0.00646
	(A1 * B1 * !Y)	0.00373	0.00377	0.00354
	(A1 * !B1 * Y)	-0.00572	-0.00570	-0.00571
	(A1 * !B1 * Y)	0.00713	0.00718	0.00714
	(!A1 * !B1 * Y)	-0.00508	-0.00547	-0.00542
	(!A1 * !B1 * Y)	0.00738	0.00738	0.00731

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00054	0.00054	0.00050
	(!A1 * !A2 * Y)	-0.00217	-0.00217	-0.00222
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00109	0.00110	0.00102
	(!A1 * !A2 * Y)	-0.00398	-0.00400	-0.00411
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00191	0.00191	0.00179
	(!A1 * !A2 * Y)	-0.00461	-0.00465	-0.00486

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * Y)	0.00223	0.00224	0.00223
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00099	-0.00100	-0.00099
	(!A1 * !A2 * Y)	0.00411	0.00414	0.00413
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00173	-0.00175	-0.00173
	(!A1 * !A2 * Y)	0.00486	0.00491	0.00488

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00243	0.00246	0.00243	1.07085
sky130_fd_sc_hs__o21a_2	0.00265	0.00261	0.00271	2.09125
sky130_fd_sc_hs__o21a_4	0.00507	0.00469	0.00450	3.99785

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	0.17390	0.43385
sky130_fd_sc_hs__o21a_2	0.00000	0.14865	0.28171
sky130_fd_sc_hs__o21a_4	0.00000	0.41855	0.88009

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)	0.08212	0.60159	6.24734
	A2->X (RR)	0.07238	0.57722	6.24321
	B1->X (RR)	0.07602	0.59752	6.39502
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.08503	0.52311	6.31031
	A2->X (RR)	0.07615	0.50424	6.29872
	B1->X (RR)	0.07905	0.52485	6.42371
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.08959	0.45636	6.35524
	A2->X (RR)	0.08171	0.43446	6.35338
	B1->X (RR)	0.07961	0.45236	6.47014

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.14479	0.59372	4.65166
	A2->X (FF)	0.12892	0.58185	4.59457
	B1->X (FF)	0.07285	0.50393	4.41373
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.18301	0.63275	4.84945
	A2->X (FF)	0.16882	0.63078	4.80429
	B1->X (FF)	0.08232	0.50604	4.48162
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.17747	0.59465	4.86096
	A2->X (FF)	0.15746	0.58322	4.80063
	B1->X (FF)	0.08983	0.49132	4.58650

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00938	0.00966	0.02199
	A1	0.00392	0.00419	0.01680
	A2	0.00764	0.00799	0.02637
	A2	0.00306	0.00341	0.02207
	B1	0.00655	0.00743	0.03026
	B1	0.00316	0.00403	0.02713
sky130_fd_sc_hs__o21a_2	A1	0.01233	0.01287	0.02490
	A1	0.00637	0.00693	0.01936
	A2	0.01064	0.01120	0.02885
	A2	0.00567	0.00626	0.02438
	B1	0.00938	0.01029	0.03036
	B1	0.00554	0.00648	0.02704
sky130_fd_sc_hs__o21a_4	A1	0.02386	0.02482	0.04889
	A1	0.01264	0.01370	0.03844
	A2	0.02003	0.02110	0.05622
	A2	0.01090	0.01210	0.04786
	B1	0.01758	0.01959	0.06251
	B1	0.01098	0.01302	0.05669

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00373	0.00401	0.01633
	A1	0.00913	0.00940	0.02171
	A2	0.00377	0.00485	0.02417
	A2	0.00825	0.00932	0.02837
	B1	0.00286	0.00456	0.03032
	B1	0.00711	0.00851	0.03334
sky130_fd_sc_hs__o21a_2	A1	0.00646	0.00681	0.02095
	A1	0.01231	0.01266	0.02481
	A2	0.00654	0.00763	0.02809
	A2	0.01139	0.01248	0.03156
	B1	0.00526	0.00710	0.03061
	B1	0.00995	0.01134	0.03394
sky130_fd_sc_hs__o21a_4	A1	0.01198	0.01263	0.03834
	A1	0.02305	0.02369	0.04745
	A2	0.01226	0.01446	0.05322
	A2	0.02121	0.02326	0.06047
	B1	0.01002	0.01351	0.06445
	B1	0.01834	0.02145	0.06880

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00155	0.00136	0.00133
	(A2 * B1 * X)	-0.00139	-0.00162	-0.00163
	(A2 * !B1 * !X)	0.00132	0.00134	0.00132
	(A2 * !B1 * !X)	-0.00161	-0.00164	-0.00163
	(!A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * !X)	-0.00165	-0.00166	-0.00165
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00182	0.00162	0.00158
	(A2 * B1 * X)	-0.00136	-0.00159	-0.00161
	(A2 * !B1 * !X)	0.00158	0.00160	0.00158
	(A2 * !B1 * !X)	-0.00158	-0.00161	-0.00160
	(!A2 * !B1 * !X)	0.00149	0.00151	0.00150
	(!A2 * !B1 * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00337	0.00300	0.00294
	(A2 * B1 * X)	-0.00265	-0.00313	-0.00314
	(A2 * !B1 * !X)	0.00285	0.00289	0.00286
	(A2 * !B1 * !X)	-0.00314	-0.00324	-0.00321
	(!A2 * !B1 * !X)	0.00273	0.00275	0.00272
	(!A2 * !B1 * !X)	-0.00326	-0.00327	-0.00325

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00131	-0.00132	-0.00131
	(A2 * B1 * X)	0.00164	0.00165	0.00164
	(A2 * !B1 * !X)	-0.00132	-0.00132	-0.00132
	(A2 * !B1 * !X)	0.00163	0.00164	0.00163
	(!A2 * !B1 * !X)	-0.00118	-0.00127	-0.00126
	(!A2 * !B1 * !X)	0.00167	0.00167	0.00165
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00157	-0.00157	-0.00156
	(A2 * B1 * X)	0.00161	0.00161	0.00162
	(A2 * !B1 * !X)	-0.00158	-0.00158	-0.00157
	(A2 * !B1 * !X)	0.00161	0.00162	0.00160
	(!A2 * !B1 * !X)	-0.00142	-0.00151	-0.00150
	(!A2 * !B1 * !X)	0.00165	0.00164	0.00163
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00292	-0.00293	-0.00291
	(A2 * B1 * X)	0.00314	0.00317	0.00315
	(A2 * !B1 * !X)	-0.00285	-0.00286	-0.00285
	(A2 * !B1 * !X)	0.00320	0.00324	0.00321
	(!A2 * !B1 * !X)	-0.00258	-0.00275	-0.00272
	(!A2 * !B1 * !X)	0.00328	0.00329	0.00326

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00135	0.00138	0.00136
	(A1 * B1 * X)	-0.00083	-0.00085	-0.00083
	(A1 * !B1 * !X)	0.00125	0.00126	0.00126
	(A1 * !B1 * !X)	-0.00156	-0.00159	-0.00158
	(!A1 * !B1 * !X)	0.00118	0.00120	0.00119
	(!A1 * !B1 * !X)	-0.00160	-0.00161	-0.00160
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00155	0.00158	0.00155
	(A1 * B1 * X)	-0.00078	-0.00080	-0.00078
	(A1 * !B1 * !X)	0.00142	0.00143	0.00142
	(A1 * !B1 * !X)	-0.00154	-0.00157	-0.00156
	(!A1 * !B1 * !X)	0.00134	0.00137	0.00135
	(!A1 * !B1 * !X)	-0.00158	-0.00159	-0.00158
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00270	0.00275	0.00271
	(A1 * B1 * X)	-0.00158	-0.00161	-0.00158
	(A1 * !B1 * !X)	0.00240	0.00242	0.00240
	(A1 * !B1 * !X)	-0.00313	-0.00319	-0.00318
	(!A1 * !B1 * !X)	0.00228	0.00230	0.00227
	(!A1 * !B1 * !X)	-0.00325	-0.00325	-0.00324

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00129	-0.00130	-0.00134
	(A1 * B1 * X)	0.00089	0.00089	0.00085
	(A1 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !B1 * !X)	0.00158	0.00159	0.00158
	(!A1 * !B1 * !X)	-0.00112	-0.00120	-0.00119
	(!A1 * !B1 * !X)	0.00162	0.00162	0.00161
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00150	-0.00151	-0.00155
	(A1 * B1 * X)	0.00083	0.00083	0.00080
	(A1 * !B1 * !X)	-0.00141	-0.00142	-0.00142
	(A1 * !B1 * !X)	0.00156	0.00157	0.00156
	(!A1 * !B1 * !X)	-0.00128	-0.00136	-0.00135
	(!A1 * !B1 * !X)	0.00160	0.00160	0.00159
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00257	-0.00259	-0.00268
	(A1 * B1 * X)	0.00171	0.00171	0.00162
	(A1 * !B1 * !X)	-0.00240	-0.00241	-0.00239
	(A1 * !B1 * !X)	0.00318	0.00319	0.00318
	(!A1 * !B1 * !X)	-0.00214	-0.00229	-0.00227
	(!A1 * !B1 * !X)	0.00328	0.00327	0.00325

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00050	0.00050	0.00047
	(!A1 * !A2 * !X)	-0.00171	-0.00172	-0.00177
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00055	0.00055	0.00051
	(!A1 * !A2 * !X)	-0.00194	-0.00195	-0.00201
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00084	0.00084	0.00078
	(!A1 * !A2 * !X)	-0.00331	-0.00332	-0.00343

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !X)	0.00177	0.00178	0.00177
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !X)	0.00201	0.00205	0.00202
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00074	-0.00076	-0.00074
	(!A1 * !A2 * !X)	0.00343	0.00350	0.00345

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00270	0.00299	0.00234	0.52900
sky130_fd_sc_hs__o21bai_2	0.00571	0.00526	0.00258	1.00380
sky130_fd_sc_hs__o21bai_4	0.01030	0.01046	0.00351	1.82103

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	0.18150	0.29920
sky130_fd_sc_hs__o21bai_2	0.00000	0.13800	0.21997
sky130_fd_sc_hs__o21bai_4	0.00000	0.38934	0.61078

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)	0.09893	0.98880	10.76070
	A2->Y (FR)	0.08569	0.98037	10.91080
	B1_N->Y (RR)	0.06180	0.40362	2.94907
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.09063	0.84240	10.63560
	A2->Y (FR)	0.07213	0.83110	10.77100
	B1_N->Y (RR)	0.06150	0.35742	2.91099
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.09313	0.74607	10.60740
	A2->Y (FR)	0.07341	0.74554	10.89400
	B1_N->Y (RR)	0.08253	0.52533	6.47176

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.03857	0.40316	4.33766
	A2->Y (RF)	0.03229	0.39038	4.29130
	B1_N->Y (FF)	0.08621	0.49133	3.75642
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.03531	0.33699	4.19486
	A2->Y (RF)	0.03041	0.32873	4.21945
	B1_N->Y (FF)	0.08784	0.49498	4.00297
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.04204	0.29898	4.23404
	A2->Y (RF)	0.03128	0.28087	4.15283
	B1_N->Y (FF)	0.08731	0.43554	3.89360

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00058	0.00048	0.00275
	A1	0.00555	0.00546	0.00777
	A2	0.00054	0.00086	0.00554
	A2	0.00477	0.00510	0.00979
	B1_N	0.00651	0.00719	0.02853
	B1_N	0.00441	0.00515	0.02654
sky130_fd_sc_hs__o21bai_2	A1	0.00067	0.00044	0.00502
	A1	0.01065	0.01045	0.01513
	A2	0.00071	0.00149	0.01053
	A2	0.00829	0.00910	0.01820
	B1_N	0.00899	0.00991	0.03070
	B1_N	0.00760	0.00860	0.02947
sky130_fd_sc_hs__o21bai_4	A1	0.00120	0.00083	0.00948
	A1	0.02073	0.02029	0.02918
	A2	0.00106	0.00267	0.02007
	A2	0.01659	0.01813	0.03566
	B1_N	0.01182	0.01350	0.05600
	B1_N	0.01177	0.01359	0.05636

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00710	0.00704	0.00894
	A1	0.00211	0.00202	0.00381
	A2	0.00537	0.00537	0.00741
	A2	0.00109	0.00109	0.00285
	B1_N	0.00541	0.00675	0.03087
	B1_N	0.00760	0.00892	0.03292
sky130_fd_sc_hs__o21bai_2	A1	0.01416	0.01392	0.01782
	A1	0.00413	0.00386	0.00748
	A2	0.00992	0.00994	0.01382
	A2	0.00222	0.00225	0.00588
	B1_N	0.01063	0.01193	0.03618
	B1_N	0.01215	0.01335	0.03727
sky130_fd_sc_hs__o21bai_4	A1	0.02827	0.02779	0.03557
	A1	0.00874	0.00819	0.01565
	A2	0.01980	0.01986	0.02747
	A2	0.00409	0.00412	0.01167
	B1_N	0.02135	0.02365	0.06711
	B1_N	0.02183	0.02410	0.06712

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)	0.00150	0.00151	0.00150
	(A2 * B1_N * Y)	-0.00173	-0.00177	-0.00176
	(A2 * !B1_N * !Y)	0.00173	0.00152	0.00149
	(A2 * !B1_N * !Y)	-0.00153	-0.00176	-0.00177
	(!A2 * B1_N * Y)	0.00143	0.00145	0.00144
	(!A2 * B1_N * Y)	-0.00178	-0.00179	-0.00178
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00306	0.00309	0.00306
	(A2 * B1_N * Y)	-0.00360	-0.00367	-0.00367
	(A2 * !B1_N * !Y)	0.00360	0.00317	0.00310
	(A2 * !B1_N * !Y)	-0.00310	-0.00362	-0.00363
	(!A2 * B1_N * Y)	0.00296	0.00300	0.00297
	(!A2 * B1_N * Y)	-0.00371	-0.00372	-0.00371
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00569	0.00581	0.00573
	(A2 * B1_N * Y)	-0.00692	-0.00715	-0.00712
	(A2 * !B1_N * !Y)	0.00680	0.00587	0.00574
	(A2 * !B1_N * !Y)	-0.00599	-0.00713	-0.00712
	(!A2 * B1_N * Y)	0.00553	0.00558	0.00552
	(!A2 * B1_N * Y)	-0.00725	-0.00725	-0.00724

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)	-0.00149	-0.00149	-0.00149
	(A2 * B1_N * Y)	0.00176	0.00177	0.00176
	(A2 * !B1_N * !Y)	-0.00149	-0.00149	-0.00148
	(A2 * !B1_N * !Y)	0.00177	0.00176	0.00177
	(!A2 * B1_N * Y)	-0.00137	-0.00144	-0.00144
	(!A2 * B1_N * Y)	0.00181	0.00181	0.00179
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00304	-0.00305	-0.00305
	(A2 * B1_N * Y)	0.00365	0.00367	0.00367
	(A2 * !B1_N * !Y)	-0.00308	-0.00309	-0.00308
	(A2 * !B1_N * !Y)	0.00361	0.00363	0.00363
	(!A2 * B1_N * Y)	-0.00284	-0.00295	-0.00297
	(!A2 * B1_N * Y)	0.00375	0.00372	0.00373
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00569	-0.00572	-0.00570
	(A2 * B1_N * Y)	0.00709	0.00715	0.00712
	(A2 * !B1_N * !Y)	-0.00571	-0.00572	-0.00570
	(A2 * !B1_N * !Y)	0.00708	0.00713	0.00712
	(!A2 * B1_N * Y)	-0.00525	-0.00552	-0.00552
	(!A2 * B1_N * Y)	0.00733	0.00725	0.00727

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)	0.00152	0.00153	0.00153
	(A1 * B1_N * Y)	-0.00188	-0.00192	-0.00191
	(A1 * !B1_N * !Y)	0.00173	0.00176	0.00173
	(A1 * !B1_N * !Y)	-0.00097	-0.00098	-0.00097
	(!A1 * B1_N * Y)	0.00147	0.00149	0.00147
	(!A1 * B1_N * Y)	-0.00194	-0.00195	-0.00194
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00278	0.00282	0.00279
	(A1 * B1_N * Y)	-0.00336	-0.00344	-0.00343
	(A1 * !B1_N * !Y)	0.00306	0.00310	0.00305
	(A1 * !B1_N * !Y)	-0.00173	-0.00174	-0.00171
	(!A1 * B1_N * Y)	0.00272	0.00275	0.00272
	(!A1 * B1_N * Y)	-0.00350	-0.00351	-0.00349
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00567	0.00567	0.00568
	(A1 * B1_N * Y)	-0.00697	-0.00714	-0.00712
	(A1 * !B1_N * !Y)	0.00636	0.00650	0.00639
	(A1 * !B1_N * !Y)	-0.00348	-0.00355	-0.00349
	(!A1 * B1_N * Y)	0.00551	0.00555	0.00551
	(!A1 * B1_N * Y)	-0.00727	-0.00729	-0.00726

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)	-0.00152	-0.00153	-0.00152
	(A1 * B1_N * Y)	0.00190	0.00192	0.00191
	(A1 * !B1_N * !Y)	-0.00166	-0.00168	-0.00172
	(A1 * !B1_N * !Y)	0.00102	0.00103	0.00098
	(!A1 * B1_N * Y)	-0.00140	-0.00148	-0.00147
	(!A1 * B1_N * Y)	0.00196	0.00197	0.00195
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00278	-0.00280	-0.00278
	(A1 * B1_N * Y)	0.00343	0.00344	0.00343
	(A1 * !B1_N * !Y)	-0.00290	-0.00293	-0.00303
	(A1 * !B1_N * !Y)	0.00182	0.00184	0.00174
	(!A1 * B1_N * Y)	-0.00259	-0.00271	-0.00272
	(!A1 * B1_N * Y)	0.00351	0.00353	0.00350
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00566	-0.00567	-0.00565
	(A1 * B1_N * Y)	0.00712	0.00714	0.00712
	(A1 * !B1_N * !Y)	-0.00607	-0.00607	-0.00635
	(A1 * !B1_N * !Y)	0.00377	0.00375	0.00356
	(!A1 * B1_N * Y)	-0.00520	-0.00550	-0.00551
	(!A1 * B1_N * Y)	0.00733	0.00736	0.00729

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)	0.00537	0.00605	0.03025
	(!A1 * !A2 * Y)	0.00192	0.00258	0.02680
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00784	0.00844	0.03295
	(!A1 * !A2 * Y)	0.00392	0.00450	0.02902
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00943	0.01051	0.05285
	(!A1 * !A2 * Y)	0.00405	0.00512	0.04746

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)	0.00016	0.00140	0.02584
	(!A1 * !A2 * Y)	0.00363	0.00488	0.02931
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00068	0.00166	0.02611
	(!A1 * !A2 * Y)	0.00465	0.00565	0.03006
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00135	0.00350	0.04645
	(!A1 * !A2 * Y)	0.00684	0.00898	0.05190

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00247	0.00262	0.00214	0.96916
sky130_fd_sc_hs__o21ba_2	0.00257	0.00269	0.00227	1.90528
sky130_fd_sc_hs__o21ba_4	0.00514	0.00489	0.00276	3.52001

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.26280	0.35433
sky130_fd_sc_hs__o21ba_2	0.00000	0.29692	0.40496
sky130_fd_sc_hs__o21ba_4	0.00000	0.44809	0.88629

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)	0.09186	0.63228	6.31375
	A2->X (RR)	0.08213	0.61002	6.31121
	B1_N->X (FR)	0.14433	0.81930	8.22143
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.09069	0.52966	6.19279
	A2->X (RR)	0.08014	0.50941	6.17552
	B1_N->X (FR)	0.14706	0.71603	8.08275
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.09668	0.46709	6.23245
	A2->X (RR)	0.08962	0.44563	6.23146
	B1_N->X (FR)	0.15624	0.68337	8.31534

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.15030	0.59675	4.44067
	A2->X (FF)	0.13694	0.58893	4.39773
	B1_N->X (RF)	0.10121	0.33744	1.96710
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.17977	0.62640	4.71003
	A2->X (FF)	0.16587	0.62405	4.66557
	B1_N->X (RF)	0.11254	0.33185	2.12545
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.17618	0.58614	4.53607
	A2->X (FF)	0.15641	0.57415	4.48062
	B1_N->X (RF)	0.11806	0.30947	1.87326

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00992	0.01018	0.02243
	A1	0.00536	0.00562	0.01805
	A2	0.00839	0.00867	0.02687
	A2	0.00454	0.00482	0.02319
	B1_N	0.00879	0.01024	0.03500
	B1_N	0.01080	0.01227	0.03705
sky130_fd_sc_hs__o21ba_2	A1	0.01227	0.01282	0.02487
	A1	0.00757	0.00815	0.02082
	A2	0.01066	0.01123	0.02902
	A2	0.00670	0.00728	0.02570
	B1_N	0.01090	0.01263	0.03599
	B1_N	0.01313	0.01486	0.03846
sky130_fd_sc_hs__o21ba_4	A1	0.02378	0.02470	0.04871
	A1	0.01446	0.01542	0.04055
	A2	0.02002	0.02102	0.05605
	A2	0.01279	0.01379	0.04996
	B1_N	0.02067	0.02298	0.04698
	B1_N	0.02253	0.02491	0.04886

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00375	0.00411	0.01678
	A1	0.00827	0.00861	0.02084
	A2	0.00374	0.00479	0.02431
	A2	0.00754	0.00857	0.02755
	B1_N	0.00957	0.01016	0.03311
	B1_N	0.00762	0.00820	0.03101
sky130_fd_sc_hs__o21ba_2	A1	0.00606	0.00640	0.01859
	A1	0.01071	0.01104	0.02320
	A2	0.00604	0.00714	0.02628
	A2	0.00994	0.01103	0.03010
	B1_N	0.01224	0.01283	0.03492
	B1_N	0.01002	0.01057	0.03250
sky130_fd_sc_hs__o21ba_4	A1	0.01159	0.01230	0.03605
	A1	0.02084	0.02153	0.04525
	A2	0.01192	0.01433	0.05171
	A2	0.01903	0.02122	0.05814
	B1_N	0.02044	0.02157	0.04487
	B1_N	0.01863	0.01973	0.04280

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)	0.00132	0.00133	0.00131
	(A2 * B1_N * !X)	-0.00162	-0.00163	-0.00164
	(A2 * !B1_N * X)	0.00155	0.00135	0.00131
	(A2 * !B1_N * X)	-0.00140	-0.00163	-0.00165
	(!A2 * B1_N * !X)	0.00128	0.00128	0.00127
	(!A2 * B1_N * !X)	-0.00166	-0.00167	-0.00166
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00150	0.00151	0.00149
	(A2 * B1_N * !X)	-0.00158	-0.00161	-0.00161
	(A2 * !B1_N * X)	0.00174	0.00153	0.00150
	(A2 * !B1_N * X)	-0.00137	-0.00159	-0.00161
	(!A2 * B1_N * !X)	0.00144	0.00145	0.00144
	(!A2 * B1_N * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00291	0.00295	0.00292
	(A2 * B1_N * !X)	-0.00319	-0.00329	-0.00326
	(A2 * !B1_N * X)	0.00338	0.00300	0.00294
	(A2 * !B1_N * X)	-0.00275	-0.00325	-0.00326
	(!A2 * B1_N * !X)	0.00282	0.00284	0.00281
	(!A2 * B1_N * !X)	-0.00332	-0.00333	-0.00331

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)	-0.00131	-0.00130	-0.00131
	(A2 * B1_N * !X)	0.00164	0.00163	0.00164
	(A2 * !B1_N * X)	-0.00130	-0.00130	-0.00130
	(A2 * !B1_N * X)	0.00164	0.00165	0.00165
	(!A2 * B1_N * !X)	-0.00121	-0.00127	-0.00127
	(!A2 * B1_N * !X)	0.00169	0.00168	0.00167
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00149	-0.00149	-0.00148
	(A2 * B1_N * !X)	0.00161	0.00162	0.00161
	(A2 * !B1_N * X)	-0.00149	-0.00149	-0.00148
	(A2 * !B1_N * X)	0.00161	0.00162	0.00161
	(!A2 * B1_N * !X)	-0.00137	-0.00143	-0.00144
	(!A2 * B1_N * !X)	0.00164	0.00163	0.00163
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00291	-0.00292	-0.00291
	(A2 * B1_N * !X)	0.00326	0.00329	0.00326
	(A2 * !B1_N * X)	-0.00291	-0.00293	-0.00291
	(A2 * !B1_N * X)	0.00325	0.00328	0.00327
	(!A2 * B1_N * !X)	-0.00271	-0.00284	-0.00281
	(!A2 * B1_N * !X)	0.00337	0.00336	0.00333

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)	0.00138	0.00139	0.00138
	(A1 * B1_N * !X)	-0.00162	-0.00165	-0.00165
	(A1 * !B1_N * X)	0.00145	0.00147	0.00145
	(A1 * !B1_N * X)	-0.00093	-0.00094	-0.00093
	(!A1 * B1_N * !X)	0.00134	0.00135	0.00134
	(!A1 * B1_N * !X)	-0.00167	-0.00168	-0.00167
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00153	0.00154	0.00153
	(A1 * B1_N * !X)	-0.00160	-0.00163	-0.00163
	(A1 * !B1_N * X)	0.00163	0.00166	0.00163
	(A1 * !B1_N * X)	-0.00087	-0.00088	-0.00087
	(!A1 * B1_N * !X)	0.00148	0.00149	0.00148
	(!A1 * B1_N * !X)	-0.00165	-0.00165	-0.00164
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00247	0.00250	0.00248
	(A1 * B1_N * !X)	-0.00322	-0.00327	-0.00327
	(A1 * !B1_N * X)	0.00277	0.00282	0.00277
	(A1 * !B1_N * X)	-0.00167	-0.00170	-0.00167
	(!A1 * B1_N * !X)	0.00237	0.00240	0.00238
	(!A1 * B1_N * !X)	-0.00333	-0.00334	-0.00334

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)	-0.00137	-0.00138	-0.00137
	(A1 * B1_N * !X)	0.00165	0.00166	0.00165
	(A1 * !B1_N * X)	-0.00140	-0.00141	-0.00144
	(A1 * !B1_N * X)	0.00098	0.00098	0.00094
	(!A1 * B1_N * !X)	-0.00128	-0.00134	-0.00134
	(!A1 * B1_N * !X)	0.00170	0.00169	0.00168
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00151	-0.00153	-0.00152
	(A1 * B1_N * !X)	0.00162	0.00163	0.00163
	(A1 * !B1_N * X)	-0.00158	-0.00159	-0.00162
	(A1 * !B1_N * X)	0.00092	0.00092	0.00088
	(!A1 * B1_N * !X)	-0.00142	-0.00147	-0.00148
	(!A1 * B1_N * !X)	0.00167	0.00165	0.00165
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00246	-0.00248	-0.00247
	(A1 * B1_N * !X)	0.00326	0.00327	0.00327
	(A1 * !B1_N * X)	-0.00264	-0.00266	-0.00275
	(A1 * !B1_N * X)	0.00180	0.00180	0.00171
	(!A1 * B1_N * !X)	-0.00224	-0.00236	-0.00238
	(!A1 * B1_N * !X)	0.00338	0.00334	0.00335

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)	0.00497	0.00568	0.02952
	(!A1 * !A2 * !X)	0.00176	0.00248	0.02631
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00543	0.00608	0.02975
	(!A1 * !A2 * !X)	0.00205	0.00268	0.02637
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00761	0.00812	0.03065
	(!A1 * !A2 * !X)	0.00346	0.00394	0.02648

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)	0.00026	0.00153	0.02551
	(!A1 * !A2 * !X)	0.00348	0.00477	0.02873
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00020	0.00142	0.02530
	(!A1 * !A2 * !X)	0.00360	0.00482	0.02869
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00042	0.00135	0.02386
	(!A1 * !A2 * !X)	0.00461	0.00557	0.02805

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00279	0.00295	0.00290	0.00283	0.00287	0.52974
sky130_fd_sc_hs__o221ai_2	0.00571	0.00523	0.00599	0.00523	0.00528	0.97925
sky130_fd_sc_hs__o221ai_4	0.01087	0.01037	0.01100	0.01035	0.01053	1.84054

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.03329	0.15865
sky130_fd_sc_hs__o221ai_2	0.00000	0.06658	0.31729
sky130_fd_sc_hs__o221ai_4	0.00000	0.13316	0.63458

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)	0.15318	1.04846	10.83340
	A2->Y (FR)	0.13889	1.03716	10.97830
	B1->Y (FR)	0.11473	0.99675	10.70730
	B2->Y (FR)	0.09935	0.98604	10.85720
	C1->Y (FR)	0.03900	0.66408	7.80446
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.13889	0.89226	10.58880
	A2->Y (FR)	0.12050	0.87644	10.72590
	B1->Y (FR)	0.10453	0.84920	10.51590
	B2->Y (FR)	0.08525	0.83548	10.64930
	C1->Y (FR)	0.03149	0.58427	7.61940
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.12962	0.77431	10.38650
	A2->Y (FR)	0.11207	0.76948	10.62530
	B1->Y (FR)	0.10422	0.75394	10.63440
	B2->Y (FR)	0.08410	0.74805	10.84900
	C1->Y (FR)	0.03036	0.53026	7.69397

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.07443	0.48127	4.71345
	A2->Y (RF)	0.06508	0.46717	4.67868
	B1->Y (RF)	0.06687	0.52867	5.50958
	B2->Y (RF)	0.05597	0.50761	5.39300
	C1->Y (RF)	0.05588	0.56244	6.07593
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.05884	0.39363	4.60631
	A2->Y (RF)	0.05054	0.38435	4.64982
	B1->Y (RF)	0.05089	0.44094	5.41754
	B2->Y (RF)	0.04286	0.44426	5.63973
	C1->Y (RF)	0.02824	0.46703	6.16189
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.06454	0.35351	4.79162
	A2->Y (RF)	0.05315	0.33860	4.81256
	B1->Y (RF)	0.05731	0.41215	5.78901
	B2->Y (RF)	0.04547	0.39728	5.84837
	C1->Y (RF)	0.03075	0.43300	6.61372

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00225	0.00207	0.00417
	A1	0.01102	0.01089	0.01293
	A2	0.00234	0.00250	0.00687
	A2	0.01016	0.01034	0.01444
	B1	0.00076	0.00056	0.00272
	B1	0.00832	0.00813	0.01022
	B2	0.00076	0.00101	0.00541
	B2	0.00725	0.00748	0.01159
	C1	-0.00047	0.00003	0.00534
	C1	0.00599	0.00645	0.01124
sky130_fd_sc_hs__o221ai_2	A1	0.00362	0.00324	0.00750
	A1	0.02059	0.02024	0.02449
	A2	0.00367	0.00418	0.01250
	A2	0.01834	0.01858	0.02704
	B1	0.00087	0.00047	0.00481
	B1	0.01568	0.01526	0.01957
	B2	0.00102	0.00166	0.00981
	B2	0.01342	0.01405	0.02201
	C1	-0.00166	-0.00054	0.01010
	C1	0.01047	0.01155	0.02147

sky130_fd_sc_hs__o221ai_4	**A1**	0.00607	0.00535	0.01318
	A1	0.03962	0.03898	0.04665
	A2	0.00624	0.00738	0.02200
	A2	0.03543	0.03658	0.05097
	B1	0.00130	0.00052	0.01046
	B1	0.03035	0.02952	0.03936
	B2	0.00129	0.00261	0.01980
	B2	0.02610	0.02727	0.04397
	C1	-0.00310	-0.00068	0.02701
	C1	0.02105	0.02402	0.04899

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01198	0.01186	0.01372
	A1	0.00283	0.00270	0.00427
	A2	0.01009	0.01004	0.01195
	A2	0.00185	0.00175	0.00331
	B1	0.01041	0.01028	0.01184
	B1	0.00286	0.00274	0.00427
	B2	0.00856	0.00848	0.01040
	B2	0.00095	0.00089	0.00257
	C1	0.00927	0.00925	0.01237
	C1	0.00076	0.00076	0.00319

sky130_fd_sc_hs__o221ai_2	**A1**	0.02264	0.02235	0.02569
	A1	0.00497	0.00463	0.00785
	A2	0.01852	0.01844	0.02210
	A2	0.00309	0.00293	0.00616
	B1	0.01985	0.01960	0.02311
	B1	0.00505	0.00473	0.00789
	B2	0.01553	0.01542	0.01875
	B2	0.00086	0.00079	0.00402
	C1	0.01693	0.01697	0.02143
	C1	0.00053	0.00070	0.00558
sky130_fd_sc_hs__o221ai_4	**A1**	0.04479	0.04418	0.05132
	A1	0.00991	0.00922	0.01608
	A2	0.03674	0.03633	0.04395
	A2	0.00609	0.00562	0.01258
	B1	0.03903	0.03850	0.04644
	B1	0.01000	0.00940	0.01715
	B2	0.03116	0.03091	0.03972
	B2	0.00176	0.00158	0.00977
	C1	0.03351	0.03375	0.04664
	C1	0.00097	0.00144	0.01524

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)**	0.00181	0.00162	0.00159
	(A2 * B2 * C1 * !Y)	-0.00156	-0.00179	-0.00180
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00159	0.00160	0.00159
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00176	-0.00180	-0.00179
	(A2 * B1 * !B2 * C1 * !Y)	0.00181	0.00162	0.00159
	(A2 * B1 * !B2 * C1 * !Y)	-0.00156	-0.00179	-0.00180
	(A2 * !B1 * !B2 * Y)	0.00159	0.00161	0.00159
	(A2 * !B1 * !B2 * Y)	-0.00176	-0.00180	-0.00179
	(!A2 * B2 * !C1 * Y)	0.00147	0.00148	0.00147
	(!A2 * B2 * !C1 * Y)	-0.00181	-0.00182	-0.00181
	(!A2 * B1 * !B2 * !C1 * Y)	0.00148	0.00148	0.00148
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00182	-0.00181	-0.00182
	(!A2 * !B1 * !B2 * C1 * Y)	0.00150	0.00151	0.00149
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00182	-0.00182	-0.00181
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00150	0.00150	0.00149
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00182	-0.00182	-0.00181

	(A2 * B2 * C1 * !Y)	0.00355	0.00311	0.00304
	(A2 * B2 * C1 * !Y)	-0.00303	-0.00356	-0.00358
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00293	0.00296	0.00293
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00362	-0.00369	-0.00368
	(A2 * B1 * !B2 * C1 * !Y)	0.00355	0.00311	0.00304
	(A2 * B1 * !B2 * C1 * !Y)	-0.00303	-0.00356	-0.00358
	(A2 * !B1 * !B2 * Y)	0.00293	0.00297	0.00293
sky130_fd_sc_hs__o221ai_2	**(A2 * !B1 * !B2 * Y)**	-0.00361	-0.00369	-0.00368
	(!A2 * B2 * !C1 * Y)	0.00272	0.00273	0.00271
	(!A2 * B2 * !C1 * Y)	-0.00373	-0.00375	-0.00373
	(!A2 * B1 * !B2 * !C1 * Y)	0.00275	0.00276	0.00274
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00373	-0.00375	-0.00373
	(!A2 * !B1 * !B2 * C1 * Y)	0.00277	0.00280	0.00278
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00372	-0.00374	-0.00373
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00277	0.00280	0.00278
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00372	-0.00374	-0.00373

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00702	0.00612	0.00598
	(A2 * B2 * C1 * !Y)	-0.00595	-0.00703	-0.00705
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00593	0.00600	0.00593
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00696	-0.00710	-0.00708
	(A2 * B1 * !B2 * C1 * !Y)	0.00702	0.00612	0.00598
	(A2 * B1 * !B2 * C1 * !Y)	-0.00595	-0.00703	-0.00705
	(A2 * !B1 * !B2 * Y)	0.00588	0.00600	0.00593
	(A2 * !B1 * !B2 * Y)	-0.00691	-0.00709	-0.00708
	(!A2 * B2 * !C1 * Y)	0.00544	0.00552	0.00548
	(!A2 * B2 * !C1 * Y)	-0.00716	-0.00722	-0.00719
	(!A2 * B1 * !B2 * !C1 * Y)	0.00550	0.00558	0.00553
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00717	-0.00723	-0.00719
	(!A2 * !B1 * !B2 * C1 * Y)	0.00560	0.00566	0.00561
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00719	-0.00723	-0.00719
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00560	0.00566	0.00561
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00719	-0.00723	-0.00720

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)**	-0.00158	-0.00158	-0.00158
	(A2 * B2 * C1 * !Y)	0.00179	0.00180	0.00180
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00158	-0.00159	-0.00158
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00179	0.00181	0.00179
	(A2 * B1 * !B2 * C1 * !Y)	-0.00158	-0.00158	-0.00158
	(A2 * B1 * !B2 * C1 * !Y)	0.00180	0.00180	0.00180
	(A2 * !B1 * !B2 * Y)	-0.00159	-0.00159	-0.00158
	(A2 * !B1 * !B2 * Y)	0.00180	0.00181	0.00179
	(!A2 * B2 * !C1 * Y)	-0.00135	-0.00148	-0.00147
	(!A2 * B2 * !C1 * Y)	0.00181	0.00184	0.00182
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00137	-0.00148	-0.00148
	(!A2 * B1 * !B2 * !C1 * Y)	0.00182	0.00184	0.00182
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00141	-0.00151	-0.00149
	(!A2 * !B1 * !B2 * C1 * Y)	0.00182	0.00184	0.00182
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00142	-0.00150	-0.00149
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00182	0.00184	0.00182

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00302	-0.00303	-0.00302
	(A2 * B2 * C1 * !Y)	0.00355	0.00357	0.00358
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00291	-0.00293	-0.00292
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00365	0.00369	0.00368
	(A2 * B1 * !B2 * C1 * !Y)	-0.00302	-0.00303	-0.00302
	(A2 * B1 * !B2 * C1 * !Y)	0.00355	0.00357	0.00358
	(A2 * !B1 * !B2 * Y)	-0.00291	-0.00293	-0.00292
	(A2 * !B1 * !B2 * Y)	0.00366	0.00369	0.00368
	(!A2 * B2 * !C1 * Y)	-0.00246	-0.00273	-0.00271
	(!A2 * B2 * !C1 * Y)	0.00373	0.00378	0.00374
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00251	-0.00276	-0.00274
	(!A2 * B1 * !B2 * !C1 * Y)	0.00373	0.00378	0.00374
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00260	-0.00279	-0.00278
	(!A2 * !B1 * !B2 * C1 * Y)	0.00372	0.00377	0.00374
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00261	-0.00279	-0.00278
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00372	0.00377	0.00374

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00595	-0.00596	-0.00594
	(A2 * B2 * C1 * !Y)	0.00701	0.00704	0.00705
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00589	-0.00592	-0.00591
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00704	0.00710	0.00708
	(A2 * B1 * !B2 * C1 * !Y)	-0.00595	-0.00596	-0.00594
	(A2 * B1 * !B2 * C1 * !Y)	0.00700	0.00704	0.00705
	(A2 * !B1 * !B2 * Y)	-0.00588	-0.00592	-0.00591
	(A2 * !B1 * !B2 * Y)	0.00705	0.00709	0.00708
	(!A2 * B2 * !C1 * Y)	-0.00494	-0.00550	-0.00548
	(!A2 * B2 * !C1 * Y)	0.00718	0.00730	0.00722
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00508	-0.00556	-0.00553
	(!A2 * B1 * !B2 * !C1 * Y)	0.00724	0.00730	0.00722
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00525	-0.00563	-0.00561
	(!A2 * !B1 * !B2 * C1 * Y)	0.00719	0.00729	0.00722
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00526	-0.00563	-0.00561
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00719	0.00729	0.00722

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)**	0.00166	0.00169	0.00167
	(A1 * B2 * C1 * !Y)	-0.00094	-0.00096	-0.00095
	(A1 * B2 * !C1 * Y)	0.00144	0.00144	0.00144
	(A1 * B2 * !C1 * Y)	-0.00188	-0.00192	-0.00191
	(A1 * B1 * !B2 * C1 * !Y)	0.00166	0.00170	0.00167
	(A1 * B1 * !B2 * C1 * !Y)	-0.00095	-0.00096	-0.00095
	(A1 * B1 * !B2 * !C1 * Y)	0.00144	0.00145	0.00144
	(A1 * B1 * !B2 * !C1 * Y)	-0.00188	-0.00192	-0.00191
	(A1 * !B1 * !B2 * C1 * Y)	0.00144	0.00145	0.00144
	(A1 * !B1 * !B2 * C1 * Y)	-0.00188	-0.00192	-0.00191
	(A1 * !B1 * !B2 * !C1 * Y)	0.00144	0.00146	0.00144
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00188	-0.00192	-0.00191
	(!A1 * B2 * !C1 * Y)	0.00132	0.00133	0.00132
	(!A1 * B2 * !C1 * Y)	-0.00193	-0.00194	-0.00194
	(!A1 * B1 * !B2 * !C1 * Y)	0.00134	0.00135	0.00134
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00193	-0.00194	-0.00194
	(!A1 * !B1 * !B2 * C1 * Y)	0.00136	0.00136	0.00136
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00194	-0.00194	-0.00194
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00136	0.00137	0.00136
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00194	-0.00195	-0.00194

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00303	0.00308	0.00303
	(A1 * B2 * C1 * !Y)	-0.00171	-0.00173	-0.00170
	(A1 * B2 * !C1 * Y)	0.00277	0.00280	0.00278
	(A1 * B2 * !C1 * Y)	-0.00336	-0.00343	-0.00342
	(A1 * B1 * !B2 * C1 * !Y)	0.00303	0.00308	0.00304
	(A1 * B1 * !B2 * C1 * !Y)	-0.00171	-0.00173	-0.00170
	(A1 * B1 * !B2 * !C1 * Y)	0.00277	0.00281	0.00278
	(A1 * B1 * !B2 * !C1 * Y)	-0.00336	-0.00343	-0.00342
	(A1 * !B1 * !B2 * C1 * Y)	0.00277	0.00278	0.00278
	(A1 * !B1 * !B2 * C1 * Y)	-0.00336	-0.00343	-0.00341
	(A1 * !B1 * !B2 * !C1 * Y)	0.00277	0.00279	0.00278
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00336	-0.00344	-0.00342
	(!A1 * B2 * !C1 * Y)	0.00258	0.00259	0.00259
	(!A1 * B2 * !C1 * Y)	-0.00348	-0.00349	-0.00348
	(!A1 * B1 * !B2 * !C1 * Y)	0.00262	0.00263	0.00261
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00348	-0.00349	-0.00348
	(!A1 * !B1 * !B2 * C1 * Y)	0.00266	0.00266	0.00265
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00349	-0.00349	-0.00348
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00266	0.00268	0.00265
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00349	-0.00350	-0.00349

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00615	0.00623	0.00613
	(A1 * B2 * C1 * !Y)	-0.00344	-0.00346	-0.00340
	(A1 * B2 * !C1 * Y)	0.00540	0.00547	0.00542
	(A1 * B2 * !C1 * Y)	-0.00690	-0.00707	-0.00703
	(A1 * B1 * !B2 * C1 * !Y)	0.00616	0.00623	0.00613
	(A1 * B1 * !B2 * C1 * !Y)	-0.00343	-0.00346	-0.00340
	(A1 * B1 * !B2 * !C1 * Y)	0.00542	0.00548	0.00542
	(A1 * B1 * !B2 * !C1 * Y)	-0.00692	-0.00708	-0.00703
	(A1 * !B1 * !B2 * C1 * Y)	0.00541	0.00543	0.00542
	(A1 * !B1 * !B2 * C1 * Y)	-0.00690	-0.00703	-0.00702
	(A1 * !B1 * !B2 * !C1 * Y)	0.00542	0.00545	0.00542
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00692	-0.00709	-0.00704
	(!A1 * B2 * !C1 * Y)	0.00503	0.00510	0.00504
	(!A1 * B2 * !C1 * Y)	-0.00716	-0.00720	-0.00716
	(!A1 * B1 * !B2 * !C1 * Y)	0.00511	0.00512	0.00509
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00716	-0.00718	-0.00716
	(!A1 * !B1 * !B2 * C1 * Y)	0.00518	0.00522	0.00516
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00718	-0.00720	-0.00716
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00513	0.00520	0.00516
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00713	-0.00719	-0.00716

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)**	-0.00160	-0.00161	-0.00166
	(A1 * B2 * C1 * !Y)	0.00101	0.00101	0.00096
	(A1 * B2 * !C1 * Y)	-0.00144	-0.00144	-0.00144
	(A1 * B2 * !C1 * Y)	0.00191	0.00192	0.00191
	(A1 * B1 * !B2 * C1 * !Y)	-0.00160	-0.00161	-0.00166
	(A1 * B1 * !B2 * C1 * !Y)	0.00101	0.00101	0.00096
	(A1 * B1 * !B2 * !C1 * Y)	-0.00143	-0.00145	-0.00144
	(A1 * B1 * !B2 * !C1 * Y)	0.00190	0.00192	0.00191
	(A1 * !B1 * !B2 * C1 * Y)	-0.00144	-0.00145	-0.00144
	(A1 * !B1 * !B2 * C1 * Y)	0.00191	0.00192	0.00191
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00144	-0.00144	-0.00144
	(A1 * !B1 * !B2 * !C1 * Y)	0.00191	0.00192	0.00191
	(!A1 * B2 * !C1 * Y)	-0.00122	-0.00133	-0.00132
	(!A1 * B2 * !C1 * Y)	0.00193	0.00196	0.00194
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00124	-0.00135	-0.00134
	(!A1 * B1 * !B2 * !C1 * Y)	0.00193	0.00196	0.00194
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00129	-0.00136	-0.00136
	(!A1 * !B1 * !B2 * C1 * Y)	0.00194	0.00196	0.00194
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00129	-0.00137	-0.00136
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00194	0.00196	0.00194

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00290	-0.00292	-0.00302
	(A1 * B2 * C1 * !Y)	0.00183	0.00183	0.00174
	(A1 * B2 * !C1 * Y)	-0.00276	-0.00278	-0.00277
	(A1 * B2 * !C1 * Y)	0.00340	0.00343	0.00342
	(A1 * B1 * !B2 * C1 * !Y)	-0.00290	-0.00292	-0.00302
	(A1 * B1 * !B2 * C1 * !Y)	0.00183	0.00183	0.00174
	(A1 * B1 * !B2 * !C1 * Y)	-0.00277	-0.00278	-0.00277
	(A1 * B1 * !B2 * !C1 * Y)	0.00341	0.00343	0.00342
	(A1 * !B1 * !B2 * C1 * Y)	-0.00277	-0.00278	-0.00277
	(A1 * !B1 * !B2 * C1 * Y)	0.00341	0.00343	0.00341
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00277	-0.00278	-0.00277
	(A1 * !B1 * !B2 * !C1 * Y)	0.00342	0.00344	0.00342
	(!A1 * B2 * !C1 * Y)	-0.00235	-0.00259	-0.00259
	(!A1 * B2 * !C1 * Y)	0.00348	0.00353	0.00349
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00239	-0.00262	-0.00261
	(!A1 * B1 * !B2 * !C1 * Y)	0.00348	0.00353	0.00349
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00249	-0.00265	-0.00265
	(!A1 * !B1 * !B2 * C1 * Y)	0.00350	0.00352	0.00349
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00249	-0.00265	-0.00265
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00350	0.00352	0.00349

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00586	-0.00590	-0.00610
	(A1 * B2 * C1 * !Y)	0.00366	0.00366	0.00347
	(A1 * B2 * !C1 * Y)	-0.00540	-0.00543	-0.00541
	(A1 * B2 * !C1 * Y)	0.00700	0.00707	0.00703
	(A1 * B1 * !B2 * C1 * !Y)	-0.00586	-0.00590	-0.00610
	(A1 * B1 * !B2 * C1 * !Y)	0.00366	0.00367	0.00347
	(A1 * B1 * !B2 * !C1 * Y)	-0.00539	-0.00543	-0.00541
	(A1 * B1 * !B2 * !C1 * Y)	0.00700	0.00708	0.00703
	(A1 * !B1 * !B2 * C1 * Y)	-0.00541	-0.00542	-0.00541
	(A1 * !B1 * !B2 * C1 * Y)	0.00702	0.00703	0.00702
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00541	-0.00544	-0.00541
	(A1 * !B1 * !B2 * !C1 * Y)	0.00703	0.00709	0.00704
	(!A1 * B2 * !C1 * Y)	-0.00458	-0.00509	-0.00504
	(!A1 * B2 * !C1 * Y)	0.00716	0.00726	0.00718
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00467	-0.00512	-0.00509
	(!A1 * B1 * !B2 * !C1 * Y)	0.00716	0.00725	0.00718
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00485	-0.00517	-0.00516
	(!A1 * !B1 * !B2 * C1 * Y)	0.00719	0.00724	0.00718
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00486	-0.00517	-0.00516
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00718	0.00724	0.00718

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)**	0.00189	0.00169	0.00166
	(A2 * B2 * C1 * !Y)	-0.00151	-0.00174	-0.00175
	(A2 * !B2 * !C1 * Y)	0.00145	0.00146	0.00145
	(A2 * !B2 * !C1 * Y)	-0.00193	-0.00193	-0.00192
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00151	0.00153	0.00151
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00187	-0.00190	-0.00190
	(A1 * !A2 * B2 * C1 * !Y)	0.00189	0.00169	0.00166
	(A1 * !A2 * B2 * C1 * !Y)	-0.00151	-0.00174	-0.00175
	(A1 * !A2 * !B2 * !C1 * Y)	0.00145	0.00145	0.00145
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00193	-0.00192	-0.00192
	(!A1 * !A2 * B2 * C1 * Y)	0.00069	0.00069	0.00068
	(!A1 * !A2 * B2 * C1 * Y)	-0.00188	-0.00192	-0.00191
	(!A1 * !A2 * B2 * !C1 * Y)	0.00087	0.00088	0.00087
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00188	-0.00192	-0.00190
	(!A1 * !A2 * !B2 * C1 * Y)	0.00070	0.00071	0.00072
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00191	-0.00192	-0.00191
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00091	0.00092	0.00091
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00193	-0.00194	-0.00193

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00373	0.00331	0.00325
	(A2 * B2 * C1 * !Y)	-0.00296	-0.00346	-0.00347
	(A2 * !B2 * !C1 * Y)	0.00279	0.00282	0.00280
	(A2 * !B2 * !C1 * Y)	-0.00380	-0.00383	-0.00381
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00295	0.00298	0.00295
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00371	-0.00379	-0.00377
	(A1 * !A2 * B2 * C1 * !Y)	0.00373	0.00331	0.00325
	(A1 * !A2 * B2 * C1 * !Y)	-0.00296	-0.00346	-0.00347
	(A1 * !A2 * !B2 * !C1 * Y)	0.00277	0.00280	0.00278
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00381	-0.00382	-0.00381
	(!A1 * !A2 * B2 * C1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !A2 * B2 * C1 * Y)	-0.00371	-0.00380	-0.00379
	(!A1 * !A2 * B2 * !C1 * Y)	0.00160	0.00161	0.00159
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00371	-0.00380	-0.00377
	(!A1 * !A2 * !B2 * C1 * Y)	0.00130	0.00131	0.00131
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00380	-0.00382	-0.00378
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00168	0.00169	0.00168
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00381	-0.00383	-0.00382

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00711	0.00621	0.00610
	(A2 * B2 * C1 * !Y)	-0.00582	-0.00691	-0.00690
	(A2 * !B2 * !C1 * Y)	0.00537	0.00545	0.00539
	(A2 * !B2 * !C1 * Y)	-0.00735	-0.00741	-0.00737
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00571	0.00578	0.00571
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00715	-0.00732	-0.00727
	(A1 * !A2 * B2 * C1 * !Y)	0.00711	0.00621	0.00610
	(A1 * !A2 * B2 * C1 * !Y)	-0.00581	-0.00691	-0.00691
	(A1 * !A2 * !B2 * !C1 * Y)	0.00539	0.00545	0.00540
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00737	-0.00741	-0.00737
	(!A1 * !A2 * B2 * C1 * Y)	0.00233	0.00235	0.00232
	(!A1 * !A2 * B2 * C1 * Y)	-0.00716	-0.00735	-0.00731
	(!A1 * !A2 * B2 * !C1 * Y)	0.00298	0.00300	0.00297
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00716	-0.00736	-0.00728
	(!A1 * !A2 * !B2 * C1 * Y)	0.00245	0.00246	0.00245
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00737	-0.00739	-0.00732
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00316	0.00317	0.00314
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00740	-0.00744	-0.00739

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)**	-0.00165	-0.00166	-0.00165
	(A2 * B2 * C1 * !Y)	0.00175	0.00176	0.00175
	(A2 * !B2 * !C1 * Y)	-0.00137	-0.00146	-0.00145
	(A2 * !B2 * !C1 * Y)	0.00196	0.00195	0.00193
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00151	-0.00151	-0.00150
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00190	0.00190	0.00190
	(A1 * !A2 * B2 * C1 * !Y)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * B2 * C1 * !Y)	0.00175	0.00176	0.00175
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00134	-0.00145	-0.00145
	(A1 * !A2 * !B2 * !C1 * Y)	0.00196	0.00195	0.00193
	(!A1 * !A2 * B2 * C1 * Y)	-0.00066	-0.00067	-0.00068
	(!A1 * !A2 * B2 * C1 * Y)	0.00194	0.00195	0.00191
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00087	-0.00088	-0.00087
	(!A1 * !A2 * B2 * !C1 * Y)	0.00191	0.00192	0.00190
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00067	-0.00068	-0.00069
	(!A1 * !A2 * !B2 * C1 * Y)	0.00198	0.00200	0.00194
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00091	-0.00092	-0.00091
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00196	0.00199	0.00194

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00324	-0.00324	-0.00323
	(A2 * B2 * C1 * !Y)	0.00347	0.00348	0.00347
	(A2 * !B2 * !C1 * Y)	-0.00256	-0.00282	-0.00280
	(A2 * !B2 * !C1 * Y)	0.00387	0.00386	0.00382
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00294	-0.00295	-0.00294
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00375	0.00379	0.00377
	(A1 * !A2 * B2 * C1 * !Y)	-0.00324	-0.00325	-0.00323
	(A1 * !A2 * B2 * C1 * !Y)	0.00347	0.00349	0.00347
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00256	-0.00280	-0.00278
	(A1 * !A2 * !B2 * !C1 * Y)	0.00392	0.00386	0.00382
	(!A1 * !A2 * B2 * C1 * Y)	-0.00119	-0.00120	-0.00123
	(!A1 * !A2 * B2 * C1 * Y)	0.00387	0.00389	0.00379
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00160	-0.00161	-0.00159
	(!A1 * !A2 * B2 * !C1 * Y)	0.00379	0.00383	0.00377
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00119	-0.00122	-0.00125
	(!A1 * !A2 * !B2 * C1 * Y)	0.00392	0.00400	0.00385
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00168	-0.00169	-0.00168
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00396	0.00398	0.00383

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00607	-0.00611	-0.00607
	(A2 * B2 * C1 * !Y)	0.00686	0.00695	0.00690
	(A2 * !B2 * !C1 * Y)	-0.00491	-0.00545	-0.00539
	(A2 * !B2 * !C1 * Y)	0.00759	0.00745	0.00739
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00569	-0.00572	-0.00570
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00723	0.00732	0.00727
	(A1 * !A2 * B2 * C1 * !Y)	-0.00606	-0.00611	-0.00606
	(A1 * !A2 * B2 * C1 * !Y)	0.00686	0.00696	0.00691
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00483	-0.00545	-0.00540
	(A1 * !A2 * !B2 * !C1 * Y)	0.00763	0.00745	0.00739
	(!A1 * !A2 * B2 * C1 * Y)	-0.00221	-0.00224	-0.00230
	(!A1 * !A2 * B2 * C1 * Y)	0.00745	0.00752	0.00731
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00298	-0.00300	-0.00297
	(!A1 * !A2 * B2 * !C1 * Y)	0.00732	0.00738	0.00728
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00227	-0.00226	-0.00233
	(!A1 * !A2 * !B2 * C1 * Y)	0.00762	0.00762	0.00744
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00316	-0.00317	-0.00314
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00767	0.00765	0.00743

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)**	0.00162	0.00166	0.00163
	(A2 * B1 * C1 * !Y)	-0.00086	-0.00087	-0.00086
	(A2 * B1 * !C1 * Y)	0.00143	0.00144	0.00144
	(A2 * B1 * !C1 * Y)	-0.00176	-0.00179	-0.00178
	(A2 * !B1 * !C1 * Y)	0.00138	0.00139	0.00138
	(A2 * !B1 * !C1 * Y)	-0.00181	-0.00182	-0.00181
	(A1 * !A2 * B1 * C1 * !Y)	0.00162	0.00166	0.00163
	(A1 * !A2 * B1 * C1 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * !A2 * B1 * !C1 * Y)	0.00143	0.00144	0.00144
	(A1 * !A2 * B1 * !C1 * Y)	-0.00176	-0.00179	-0.00178
	(A1 * !A2 * !B1 * !C1 * Y)	0.00138	0.00139	0.00138
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00182	-0.00182	-0.00181
	(!A1 * !A2 * B1 * C1 * Y)	0.00062	0.00063	0.00063
	(!A1 * !A2 * B1 * C1 * Y)	-0.00176	-0.00180	-0.00179
	(!A1 * !A2 * B1 * !C1 * Y)	0.00081	0.00082	0.00081
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00176	-0.00180	-0.00179
	(!A1 * !A2 * !B1 * C1 * Y)	0.00065	0.00066	0.00066
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00181	-0.00182	-0.00180
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00085	0.00086	0.00086
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00181	-0.00183	-0.00182

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00301	0.00307	0.00302
	(A2 * B1 * C1 * !Y)	-0.00170	-0.00173	-0.00170
	(A2 * B1 * !C1 * Y)	0.00274	0.00277	0.00275
	(A2 * B1 * !C1 * Y)	-0.00337	-0.00345	-0.00343
	(A2 * !B1 * !C1 * Y)	0.00264	0.00266	0.00264
	(A2 * !B1 * !C1 * Y)	-0.00349	-0.00350	-0.00348
	(A1 * !A2 * B1 * C1 * !Y)	0.00301	0.00307	0.00302
	(A1 * !A2 * B1 * C1 * !Y)	-0.00170	-0.00173	-0.00170
	(A1 * !A2 * B1 * !C1 * Y)	0.00274	0.00278	0.00275
	(A1 * !A2 * B1 * !C1 * Y)	-0.00337	-0.00344	-0.00343
	(A1 * !A2 * !B1 * !C1 * Y)	0.00264	0.00266	0.00264
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00349	-0.00350	-0.00348
	(!A1 * !A2 * B1 * C1 * Y)	0.00112	0.00112	0.00112
	(!A1 * !A2 * B1 * C1 * Y)	-0.00336	-0.00344	-0.00344
	(!A1 * !A2 * B1 * !C1 * Y)	0.00146	0.00147	0.00146
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00337	-0.00345	-0.00343
	(!A1 * !A2 * !B1 * C1 * Y)	0.00117	0.00119	0.00119
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00346	-0.00349	-0.00345
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00155	0.00157	0.00155
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00348	-0.00351	-0.00349

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00614	0.00625	0.00615
	(A2 * B1 * C1 * !Y)	-0.00339	-0.00345	-0.00339
	(A2 * B1 * !C1 * Y)	0.00557	0.00561	0.00558
	(A2 * B1 * !C1 * Y)	-0.00678	-0.00694	-0.00689
	(A2 * !B1 * !C1 * Y)	0.00527	0.00536	0.00531
	(A2 * !B1 * !C1 * Y)	-0.00699	-0.00702	-0.00701
	(A1 * !A2 * B1 * C1 * !Y)	0.00614	0.00613	0.00615
	(A1 * !A2 * B1 * C1 * !Y)	-0.00339	-0.00338	-0.00339
	(A1 * !A2 * B1 * !C1 * Y)	0.00556	0.00563	0.00558
	(A1 * !A2 * B1 * !C1 * Y)	-0.00677	-0.00692	-0.00689
	(A1 * !A2 * !B1 * !C1 * Y)	0.00528	0.00536	0.00531
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00699	-0.00705	-0.00701
	(!A1 * !A2 * B1 * C1 * Y)	0.00224	0.00224	0.00224
	(!A1 * !A2 * B1 * C1 * Y)	-0.00678	-0.00692	-0.00692
	(!A1 * !A2 * B1 * !C1 * Y)	0.00290	0.00289	0.00289
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00681	-0.00695	-0.00691
	(!A1 * !A2 * !B1 * C1 * Y)	0.00235	0.00238	0.00237
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00699	-0.00705	-0.00696
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00307	0.00308	0.00305
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00705	-0.00708	-0.00704

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)**	-0.00158	-0.00159	-0.00162
	(A2 * B1 * C1 * !Y)	0.00091	0.00091	0.00087
	(A2 * B1 * !C1 * Y)	-0.00143	-0.00144	-0.00143
	(A2 * B1 * !C1 * Y)	0.00178	0.00179	0.00178
	(A2 * !B1 * !C1 * Y)	-0.00131	-0.00139	-0.00138
	(A2 * !B1 * !C1 * Y)	0.00183	0.00183	0.00182
	(A1 * !A2 * B1 * C1 * !Y)	-0.00157	-0.00158	-0.00162
	(A1 * !A2 * B1 * C1 * !Y)	0.00091	0.00091	0.00087
	(A1 * !A2 * B1 * !C1 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * B1 * !C1 * Y)	0.00178	0.00179	0.00178
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00128	-0.00139	-0.00138
	(A1 * !A2 * !B1 * !C1 * Y)	0.00184	0.00183	0.00182
	(!A1 * !A2 * B1 * C1 * Y)	-0.00061	-0.00061	-0.00062
	(!A1 * !A2 * B1 * C1 * Y)	0.00182	0.00183	0.00179
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * B1 * !C1 * Y)	0.00179	0.00180	0.00179
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00062	-0.00063	-0.00063
	(!A1 * !A2 * !B1 * C1 * Y)	0.00186	0.00188	0.00183
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00085	-0.00086	-0.00086
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00185	0.00187	0.00182

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00289	-0.00289	-0.00300
	(A2 * B1 * C1 * !Y)	0.00182	0.00182	0.00173
	(A2 * B1 * !C1 * Y)	-0.00274	-0.00276	-0.00275
	(A2 * B1 * !C1 * Y)	0.00341	0.00345	0.00343
	(A2 * !B1 * !C1 * Y)	-0.00240	-0.00264	-0.00264
	(A2 * !B1 * !C1 * Y)	0.00355	0.00353	0.00349
	(A1 * !A2 * B1 * C1 * !Y)	-0.00289	-0.00290	-0.00300
	(A1 * !A2 * B1 * C1 * !Y)	0.00182	0.00182	0.00173
	(A1 * !A2 * B1 * !C1 * Y)	-0.00274	-0.00275	-0.00275
	(A1 * !A2 * B1 * !C1 * Y)	0.00341	0.00344	0.00343
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00238	-0.00265	-0.00264
	(A1 * !A2 * !B1 * !C1 * Y)	0.00357	0.00351	0.00349
	(!A1 * !A2 * B1 * C1 * Y)	-0.00108	-0.00108	-0.00111
	(!A1 * !A2 * B1 * C1 * Y)	0.00350	0.00349	0.00344
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00146	-0.00147	-0.00146
	(!A1 * !A2 * B1 * !C1 * Y)	0.00344	0.00346	0.00343
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00109	-0.00111	-0.00113
	(!A1 * !A2 * !B1 * C1 * Y)	0.00357	0.00363	0.00351
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00155	-0.00157	-0.00155
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00357	0.00361	0.00350

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00589	-0.00591	-0.00612
	(A2 * B1 * C1 * !Y)	0.00364	0.00363	0.00346
	(A2 * B1 * !C1 * Y)	-0.00555	-0.00559	-0.00557
	(A2 * B1 * !C1 * Y)	0.00686	0.00694	0.00689
	(A2 * !B1 * !C1 * Y)	-0.00481	-0.00531	-0.00531
	(A2 * !B1 * !C1 * Y)	0.00723	0.00702	0.00704
	(A1 * !A2 * B1 * C1 * !Y)	-0.00589	-0.00591	-0.00612
	(A1 * !A2 * B1 * C1 * !Y)	0.00364	0.00363	0.00346
	(A1 * !A2 * B1 * !C1 * Y)	-0.00556	-0.00558	-0.00557
	(A1 * !A2 * B1 * !C1 * Y)	0.00691	0.00692	0.00689
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00474	-0.00536	-0.00531
	(A1 * !A2 * !B1 * !C1 * Y)	0.00728	0.00708	0.00703
	(!A1 * !A2 * B1 * C1 * Y)	-0.00216	-0.00217	-0.00222
	(!A1 * !A2 * B1 * C1 * Y)	0.00709	0.00711	0.00692
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00290	-0.00289	-0.00289
	(!A1 * !A2 * B1 * !C1 * Y)	0.00699	0.00701	0.00691
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00217	-0.00222	-0.00225
	(!A1 * !A2 * !B1 * C1 * Y)	0.00721	0.00734	0.00709
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00307	-0.00308	-0.00305
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00729	0.00735	0.00707

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)	0.00061	0.00061	0.00057
	(A2 * !B1 * !B2 * Y)	-0.00218	-0.00219	-0.00224
	(!A2 * !B1 * !B2 * Y)	0.00060	0.00061	0.00057
	(!A2 * !B1 * !B2 * Y)	-0.00217	-0.00219	-0.00224
	(!A1 * !A2 * B2 * Y)	0.00064	0.00064	0.00055
	(!A1 * !A2 * B2 * Y)	-0.00204	-0.00205	-0.00222
	(!A1 * !A2 * B1 * !B2 * Y)	0.00064	0.00064	0.00055
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00205	-0.00207	-0.00222
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00110	0.00111	0.00103
	(A2 * !B1 * !B2 * Y)	-0.00404	-0.00407	-0.00418
	(!A2 * !B1 * !B2 * Y)	0.00110	0.00111	0.00103
	(!A2 * !B1 * !B2 * Y)	-0.00404	-0.00407	-0.00418
	(!A1 * !A2 * B2 * Y)	0.00116	0.00116	0.00100
	(!A1 * !A2 * B2 * Y)	-0.00380	-0.00384	-0.00414
	(!A1 * !A2 * B1 * !B2 * Y)	0.00117	0.00117	0.00102
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00384	-0.00388	-0.00415
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00190	0.00191	0.00179
	(A2 * !B1 * !B2 * Y)	-0.00823	-0.00828	-0.00847
	(!A2 * !B1 * !B2 * Y)	0.00190	0.00191	0.00179
	(!A2 * !B1 * !B2 * Y)	-0.00823	-0.00829	-0.00847
	(!A1 * !A2 * B2 * Y)	0.00201	0.00202	0.00174
	(!A1 * !A2 * B2 * Y)	-0.00777	-0.00784	-0.00840
	(!A1 * !A2 * B1 * !B2 * Y)	0.00202	0.00203	0.00177
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00785	-0.00792	-0.00841

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)	-0.00056	-0.00055	-0.00055
	(A2 * !B1 * !B2 * Y)	0.00225	0.00226	0.00225
	(!A2 * !B1 * !B2 * Y)	-0.00056	-0.00055	-0.00055
	(!A2 * !B1 * !B2 * Y)	0.00226	0.00225	0.00225
	(!A1 * !A2 * B2 * Y)	-0.00054	-0.00053	-0.00053
	(!A1 * !A2 * B2 * Y)	0.00226	0.00225	0.00225
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * B1 * !B2 * Y)	0.00226	0.00225	0.00225
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00101	-0.00100	-0.00100
	(A2 * !B1 * !B2 * Y)	0.00420	0.00421	0.00420
	(!A2 * !B1 * !B2 * Y)	-0.00101	-0.00100	-0.00100
	(!A2 * !B1 * !B2 * Y)	0.00420	0.00420	0.00420
	(!A1 * !A2 * B2 * Y)	-0.00097	-0.00097	-0.00096
	(!A1 * !A2 * B2 * Y)	0.00420	0.00423	0.00420
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00098	-0.00098	-0.00097
	(!A1 * !A2 * B1 * !B2 * Y)	0.00420	0.00420	0.00420
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00172	-0.00173	-0.00173
	(A2 * !B1 * !B2 * Y)	0.00844	0.00852	0.00850
	(!A2 * !B1 * !B2 * Y)	-0.00172	-0.00172	-0.00173
	(!A2 * !B1 * !B2 * Y)	0.00846	0.00845	0.00850
	(!A1 * !A2 * B2 * Y)	-0.00168	-0.00168	-0.00165
	(!A1 * !A2 * B2 * Y)	0.00850	0.00854	0.00849
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00169	-0.00169	-0.00168
	(!A1 * !A2 * B1 * !B2 * Y)	0.00847	0.00853	0.00850

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00257	0.00255	0.00250	0.00266	0.00262	1.04608
sky130_fd_sc_hs__o221a_2	0.00273	0.00268	0.00268	0.00279	0.00274	2.08445
sky130_fd_sc_hs__o221a_4	0.00511	0.00464	0.00543	0.00465	0.00472	3.96635

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.11828	0.41018
sky130_fd_sc_hs__o221a_2	0.00000	0.15680	0.41637
sky130_fd_sc_hs__o221a_4	0.00000	0.31606	0.83274

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)	0.13586	0.68821	6.48102
	A2->X (RR)	0.12733	0.67563	6.48389
	B1->X (RR)	0.12766	0.70588	6.60391
	B2->X (RR)	0.11997	0.68388	6.60284
	C1->X (RR)	0.11583	0.69079	6.71434
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.13295	0.58755	6.43505
	A2->X (RR)	0.12542	0.57681	6.43124
	B1->X (RR)	0.12515	0.60960	6.57020
	B2->X (RR)	0.12058	0.59280	6.56631
	C1->X (RR)	0.11412	0.60020	6.67208
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.14303	0.52790	6.52622
	A2->X (RR)	0.13469	0.51834	6.54871
	B1->X (RR)	0.13612	0.55036	6.64839
	B2->X (RR)	0.12699	0.52823	6.64509
	C1->X (RR)	0.12075	0.54018	6.77090

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.19771	0.70192	4.86768
	A2->X (FF)	0.18221	0.69843	4.84689
	B1->X (FF)	0.16892	0.65640	4.72022
	B2->X (FF)	0.15466	0.65142	4.67523
	C1->X (FF)	0.07805	0.53687	4.36351
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.23181	0.72314	5.08354
	A2->X (FF)	0.21455	0.72025	5.06215
	B1->X (FF)	0.19623	0.67261	4.93269
	B2->X (FF)	0.18213	0.67226	4.89409
	C1->X (FF)	0.08946	0.54014	4.52660
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.20803	0.65906	5.02098
	A2->X (FF)	0.18896	0.65080	4.98403
	B1->X (FF)	0.18681	0.62509	4.90743
	B2->X (FF)	0.16633	0.61525	4.85796
	C1->X (FF)	0.08400	0.49630	4.53185

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01405	0.01381	0.02186
	A1	0.00591	0.00567	0.01385
	A2	0.01245	0.01249	0.02448
	A2	0.00519	0.00523	0.01734
	B1	0.01258	0.01249	0.02303
	B1	0.00588	0.00579	0.01638
	B2	0.01111	0.01099	0.02664
	B2	0.00413	0.00423	0.02132
	C1	0.01169	0.01191	0.03200
	C1	0.00397	0.00463	0.02779
sky130_fd_sc_hs__o221a_2	A1	0.01703	0.01702	0.02495
	A1	0.00831	0.00831	0.01657
	A2	0.01530	0.01560	0.02741
	A2	0.00653	0.00688	0.01953
	B1	0.01541	0.01554	0.02587
	B1	0.00828	0.00843	0.01892
	B2	0.01398	0.01408	0.02925
	B2	0.00652	0.00686	0.02374
	C1	0.01437	0.01469	0.03429
	C1	0.00634	0.00714	0.02980

sky130_fd_sc_hs__o221a_4	**A1**	0.03178	0.03211	0.05094
	A1	0.01377	0.01424	0.03447
	A2	0.02787	0.02839	0.05552
	A2	0.01217	0.01275	0.04153
	B1	0.02945	0.02990	0.05122
	B1	0.01582	0.01630	0.03793
	B2	0.02541	0.02582	0.05666
	B2	0.01202	0.01289	0.04654
	C1	0.02665	0.02754	0.06671
	C1	0.01163	0.01343	0.05844

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00512	0.00497	0.01515
	A1	0.01296	0.01283	0.02303
	A2	0.00499	0.00558	0.02312
	A2	0.01202	0.01260	0.02970
	B1	0.00423	0.00439	0.01600
	B1	0.01092	0.01103	0.02180
	B2	0.00405	0.00504	0.02269
	B2	0.01010	0.01091	0.02797
	C1	0.00309	0.00442	0.02687
	C1	0.00895	0.01008	0.03038

sky130_fd_sc_hs__o221a_2	**A1**	0.00743	0.00726	0.01899
	A1	0.01591	0.01574	0.02612
	A2	0.00745	0.00765	0.02647
	A2	0.01501	0.01550	0.03274
	B1	0.00658	0.00660	0.01889
	B1	0.01365	0.01371	0.02473
	B2	0.00637	0.00723	0.02571
	B2	0.01270	0.01360	0.03103
	C1	0.00515	0.00654	0.02720
	C1	0.01124	0.01260	0.03317
sky130_fd_sc_hs__o221a_4	**A1**	0.01392	0.01397	0.03560
	A1	0.02949	0.02953	0.05106
	A2	0.01439	0.01574	0.05157
	A2	0.02774	0.02912	0.06380
	B1	0.01221	0.01249	0.03487
	B1	0.02577	0.02605	0.04800
	B2	0.01276	0.01463	0.05085
	B2	0.02389	0.02576	0.06020
	C1	0.01021	0.01317	0.05835
	C1	0.02126	0.02405	0.06507

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)**	0.00164	0.00144	0.00140
	(A2 * B2 * C1 * X)	-0.00133	-0.00156	-0.00158
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00122	0.00123	0.00122
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00174	-0.00177	-0.00176
	(A2 * B1 * !B2 * C1 * X)	0.00164	0.00144	0.00140
	(A2 * B1 * !B2 * C1 * X)	-0.00133	-0.00156	-0.00158
	(A2 * !B1 * !B2 * !X)	0.00122	0.00123	0.00122
	(A2 * !B1 * !B2 * !X)	-0.00174	-0.00177	-0.00176
	(!A2 * B2 * !C1 * !X)	0.00114	0.00113	0.00114
	(!A2 * B2 * !C1 * !X)	-0.00178	-0.00177	-0.00178
	(!A2 * B1 * !B2 * !C1 * !X)	0.00113	0.00114	0.00113
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00178	-0.00179	-0.00178
	(!A2 * !B1 * !B2 * C1 * !X)	0.00114	0.00115	0.00114
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00177	-0.00179	-0.00178
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00113	0.00114	0.00114
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00177	-0.00178	-0.00178

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00185	0.00165	0.00162
	(A2 * B2 * C1 * X)	-0.00132	-0.00156	-0.00157
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00141	0.00143	0.00141
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00174	-0.00178	-0.00177
	(A2 * B1 * !B2 * C1 * X)	0.00185	0.00165	0.00162
	(A2 * B1 * !B2 * C1 * X)	-0.00132	-0.00156	-0.00157
	(A2 * !B1 * !B2 * !X)	0.00141	0.00143	0.00141
	(A2 * !B1 * !B2 * !X)	-0.00174	-0.00178	-0.00177
	(!A2 * B2 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A2 * B2 * !C1 * !X)	-0.00179	-0.00180	-0.00179
	(!A2 * B1 * !B2 * !C1 * !X)	0.00133	0.00135	0.00133
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00179	-0.00180	-0.00179
	(!A2 * !B1 * !B2 * C1 * !X)	0.00134	0.00135	0.00133
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00179	-0.00180	-0.00179
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00132	0.00134	0.00133
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00178	-0.00179	-0.00179

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00339	0.00302	0.00296
	(A2 * B2 * C1 * X)	-0.00263	-0.00311	-0.00312
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00271	0.00275	0.00272
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00328	-0.00338	-0.00335
	(A2 * B1 * !B2 * C1 * X)	0.00339	0.00303	0.00296
	(A2 * B1 * !B2 * C1 * X)	-0.00263	-0.00311	-0.00312
	(A2 * !B1 * !B2 * !X)	0.00271	0.00275	0.00272
	(A2 * !B1 * !B2 * !X)	-0.00329	-0.00338	-0.00335
	(!A2 * B2 * !C1 * !X)	0.00256	0.00260	0.00257
	(!A2 * B2 * !C1 * !X)	-0.00339	-0.00341	-0.00339
	(!A2 * B1 * !B2 * !C1 * !X)	0.00258	0.00260	0.00259
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00339	-0.00340	-0.00339
	(!A2 * !B1 * !B2 * C1 * !X)	0.00261	0.00262	0.00261
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00339	-0.00340	-0.00339
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00260	0.00262	0.00260
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00339	-0.00340	-0.00339

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)**	-0.00139	-0.00139	-0.00139
	(A2 * B2 * C1 * X)	0.00159	0.00158	0.00159
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00122	-0.00122	-0.00121
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00176	0.00178	0.00176
	(A2 * B1 * !B2 * C1 * X)	-0.00139	-0.00139	-0.00139
	(A2 * B1 * !B2 * C1 * X)	0.00159	0.00158	0.00159
	(A2 * !B1 * !B2 * !X)	-0.00122	-0.00122	-0.00121
	(A2 * !B1 * !B2 * !X)	0.00176	0.00178	0.00176
	(!A2 * B2 * !C1 * !X)	-0.00103	-0.00113	-0.00114
	(!A2 * B2 * !C1 * !X)	0.00178	0.00180	0.00178
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00105	-0.00114	-0.00113
	(!A2 * B1 * !B2 * !C1 * !X)	0.00178	0.00180	0.00178
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00108	-0.00115	-0.00114
	(!A2 * !B1 * !B2 * C1 * !X)	0.00179	0.00180	0.00179
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00108	-0.00114	-0.00114
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00179	0.00180	0.00179

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00161	-0.00161	-0.00160
	(A2 * B2 * C1 * X)	0.00158	0.00159	0.00158
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00141	-0.00141	-0.00141
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00177	0.00178	0.00177
	(A2 * B1 * !B2 * C1 * X)	-0.00161	-0.00161	-0.00160
	(A2 * B1 * !B2 * C1 * X)	0.00158	0.00159	0.00158
	(A2 * !B1 * !B2 * !X)	-0.00141	-0.00141	-0.00141
	(A2 * !B1 * !B2 * !X)	0.00177	0.00178	0.00177
	(!A2 * B2 * !C1 * !X)	-0.00120	-0.00131	-0.00130
	(!A2 * B2 * !C1 * !X)	0.00180	0.00181	0.00180
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00122	-0.00134	-0.00133
	(!A2 * B1 * !B2 * !C1 * !X)	0.00180	0.00181	0.00180
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00126	-0.00135	-0.00133
	(!A2 * !B1 * !B2 * C1 * !X)	0.00179	0.00181	0.00179
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00126	-0.00134	-0.00133
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00179	0.00181	0.00179

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00294	-0.00295	-0.00293
	(A2 * B2 * C1 * X)	0.00312	0.00314	0.00313
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00271	-0.00272	-0.00271
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00335	0.00338	0.00335
	(A2 * B1 * !B2 * C1 * X)	-0.00294	-0.00296	-0.00293
	(A2 * B1 * !B2 * C1 * X)	0.00312	0.00315	0.00313
	(A2 * !B1 * !B2 * !X)	-0.00271	-0.00272	-0.00271
	(A2 * !B1 * !B2 * !X)	0.00335	0.00338	0.00335
	(!A2 * B2 * !C1 * !X)	-0.00234	-0.00259	-0.00257
	(!A2 * B2 * !C1 * !X)	0.00339	0.00344	0.00341
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00239	-0.00260	-0.00259
	(!A2 * B1 * !B2 * !C1 * !X)	0.00339	0.00344	0.00341
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00244	-0.00262	-0.00261
	(!A2 * !B1 * !B2 * C1 * !X)	0.00339	0.00343	0.00341
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00244	-0.00262	-0.00260
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00339	0.00344	0.00341

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)**	0.00143	0.00146	0.00143
	(A1 * B2 * C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * B2 * !C1 * !X)	0.00125	0.00125	0.00125
	(A1 * B2 * !C1 * !X)	-0.00161	-0.00163	-0.00163
	(A1 * B1 * !B2 * C1 * X)	0.00143	0.00146	0.00143
	(A1 * B1 * !B2 * C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * B1 * !B2 * !C1 * !X)	0.00125	0.00125	0.00125
	(A1 * B1 * !B2 * !C1 * !X)	-0.00161	-0.00163	-0.00163
	(A1 * !B1 * !B2 * C1 * !X)	0.00124	0.00126	0.00125
	(A1 * !B1 * !B2 * C1 * !X)	-0.00161	-0.00163	-0.00163
	(A1 * !B1 * !B2 * !C1 * !X)	0.00124	0.00127	0.00125
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00161	-0.00164	-0.00163
	(!A1 * B2 * !C1 * !X)	0.00114	0.00115	0.00115
	(!A1 * B2 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * B1 * !B2 * !C1 * !X)	0.00116	0.00116	0.00116
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(!A1 * !B1 * !B2 * C1 * !X)	0.00117	0.00117	0.00116
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00166	-0.00166	-0.00165
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00117	0.00117	0.00116
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00166	-0.00166	-0.00165

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00161	0.00165	0.00162
	(A1 * B2 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * B2 * !C1 * !X)	0.00143	0.00144	0.00143
	(A1 * B2 * !C1 * !X)	-0.00160	-0.00163	-0.00162
	(A1 * B1 * !B2 * C1 * X)	0.00161	0.00165	0.00162
	(A1 * B1 * !B2 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * B1 * !B2 * !C1 * !X)	0.00143	0.00144	0.00143
	(A1 * B1 * !B2 * !C1 * !X)	-0.00160	-0.00162	-0.00162
	(A1 * !B1 * !B2 * C1 * !X)	0.00143	0.00144	0.00143
	(A1 * !B1 * !B2 * C1 * !X)	-0.00160	-0.00162	-0.00162
	(A1 * !B1 * !B2 * !C1 * !X)	0.00143	0.00145	0.00143
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00160	-0.00163	-0.00162
	(!A1 * B2 * !C1 * !X)	0.00131	0.00132	0.00132
	(!A1 * B2 * !C1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !B2 * !C1 * !X)	0.00135	0.00137	0.00135
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !B2 * C1 * !X)	0.00135	0.00136	0.00135
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00135	0.00136	0.00135
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00264	0.00268	0.00264
	(A1 * B2 * C1 * X)	-0.00158	-0.00160	-0.00158
	(A1 * B2 * !C1 * !X)	0.00233	0.00236	0.00234
	(A1 * B2 * !C1 * !X)	-0.00312	-0.00318	-0.00318
	(A1 * B1 * !B2 * C1 * X)	0.00264	0.00269	0.00264
	(A1 * B1 * !B2 * C1 * X)	-0.00158	-0.00160	-0.00158
	(A1 * B1 * !B2 * !C1 * !X)	0.00233	0.00236	0.00234
	(A1 * B1 * !B2 * !C1 * !X)	-0.00312	-0.00318	-0.00318
	(A1 * !B1 * !B2 * C1 * !X)	0.00233	0.00236	0.00234
	(A1 * !B1 * !B2 * C1 * !X)	-0.00312	-0.00318	-0.00317
	(A1 * !B1 * !B2 * !C1 * !X)	0.00233	0.00235	0.00234
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00312	-0.00316	-0.00318
	(!A1 * B2 * !C1 * !X)	0.00216	0.00216	0.00216
	(!A1 * B2 * !C1 * !X)	-0.00323	-0.00323	-0.00323
	(!A1 * B1 * !B2 * !C1 * !X)	0.00218	0.00219	0.00218
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00323	-0.00324	-0.00323
	(!A1 * !B1 * !B2 * C1 * !X)	0.00218	0.00222	0.00220
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00321	-0.00324	-0.00323
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00219	0.00221	0.00220
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00321	-0.00323	-0.00323

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)**	-0.00138	-0.00139	-0.00142
	(A1 * B2 * C1 * X)	0.00085	0.00085	0.00081
	(A1 * B2 * !C1 * !X)	-0.00124	-0.00125	-0.00125
	(A1 * B2 * !C1 * !X)	0.00162	0.00163	0.00163
	(A1 * B1 * !B2 * C1 * X)	-0.00138	-0.00139	-0.00142
	(A1 * B1 * !B2 * C1 * X)	0.00085	0.00085	0.00081
	(A1 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00125	-0.00125
	(A1 * B1 * !B2 * !C1 * !X)	0.00162	0.00163	0.00163
	(A1 * !B1 * !B2 * C1 * !X)	-0.00124	-0.00125	-0.00124
	(A1 * !B1 * !B2 * C1 * !X)	0.00163	0.00163	0.00163
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00124	-0.00125	-0.00125
	(A1 * !B1 * !B2 * !C1 * !X)	0.00162	0.00164	0.00163
	(!A1 * B2 * !C1 * !X)	-0.00105	-0.00115	-0.00115
	(!A1 * B2 * !C1 * !X)	0.00165	0.00167	0.00166
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00107	-0.00116	-0.00116
	(!A1 * B1 * !B2 * !C1 * !X)	0.00165	0.00167	0.00166
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00110	-0.00117	-0.00116
	(!A1 * !B1 * !B2 * C1 * !X)	0.00166	0.00167	0.00166
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00110	-0.00117	-0.00116
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00166	0.00167	0.00166

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00156	-0.00157	-0.00161
	(A1 * B2 * C1 * X)	0.00084	0.00085	0.00080
	(A1 * B2 * !C1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * B2 * !C1 * !X)	0.00162	0.00163	0.00162
	(A1 * B1 * !B2 * C1 * X)	-0.00156	-0.00157	-0.00161
	(A1 * B1 * !B2 * C1 * X)	0.00085	0.00085	0.00081
	(A1 * B1 * !B2 * !C1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * B1 * !B2 * !C1 * !X)	0.00162	0.00163	0.00162
	(A1 * !B1 * !B2 * C1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * !B1 * !B2 * C1 * !X)	0.00162	0.00163	0.00162
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * !B1 * !B2 * !C1 * !X)	0.00162	0.00163	0.00162
	(!A1 * B2 * !C1 * !X)	-0.00120	-0.00132	-0.00132
	(!A1 * B2 * !C1 * !X)	0.00164	0.00166	0.00165
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00123	-0.00136	-0.00135
	(!A1 * B1 * !B2 * !C1 * !X)	0.00164	0.00166	0.00165
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00127	-0.00136	-0.00135
	(!A1 * !B1 * !B2 * C1 * !X)	0.00165	0.00166	0.00165
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00127	-0.00136	-0.00135
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00165	0.00166	0.00165

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00252	-0.00253	-0.00262
	(A1 * B2 * C1 * X)	0.00169	0.00170	0.00161
	(A1 * B2 * !C1 * !X)	-0.00233	-0.00234	-0.00233
	(A1 * B2 * !C1 * !X)	0.00317	0.00318	0.00318
	(A1 * B1 * !B2 * C1 * X)	-0.00252	-0.00253	-0.00262
	(A1 * B1 * !B2 * C1 * X)	0.00170	0.00170	0.00161
	(A1 * B1 * !B2 * !C1 * !X)	-0.00233	-0.00234	-0.00233
	(A1 * B1 * !B2 * !C1 * !X)	0.00318	0.00318	0.00318
	(A1 * !B1 * !B2 * C1 * !X)	-0.00232	-0.00234	-0.00233
	(A1 * !B1 * !B2 * C1 * !X)	0.00315	0.00318	0.00317
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00232	-0.00232	-0.00233
	(A1 * !B1 * !B2 * !C1 * !X)	0.00316	0.00316	0.00318
	(!A1 * B2 * !C1 * !X)	-0.00193	-0.00216	-0.00216
	(!A1 * B2 * !C1 * !X)	0.00323	0.00327	0.00324
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00198	-0.00219	-0.00218
	(!A1 * B1 * !B2 * !C1 * !X)	0.00324	0.00327	0.00324
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00206	-0.00221	-0.00220
	(!A1 * !B1 * !B2 * C1 * !X)	0.00325	0.00326	0.00324
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00206	-0.00221	-0.00220
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00324	0.00326	0.00324

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)**	0.00154	0.00134	0.00131
	(A2 * B2 * C1 * X)	-0.00137	-0.00160	-0.00161
	(A2 * !B2 * !C1 * !X)	0.00120	0.00121	0.00120
	(A2 * !B2 * !C1 * !X)	-0.00169	-0.00169	-0.00169
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00124	0.00126	0.00125
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00165	-0.00168	-0.00167
	(A1 * !A2 * B2 * C1 * X)	0.00154	0.00134	0.00131
	(A1 * !A2 * B2 * C1 * X)	-0.00137	-0.00160	-0.00161
	(A1 * !A2 * !B2 * !C1 * !X)	0.00120	0.00120	0.00120
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00169	-0.00169	-0.00169
	(!A1 * !A2 * B2 * C1 * !X)	0.00054	0.00055	0.00054
	(!A1 * !A2 * B2 * C1 * !X)	-0.00165	-0.00168	-0.00168
	(!A1 * !A2 * B2 * !C1 * !X)	0.00069	0.00069	0.00069
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00165	-0.00168	-0.00167
	(!A1 * !A2 * !B2 * C1 * !X)	0.00055	0.00055	0.00057
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00169	-0.00169	-0.00167
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00072	0.00072	0.00072
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00168	-0.00169	-0.00169

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00176	0.00157	0.00153
	(A2 * B2 * C1 * X)	-0.00134	-0.00156	-0.00158
	(A2 * !B2 * !C1 * !X)	0.00135	0.00137	0.00136
	(A2 * !B2 * !C1 * !X)	-0.00170	-0.00171	-0.00170
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00142	0.00144	0.00142
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00166	-0.00169	-0.00168
	(A1 * !A2 * B2 * C1 * X)	0.00176	0.00157	0.00153
	(A1 * !A2 * B2 * C1 * X)	-0.00134	-0.00156	-0.00158
	(A1 * !A2 * !B2 * !C1 * !X)	0.00135	0.00137	0.00136
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * B2 * C1 * !X)	0.00060	0.00061	0.00060
	(!A1 * !A2 * B2 * C1 * !X)	-0.00167	-0.00170	-0.00170
	(!A1 * !A2 * B2 * !C1 * !X)	0.00077	0.00077	0.00076
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00167	-0.00171	-0.00169
	(!A1 * !A2 * !B2 * C1 * !X)	0.00061	0.00062	0.00063
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00080	0.00081	0.00081
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00171	-0.00172	-0.00172

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00370	0.00333	0.00327
	(A2 * B2 * C1 * X)	-0.00265	-0.00313	-0.00314
	(A2 * !B2 * !C1 * !X)	0.00293	0.00296	0.00293
	(A2 * !B2 * !C1 * !X)	-0.00338	-0.00340	-0.00338
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00304	0.00309	0.00305
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00327	-0.00337	-0.00334
	(A1 * !A2 * B2 * C1 * X)	0.00370	0.00332	0.00327
	(A1 * !A2 * B2 * C1 * X)	-0.00265	-0.00313	-0.00314
	(A1 * !A2 * !B2 * !C1 * !X)	0.00292	0.00296	0.00293
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00338	-0.00340	-0.00338
	(!A1 * !A2 * B2 * C1 * !X)	0.00154	0.00156	0.00154
	(!A1 * !A2 * B2 * C1 * !X)	-0.00329	-0.00339	-0.00338
	(!A1 * !A2 * B2 * !C1 * !X)	0.00181	0.00184	0.00182
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00330	-0.00340	-0.00337
	(!A1 * !A2 * !B2 * C1 * !X)	0.00156	0.00158	0.00160
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00338	-0.00341	-0.00337
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00189	0.00191	0.00189
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00341	-0.00344	-0.00341

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)**	-0.00131	-0.00130	-0.00130
	(A2 * B2 * C1 * X)	0.00161	0.00161	0.00161
	(A2 * !B2 * !C1 * !X)	-0.00112	-0.00120	-0.00120
	(A2 * !B2 * !C1 * !X)	0.00172	0.00170	0.00169
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00167	0.00168	0.00167
	(A1 * !A2 * B2 * C1 * X)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * B2 * C1 * X)	0.00161	0.00161	0.00162
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00111	-0.00120	-0.00120
	(A1 * !A2 * !B2 * !C1 * !X)	0.00173	0.00171	0.00169
	(!A1 * !A2 * B2 * C1 * !X)	-0.00052	-0.00052	-0.00053
	(!A1 * !A2 * B2 * C1 * !X)	0.00171	0.00172	0.00168
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * B2 * !C1 * !X)	0.00169	0.00169	0.00167
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00052	-0.00054	-0.00054
	(!A1 * !A2 * !B2 * C1 * !X)	0.00172	0.00175	0.00170
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00072	-0.00072	-0.00072
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00172	0.00175	0.00170

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00151	-0.00152	-0.00151
	(A2 * B2 * C1 * X)	0.00157	0.00159	0.00159
	(A2 * !B2 * !C1 * !X)	-0.00127	-0.00137	-0.00136
	(A2 * !B2 * !C1 * !X)	0.00174	0.00173	0.00171
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00142	-0.00142	-0.00142
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00169	0.00169	0.00168
	(A1 * !A2 * B2 * C1 * X)	-0.00152	-0.00152	-0.00151
	(A1 * !A2 * B2 * C1 * X)	0.00159	0.00158	0.00159
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00125	-0.00137	-0.00136
	(A1 * !A2 * !B2 * !C1 * !X)	0.00175	0.00173	0.00171
	(!A1 * !A2 * B2 * C1 * !X)	-0.00057	-0.00059	-0.00059
	(!A1 * !A2 * B2 * C1 * !X)	0.00172	0.00176	0.00170
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00077	-0.00077	-0.00076
	(!A1 * !A2 * B2 * !C1 * !X)	0.00170	0.00173	0.00169
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * !A2 * !B2 * C1 * !X)	0.00176	0.00178	0.00172
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00080	-0.00081	-0.00081
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00176	0.00178	0.00173

	(A2 * B2 * C1 * X)	-0.00325	-0.00326	-0.00324
	(A2 * B2 * C1 * X)	0.00313	0.00316	0.00314
	(A2 * !B2 * !C1 * !X)	-0.00278	-0.00296	-0.00293
	(A2 * !B2 * !C1 * !X)	0.00345	0.00343	0.00339
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00304	-0.00306	-0.00304
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00333	0.00337	0.00334
	(A1 * !A2 * B2 * C1 * X)	-0.00325	-0.00325	-0.00324
	(A1 * !A2 * B2 * C1 * X)	0.00313	0.00314	0.00314
sky130_fd_sc_hs__o221a_4	**(A1 * !A2 * !B2 * !C1 * !X)**	-0.00275	-0.00296	-0.00293
	(A1 * !A2 * !B2 * !C1 * !X)	0.00347	0.00343	0.00339
	(!A1 * !A2 * B2 * C1 * !X)	-0.00145	-0.00147	-0.00151
	(!A1 * !A2 * B2 * C1 * !X)	0.00349	0.00351	0.00339
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00181	-0.00184	-0.00182
	(!A1 * !A2 * B2 * !C1 * !X)	0.00341	0.00346	0.00337
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00150	-0.00152	-0.00154
	(!A1 * !A2 * !B2 * C1 * !X)	0.00348	0.00352	0.00343
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00189	-0.00191	-0.00189
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00352	0.00355	0.00344

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)**	0.00160	0.00163	0.00160
	(A2 * B1 * C1 * X)	-0.00081	-0.00083	-0.00081
	(A2 * B1 * !C1 * !X)	0.00138	0.00139	0.00139
	(A2 * B1 * !C1 * !X)	-0.00165	-0.00168	-0.00168
	(A2 * !B1 * !C1 * !X)	0.00134	0.00135	0.00133
	(A2 * !B1 * !C1 * !X)	-0.00170	-0.00170	-0.00169
	(A1 * !A2 * B1 * C1 * X)	0.00160	0.00163	0.00160
	(A1 * !A2 * B1 * C1 * X)	-0.00081	-0.00083	-0.00081
	(A1 * !A2 * B1 * !C1 * !X)	0.00138	0.00139	0.00139
	(A1 * !A2 * B1 * !C1 * !X)	-0.00165	-0.00168	-0.00168
	(A1 * !A2 * !B1 * !C1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00170	-0.00170	-0.00169
	(!A1 * !A2 * B1 * C1 * !X)	0.00063	0.00063	0.00063
	(!A1 * !A2 * B1 * C1 * !X)	-0.00165	-0.00169	-0.00169
	(!A1 * !A2 * B1 * !C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00165	-0.00170	-0.00168
	(!A1 * !A2 * !B1 * C1 * !X)	0.00064	0.00065	0.00066
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00170	-0.00170	-0.00168
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00082	0.00082	0.00081
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00171	-0.00171	-0.00170

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00173	0.00176	0.00173
	(A2 * B1 * C1 * X)	-0.00079	-0.00081	-0.00079
	(A2 * B1 * !C1 * !X)	0.00152	0.00153	0.00153
	(A2 * B1 * !C1 * !X)	-0.00162	-0.00165	-0.00164
	(A2 * !B1 * !C1 * !X)	0.00146	0.00147	0.00146
	(A2 * !B1 * !C1 * !X)	-0.00168	-0.00168	-0.00167
	(A1 * !A2 * B1 * C1 * X)	0.00173	0.00176	0.00173
	(A1 * !A2 * B1 * C1 * X)	-0.00079	-0.00081	-0.00079
	(A1 * !A2 * B1 * !C1 * !X)	0.00152	0.00153	0.00152
	(A1 * !A2 * B1 * !C1 * !X)	-0.00162	-0.00165	-0.00165
	(A1 * !A2 * !B1 * !C1 * !X)	0.00147	0.00148	0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !A2 * B1 * C1 * !X)	0.00066	0.00066	0.00066
	(!A1 * !A2 * B1 * C1 * !X)	-0.00163	-0.00166	-0.00167
	(!A1 * !A2 * B1 * !C1 * !X)	0.00082	0.00083	0.00082
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00164	-0.00168	-0.00166
	(!A1 * !A2 * !B1 * C1 * !X)	0.00068	0.00069	0.00069
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00167	-0.00168	-0.00166
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00088	0.00087	0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00169	-0.00169	-0.00168

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00273	0.00277	0.00273
	(A2 * B1 * C1 * X)	-0.00159	-0.00162	-0.00159
	(A2 * B1 * !C1 * !X)	0.00238	0.00241	0.00239
	(A2 * B1 * !C1 * !X)	-0.00317	-0.00323	-0.00323
	(A2 * !B1 * !C1 * !X)	0.00229	0.00232	0.00230
	(A2 * !B1 * !C1 * !X)	-0.00327	-0.00330	-0.00328
	(A1 * !A2 * B1 * C1 * X)	0.00273	0.00277	0.00274
	(A1 * !A2 * B1 * C1 * X)	-0.00159	-0.00162	-0.00158
	(A1 * !A2 * B1 * !C1 * !X)	0.00238	0.00241	0.00239
	(A1 * !A2 * B1 * !C1 * !X)	-0.00317	-0.00323	-0.00323
	(A1 * !A2 * !B1 * !C1 * !X)	0.00229	0.00232	0.00230
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00327	-0.00329	-0.00328
	(!A1 * !A2 * B1 * C1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A2 * B1 * C1 * !X)	-0.00319	-0.00326	-0.00326
	(!A1 * !A2 * B1 * !C1 * !X)	0.00123	0.00124	0.00124
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00320	-0.00327	-0.00325
	(!A1 * !A2 * !B1 * C1 * !X)	0.00097	0.00099	0.00101
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00327	-0.00330	-0.00326
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00132	0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00330	-0.00332	-0.00331

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)**	-0.00155	-0.00154	-0.00159
	(A2 * B1 * C1 * X)	0.00087	0.00086	0.00083
	(A2 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * !C1 * !X)	0.00167	0.00168	0.00168
	(A2 * !B1 * !C1 * !X)	-0.00126	-0.00134	-0.00133
	(A2 * !B1 * !C1 * !X)	0.00173	0.00171	0.00170
	(A1 * !A2 * B1 * C1 * X)	-0.00154	-0.00155	-0.00159
	(A1 * !A2 * B1 * C1 * X)	0.00087	0.00087	0.00083
	(A1 * !A2 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * B1 * !C1 * !X)	0.00167	0.00168	0.00168
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00124	-0.00134	-0.00134
	(A1 * !A2 * !B1 * !C1 * !X)	0.00174	0.00171	0.00170
	(!A1 * !A2 * B1 * C1 * !X)	-0.00059	-0.00060	-0.00062
	(!A1 * !A2 * B1 * C1 * !X)	0.00175	0.00175	0.00169
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A2 * B1 * !C1 * !X)	0.00170	0.00171	0.00168
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00062	-0.00063	-0.00063
	(!A1 * !A2 * !B1 * C1 * !X)	0.00174	0.00176	0.00171
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00082	-0.00082	-0.00081
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00176	0.00178	0.00171

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00168	-0.00169	-0.00172
	(A2 * B1 * C1 * X)	0.00084	0.00084	0.00080
	(A2 * B1 * !C1 * !X)	-0.00152	-0.00153	-0.00152
	(A2 * B1 * !C1 * !X)	0.00164	0.00165	0.00164
	(A2 * !B1 * !C1 * !X)	-0.00137	-0.00147	-0.00146
	(A2 * !B1 * !C1 * !X)	0.00170	0.00169	0.00168
	(A1 * !A2 * B1 * C1 * X)	-0.00168	-0.00168	-0.00172
	(A1 * !A2 * B1 * C1 * X)	0.00084	0.00084	0.00081
	(A1 * !A2 * B1 * !C1 * !X)	-0.00152	-0.00153	-0.00152
	(A1 * !A2 * B1 * !C1 * !X)	0.00164	0.00165	0.00165
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00135	-0.00148	-0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	0.00171	0.00169	0.00168
	(!A1 * !A2 * B1 * C1 * !X)	-0.00062	-0.00063	-0.00065
	(!A1 * !A2 * B1 * C1 * !X)	0.00172	0.00172	0.00167
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00082	-0.00083	-0.00082
	(!A1 * !A2 * B1 * !C1 * !X)	0.00167	0.00169	0.00166
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00065	-0.00066	-0.00066
	(!A1 * !A2 * !B1 * C1 * !X)	0.00173	0.00174	0.00169
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00088	-0.00087	-0.00087
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00173	0.00176	0.00170

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00260	-0.00261	-0.00272
	(A2 * B1 * C1 * X)	0.00169	0.00169	0.00162
	(A2 * B1 * !C1 * !X)	-0.00238	-0.00239	-0.00238
	(A2 * B1 * !C1 * !X)	0.00323	0.00323	0.00323
	(A2 * !B1 * !C1 * !X)	-0.00214	-0.00231	-0.00230
	(A2 * !B1 * !C1 * !X)	0.00334	0.00332	0.00329
	(A1 * !A2 * B1 * C1 * X)	-0.00260	-0.00262	-0.00272
	(A1 * !A2 * B1 * C1 * X)	0.00169	0.00170	0.00162
	(A1 * !A2 * B1 * !C1 * !X)	-0.00238	-0.00239	-0.00238
	(A1 * !A2 * B1 * !C1 * !X)	0.00323	0.00323	0.00323
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00211	-0.00231	-0.00230
	(A1 * !A2 * !B1 * !C1 * !X)	0.00335	0.00332	0.00329
	(!A1 * !A2 * B1 * C1 * !X)	-0.00091	-0.00092	-0.00094
	(!A1 * !A2 * B1 * C1 * !X)	0.00333	0.00333	0.00326
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00123	-0.00124	-0.00124
	(!A1 * !A2 * B1 * !C1 * !X)	0.00328	0.00330	0.00325
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00094	-0.00096	-0.00096
	(!A1 * !A2 * !B1 * C1 * !X)	0.00337	0.00341	0.00332
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00132	-0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00338	0.00344	0.00333

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)	0.00054	0.00054	0.00050
	(A2 * !B1 * !B2 * !X)	-0.00197	-0.00197	-0.00203
	(!A2 * !B1 * !B2 * !X)	0.00054	0.00054	0.00050
	(!A2 * !B1 * !B2 * !X)	-0.00197	-0.00197	-0.00203
	(!A1 * !A2 * B2 * !X)	0.00053	0.00053	0.00046
	(!A1 * !A2 * B2 * !X)	-0.00187	-0.00188	-0.00202
	(!A1 * !A2 * B1 * !B2 * !X)	0.00054	0.00054	0.00047
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00189	-0.00189	-0.00202
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00062	0.00062	0.00058
	(A2 * !B1 * !B2 * !X)	-0.00198	-0.00198	-0.00204
	(!A2 * !B1 * !B2 * !X)	0.00062	0.00062	0.00058
	(!A2 * !B1 * !B2 * !X)	-0.00198	-0.00199	-0.00204
	(!A1 * !A2 * B2 * !X)	0.00064	0.00063	0.00056
	(!A1 * !A2 * B2 * !X)	-0.00186	-0.00186	-0.00202
	(!A1 * !A2 * B1 * !B2 * !X)	0.00064	0.00064	0.00057
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00188	-0.00189	-0.00202
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00091	0.00091	0.00084
	(A2 * !B1 * !B2 * !X)	-0.00371	-0.00373	-0.00384
	(!A2 * !B1 * !B2 * !X)	0.00090	0.00091	0.00084
	(!A2 * !B1 * !B2 * !X)	-0.00371	-0.00373	-0.00384
	(!A1 * !A2 * B2 * !X)	0.00090	0.00091	0.00078
	(!A1 * !A2 * B2 * !X)	-0.00351	-0.00354	-0.00381
	(!A1 * !A2 * B1 * !B2 * !X)	0.00091	0.00091	0.00079
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00355	-0.00358	-0.00381

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)	-0.00048	-0.00048	-0.00048
	(A2 * !B1 * !B2 * !X)	0.00203	0.00203	0.00204
	(!A2 * !B1 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * !B2 * !X)	0.00203	0.00207	0.00204
	(!A1 * !A2 * B2 * !X)	-0.00047	-0.00046	-0.00046
	(!A1 * !A2 * B2 * !X)	0.00205	0.00203	0.00204
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * B1 * !B2 * !X)	0.00203	0.00207	0.00204
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00056	-0.00058	-0.00057
	(A2 * !B1 * !B2 * !X)	0.00204	0.00208	0.00205
	(!A2 * !B1 * !B2 * !X)	-0.00056	-0.00058	-0.00057
	(!A2 * !B1 * !B2 * !X)	0.00204	0.00208	0.00205
	(!A1 * !A2 * B2 * !X)	-0.00055	-0.00056	-0.00055
	(!A1 * !A2 * B2 * !X)	0.00205	0.00208	0.00205
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00055	-0.00056	-0.00055
	(!A1 * !A2 * B1 * !B2 * !X)	0.00204	0.00208	0.00205
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00082	-0.00082	-0.00081
	(A2 * !B1 * !B2 * !X)	0.00387	0.00392	0.00386
	(!A2 * !B1 * !B2 * !X)	-0.00082	-0.00082	-0.00081
	(!A2 * !B1 * !B2 * !X)	0.00387	0.00391	0.00386
	(!A1 * !A2 * B2 * !X)	-0.00076	-0.00078	-0.00077
	(!A1 * !A2 * B2 * !X)	0.00384	0.00391	0.00386
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * B1 * !B2 * !X)	0.00387	0.00391	0.00386

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00279	0.00276	0.00284	0.00291	0.53141
sky130_fd_sc_hs__o22ai_2	0.00527	0.00542	0.00541	0.00533	0.95047
sky130_fd_sc_hs__o22ai_4	0.01084	0.01035	0.01124	0.01054	1.67063

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	0.03327	0.10576
sky130_fd_sc_hs__o22ai_2	0.00000	0.06653	0.21153
sky130_fd_sc_hs__o22ai_4	0.00000	0.13306	0.42305

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)	0.12756	1.01701	10.81290
	A2->Y (FR)	0.11138	1.00559	10.95780
	B1->Y (FR)	0.08217	0.97081	10.76880
	B2->Y (FR)	0.06737	0.96158	10.91230
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.12765	0.88604	10.65590
	A2->Y (FR)	0.10671	0.87229	10.82520
	B1->Y (FR)	0.07843	0.83436	10.56940
	B2->Y (FR)	0.05349	0.81946	10.73750
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.12257	0.75186	10.04660
	A2->Y (FR)	0.10369	0.75445	10.36110
	B1->Y (FR)	0.07497	0.71006	10.08870
	B2->Y (FR)	0.05483	0.70767	10.32900

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.04864	0.42336	4.40152
	A2->Y (RF)	0.04175	0.41242	4.37719
	B1->Y (RF)	0.03924	0.46488	5.03706
	B2->Y (RF)	0.03288	0.45093	4.97351
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.04950	0.37022	4.29550
	A2->Y (RF)	0.04054	0.35597	4.25765
	B1->Y (RF)	0.03930	0.41043	5.01800
	B2->Y (RF)	0.03003	0.38969	4.91396
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.03747	0.28836	3.90277
	A2->Y (RF)	0.03161	0.27296	3.87346
	B1->Y (RF)	0.02822	0.33082	4.70097
	B2->Y (RF)	0.02889	0.34739	4.91008

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00159	0.00142	0.00370
	A1	0.00908	0.00894	0.01118
	A2	0.00167	0.00194	0.00664
	A2	0.00803	0.00831	0.01283
	B1	-0.00019	-0.00030	0.00199
	B1	0.00609	0.00597	0.00821
	B2	-0.00017	0.00022	0.00490
	B2	0.00507	0.00542	0.00990
sky130_fd_sc_hs__o22ai_2	A1	0.00287	0.00251	0.00711
	A1	0.01779	0.01745	0.02192
	A2	0.00279	0.00342	0.01282
	A2	0.01575	0.01636	0.02511
	B1	-0.00063	-0.00081	0.00378
	B1	0.01197	0.01176	0.01623
	B2	-0.00080	0.00021	0.00966
	B2	0.00963	0.01057	0.01937
sky130_fd_sc_hs__o22ai_4	A1	0.00432	0.00373	0.01462
	A1	0.03380	0.03301	0.04379
	A2	0.00427	0.00509	0.02617
	A2	0.02940	0.03000	0.05053
	B1	-0.00153	-0.00186	0.00912
	B1	0.02341	0.02309	0.03370
	B2	-0.00149	0.00048	0.02089
	B2	0.01918	0.02112	0.04064

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00984	0.00980	0.01171
	A1	0.00208	0.00198	0.00370
	A2	0.00786	0.00784	0.00951
	A2	0.00119	0.00114	0.00284
	B1	0.00829	0.00828	0.01042
	B1	0.00211	0.00207	0.00425
	B2	0.00648	0.00657	0.00890
	B2	0.00017	0.00025	0.00257
sky130_fd_sc_hs__o22ai_2	A1	0.02023	0.01994	0.02381
	A1	0.00485	0.00455	0.00803
	A2	0.01601	0.01590	0.01989
	A2	0.00250	0.00241	0.00591
	B1	0.01714	0.01736	0.02135
	B1	0.00485	0.00494	0.00901
	B2	0.01262	0.01301	0.01770
	B2	-0.00036	0.00021	0.00465
sky130_fd_sc_hs__o22ai_4	A1	0.03812	0.03750	0.04621
	A1	0.00774	0.00712	0.01502
	A2	0.03012	0.02987	0.03806
	A2	0.00395	0.00364	0.01158
	B1	0.03239	0.03220	0.04227
	B1	0.00786	0.00760	0.01711
	B2	0.02442	0.02470	0.03487
	B2	-0.00043	0.00006	0.01035

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00179	0.00160	0.00157
	(A2 * B2 * !Y)	-0.00157	-0.00180	-0.00181
	(A2 * B1 * !B2 * !Y)	0.00179	0.00160	0.00157
	(A2 * B1 * !B2 * !Y)	-0.00157	-0.00180	-0.00181
	(A2 * !B1 * !B2 * Y)	0.00157	0.00159	0.00157
	(A2 * !B1 * !B2 * Y)	-0.00177	-0.00181	-0.00180
	(!A2 * !B1 * !B2 * Y)	0.00147	0.00150	0.00148
	(!A2 * !B1 * !B2 * Y)	-0.00181	-0.00183	-0.00182
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00342	0.00298	0.00292
	(A2 * B2 * !Y)	-0.00301	-0.00357	-0.00357
	(A2 * B1 * !B2 * !Y)	0.00342	0.00298	0.00292
	(A2 * B1 * !B2 * !Y)	-0.00301	-0.00357	-0.00357
	(A2 * !B1 * !B2 * Y)	0.00291	0.00295	0.00291
	(A2 * !B1 * !B2 * Y)	-0.00349	-0.00361	-0.00358
	(!A2 * !B1 * !B2 * Y)	0.00275	0.00278	0.00277
	(!A2 * !B1 * !B2 * Y)	-0.00362	-0.00365	-0.00363
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00693	0.00601	0.00587
	(A2 * B2 * !Y)	-0.00594	-0.00705	-0.00706
	(A2 * B1 * !B2 * !Y)	0.00693	0.00601	0.00587
	(A2 * B1 * !B2 * !Y)	-0.00594	-0.00705	-0.00706
	(A2 * !B1 * !B2 * Y)	0.00570	0.00578	0.00570
	(A2 * !B1 * !B2 * Y)	-0.00709	-0.00725	-0.00720
	(!A2 * !B1 * !B2 * Y)	0.00539	0.00545	0.00541
	(!A2 * !B1 * !B2 * Y)	-0.00732	-0.00736	-0.00733

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00157	-0.00157	-0.00156
	(A2 * B2 * !Y)	0.00181	0.00181	0.00181
	(A2 * B1 * !B2 * !Y)	-0.00157	-0.00157	-0.00156
	(A2 * B1 * !B2 * !Y)	0.00181	0.00181	0.00181
	(A2 * !B1 * !B2 * Y)	-0.00157	-0.00157	-0.00157
	(A2 * !B1 * !B2 * Y)	0.00181	0.00181	0.00180
	(!A2 * !B1 * !B2 * Y)	-0.00140	-0.00150	-0.00148
	(!A2 * !B1 * !B2 * Y)	0.00184	0.00184	0.00183
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00292	-0.00293	-0.00291
	(A2 * B2 * !Y)	0.00357	0.00360	0.00357
	(A2 * B1 * !B2 * !Y)	-0.00292	-0.00293	-0.00291
	(A2 * B1 * !B2 * !Y)	0.00357	0.00360	0.00357
	(A2 * !B1 * !B2 * Y)	-0.00290	-0.00292	-0.00291
	(A2 * !B1 * !B2 * Y)	0.00356	0.00361	0.00358
	(!A2 * !B1 * !B2 * Y)	-0.00259	-0.00278	-0.00277
	(!A2 * !B1 * !B2 * Y)	0.00368	0.00368	0.00364
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00585	-0.00586	-0.00583
	(A2 * B2 * !Y)	0.00704	0.00708	0.00706
	(A2 * B1 * !B2 * !Y)	-0.00583	-0.00586	-0.00583
	(A2 * B1 * !B2 * !Y)	0.00702	0.00708	0.00706
	(A2 * !B1 * !B2 * Y)	-0.00568	-0.00571	-0.00569
	(A2 * !B1 * !B2 * Y)	0.00717	0.00725	0.00720
	(!A2 * !B1 * !B2 * Y)	-0.00503	-0.00544	-0.00541
	(!A2 * !B1 * !B2 * Y)	0.00739	0.00743	0.00735

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00154	0.00157	0.00155
	(A1 * B2 * !Y)	-0.00087	-0.00089	-0.00088
	(A1 * B1 * !B2 * !Y)	0.00154	0.00157	0.00155
	(A1 * B1 * !B2 * !Y)	-0.00087	-0.00089	-0.00088
	(A1 * !B1 * !B2 * Y)	0.00143	0.00144	0.00143
	(A1 * !B1 * !B2 * Y)	-0.00170	-0.00174	-0.00173
	(!A1 * !B1 * !B2 * Y)	0.00135	0.00135	0.00135
	(!A1 * !B1 * !B2 * Y)	-0.00175	-0.00175	-0.00175
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00331	0.00337	0.00332
	(A1 * B2 * !Y)	-0.00173	-0.00176	-0.00173
	(A1 * B1 * !B2 * !Y)	0.00331	0.00337	0.00332
	(A1 * B1 * !B2 * !Y)	-0.00173	-0.00176	-0.00173
	(A1 * !B1 * !B2 * Y)	0.00293	0.00293	0.00291
	(A1 * !B1 * !B2 * Y)	-0.00355	-0.00360	-0.00360
	(!A1 * !B1 * !B2 * Y)	0.00276	0.00278	0.00277
	(!A1 * !B1 * !B2 * Y)	-0.00367	-0.00368	-0.00367
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00614	0.00621	0.00611
	(A1 * B2 * !Y)	-0.00341	-0.00344	-0.00338
	(A1 * B1 * !B2 * !Y)	0.00611	0.00622	0.00611
	(A1 * B1 * !B2 * !Y)	-0.00338	-0.00344	-0.00338
	(A1 * !B1 * !B2 * Y)	0.00560	0.00562	0.00561
	(A1 * !B1 * !B2 * Y)	-0.00668	-0.00677	-0.00679
	(!A1 * !B1 * !B2 * Y)	0.00524	0.00533	0.00527
	(!A1 * !B1 * !B2 * Y)	-0.00692	-0.00699	-0.00695

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00149	-0.00150	-0.00154
	(A1 * B2 * !Y)	0.00094	0.00094	0.00089
	(A1 * B1 * !B2 * !Y)	-0.00149	-0.00150	-0.00154
	(A1 * B1 * !B2 * !Y)	0.00094	0.00094	0.00089
	(A1 * !B1 * !B2 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * !B1 * !B2 * Y)	0.00173	0.00174	0.00173
	(!A1 * !B1 * !B2 * Y)	-0.00128	-0.00135	-0.00135
	(!A1 * !B1 * !B2 * Y)	0.00176	0.00177	0.00176
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00314	-0.00316	-0.00329
	(A1 * B2 * !Y)	0.00189	0.00190	0.00177
	(A1 * B1 * !B2 * !Y)	-0.00314	-0.00316	-0.00329
	(A1 * B1 * !B2 * !Y)	0.00190	0.00190	0.00177
	(A1 * !B1 * !B2 * Y)	-0.00289	-0.00290	-0.00290
	(A1 * !B1 * !B2 * Y)	0.00359	0.00360	0.00360
	(!A1 * !B1 * !B2 * Y)	-0.00258	-0.00277	-0.00277
	(!A1 * !B1 * !B2 * Y)	0.00371	0.00371	0.00368
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00584	-0.00589	-0.00608
	(A1 * B2 * !Y)	0.00361	0.00362	0.00344
	(A1 * B1 * !B2 * !Y)	-0.00584	-0.00589	-0.00608
	(A1 * B1 * !B2 * !Y)	0.00361	0.00363	0.00344
	(A1 * !B1 * !B2 * Y)	-0.00558	-0.00559	-0.00560
	(A1 * !B1 * !B2 * Y)	0.00677	0.00677	0.00679
	(!A1 * !B1 * !B2 * Y)	-0.00497	-0.00533	-0.00527
	(!A1 * !B1 * !B2 * Y)	0.00702	0.00703	0.00697

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00186	0.00166	0.00163
	(A2 * B2 * !Y)	-0.00153	-0.00177	-0.00177
	(A1 * !A2 * B2 * !Y)	0.00186	0.00166	0.00163
	(A1 * !A2 * B2 * !Y)	-0.00153	-0.00177	-0.00177
	(!A1 * !A2 * B2 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A2 * B2 * Y)	-0.00211	-0.00216	-0.00214
	(!A1 * !A2 * !B2 * Y)	0.00064	0.00065	0.00059
	(!A1 * !A2 * !B2 * Y)	-0.00205	-0.00207	-0.00216
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00343	0.00296	0.00290
	(A2 * B2 * !Y)	-0.00304	-0.00362	-0.00362
	(A1 * !A2 * B2 * !Y)	0.00343	0.00296	0.00290
	(A1 * !A2 * B2 * !Y)	-0.00304	-0.00362	-0.00362
	(!A1 * !A2 * B2 * Y)	0.00095	0.00096	0.00095
	(!A1 * !A2 * B2 * Y)	-0.00414	-0.00426	-0.00423
	(!A1 * !A2 * !B2 * Y)	0.00110	0.00110	0.00100
	(!A1 * !A2 * !B2 * Y)	-0.00410	-0.00413	-0.00429
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00722	0.00632	0.00620
	(A2 * B2 * !Y)	-0.00582	-0.00689	-0.00688
	(A1 * !A2 * B2 * !Y)	0.00722	0.00632	0.00620
	(A1 * !A2 * B2 * !Y)	-0.00582	-0.00689	-0.00689
	(!A1 * !A2 * B2 * Y)	0.00180	0.00181	0.00179
	(!A1 * !A2 * B2 * Y)	-0.00848	-0.00866	-0.00859
	(!A1 * !A2 * !B2 * Y)	0.00205	0.00205	0.00188
	(!A1 * !A2 * !B2 * Y)	-0.00837	-0.00843	-0.00868

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00162	-0.00163	-0.00162
	(A2 * B2 * !Y)	0.00176	0.00178	0.00177
	(A1 * !A2 * B2 * !Y)	-0.00162	-0.00162	-0.00162
	(A1 * !A2 * B2 * !Y)	0.00176	0.00178	0.00177
	(!A1 * !A2 * B2 * Y)	-0.00056	-0.00057	-0.00057
	(!A1 * !A2 * B2 * Y)	0.00214	0.00216	0.00214
	(!A1 * !A2 * !B2 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * !B2 * Y)	0.00216	0.00216	0.00217
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00288	-0.00291	-0.00288
	(A2 * B2 * !Y)	0.00360	0.00365	0.00362
	(A1 * !A2 * B2 * !Y)	-0.00288	-0.00289	-0.00288
	(A1 * !A2 * B2 * !Y)	0.00360	0.00362	0.00362
	(!A1 * !A2 * B2 * Y)	-0.00094	-0.00095	-0.00095
	(!A1 * !A2 * B2 * Y)	0.00422	0.00428	0.00423
	(!A1 * !A2 * !B2 * Y)	-0.00097	-0.00096	-0.00096
	(!A1 * !A2 * !B2 * Y)	0.00432	0.00431	0.00431
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00619	-0.00621	-0.00617
	(A2 * B2 * !Y)	0.00687	0.00694	0.00688
	(A1 * !A2 * B2 * !Y)	-0.00619	-0.00620	-0.00617
	(A1 * !A2 * B2 * !Y)	0.00687	0.00691	0.00689
	(!A1 * !A2 * B2 * Y)	-0.00177	-0.00178	-0.00179
	(!A1 * !A2 * B2 * Y)	0.00859	0.00866	0.00859
	(!A1 * !A2 * !B2 * Y)	-0.00182	-0.00182	-0.00181
	(!A1 * !A2 * !B2 * Y)	0.00872	0.00874	0.00872

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00166	0.00170	0.00167
	(A2 * B1 * !Y)	-0.00085	-0.00086	-0.00084
	(A1 * !A2 * B1 * !Y)	0.00166	0.00170	0.00167
	(A1 * !A2 * B1 * !Y)	-0.00084	-0.00086	-0.00084
	(!A1 * !A2 * B1 * Y)	0.00047	0.00047	0.00047
	(!A1 * !A2 * B1 * Y)	-0.00211	-0.00213	-0.00211
	(!A1 * !A2 * !B1 * Y)	0.00055	0.00054	0.00049
	(!A1 * !A2 * !B1 * Y)	-0.00205	-0.00206	-0.00214
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00316	0.00323	0.00318
	(A2 * B1 * !Y)	-0.00173	-0.00177	-0.00174
	(A1 * !A2 * B1 * !Y)	0.00316	0.00323	0.00318
	(A1 * !A2 * B1 * !Y)	-0.00173	-0.00177	-0.00174
	(!A1 * !A2 * B1 * Y)	0.00089	0.00090	0.00090
	(!A1 * !A2 * B1 * Y)	-0.00405	-0.00416	-0.00414
	(!A1 * !A2 * !B1 * Y)	0.00105	0.00105	0.00095
	(!A1 * !A2 * !B1 * Y)	-0.00404	-0.00407	-0.00422
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00620	0.00629	0.00619
	(A2 * B1 * !Y)	-0.00345	-0.00347	-0.00340
	(A1 * !A2 * B1 * !Y)	0.00618	0.00616	0.00619
	(A1 * !A2 * B1 * !Y)	-0.00342	-0.00339	-0.00340
	(!A1 * !A2 * B1 * Y)	0.00168	0.00169	0.00169
	(!A1 * !A2 * B1 * Y)	-0.00802	-0.00814	-0.00813
	(!A1 * !A2 * !B1 * Y)	0.00193	0.00195	0.00177
	(!A1 * !A2 * !B1 * Y)	-0.00792	-0.00802	-0.00827

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00161	-0.00163	-0.00166
	(A2 * B1 * !Y)	0.00089	0.00090	0.00086
	(A1 * !A2 * B1 * !Y)	-0.00161	-0.00162	-0.00166
	(A1 * !A2 * B1 * !Y)	0.00090	0.00090	0.00086
	(!A1 * !A2 * B1 * Y)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * B1 * Y)	0.00212	0.00213	0.00211
	(!A1 * !A2 * !B1 * Y)	-0.00048	-0.00047	-0.00047
	(!A1 * !A2 * !B1 * Y)	0.00215	0.00216	0.00215
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00299	-0.00301	-0.00315
	(A2 * B1 * !Y)	0.00189	0.00189	0.00178
	(A1 * !A2 * B1 * !Y)	-0.00299	-0.00301	-0.00315
	(A1 * !A2 * B1 * !Y)	0.00189	0.00189	0.00178
	(!A1 * !A2 * B1 * Y)	-0.00089	-0.00090	-0.00090
	(!A1 * !A2 * B1 * Y)	0.00416	0.00416	0.00414
	(!A1 * !A2 * !B1 * Y)	-0.00091	-0.00092	-0.00091
	(!A1 * !A2 * !B1 * Y)	0.00422	0.00426	0.00424
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00591	-0.00596	-0.00616
	(A2 * B1 * !Y)	0.00362	0.00364	0.00347
	(A1 * !A2 * B1 * !Y)	-0.00590	-0.00596	-0.00616
	(A1 * !A2 * B1 * !Y)	0.00361	0.00365	0.00347
	(!A1 * !A2 * B1 * Y)	-0.00168	-0.00167	-0.00169
	(!A1 * !A2 * B1 * Y)	0.00817	0.00814	0.00813
	(!A1 * !A2 * !B1 * Y)	-0.00171	-0.00172	-0.00171
	(!A1 * !A2 * !B1 * Y)	0.00827	0.00832	0.00830

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00241	0.00251	0.00259	0.00277	1.10559
sky130_fd_sc_hs__o22a_2	0.00259	0.00264	0.00275	0.00272	2.11616
sky130_fd_sc_hs__o22a_4	0.00503	0.00468	0.00517	0.00490	3.96031

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22a_1	0.00000	0.10335	0.27551
sky130_fd_sc_hs__o22a_2	0.00000	0.12852	0.28171
sky130_fd_sc_hs__o22a_4	0.00000	0.25994	0.56342

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)	0.09555	0.62800	6.32668
	A2->X (RR)	0.08800	0.60781	6.32535
	B1->X (RR)	0.08735	0.62354	6.30754
	B2->X (RR)	0.07925	0.59897	6.30265
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.09735	0.54707	6.36805
	A2->X (RR)	0.08947	0.53041	6.36070
	B1->X (RR)	0.08921	0.54993	6.36709
	B2->X (RR)	0.08008	0.52577	6.33257
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.10290	0.48749	6.44910
	A2->X (RR)	0.09774	0.46930	6.44765
	B1->X (RR)	0.09348	0.48640	6.43347
	B2->X (RR)	0.08956	0.47788	6.47075

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.15832	0.64298	4.86998
	A2->X (FF)	0.14382	0.63760	4.83995
	B1->X (FF)	0.12451	0.58551	4.73223
	B2->X (FF)	0.11015	0.57832	4.72346
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.19379	0.67120	5.03008
	A2->X (FF)	0.17854	0.67037	4.99708
	B1->X (FF)	0.15735	0.61383	4.87822
	B2->X (FF)	0.14119	0.61020	4.86249
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.18650	0.62898	4.96836
	A2->X (FF)	0.16691	0.62027	4.93250
	B1->X (FF)	0.15656	0.58103	4.85455
	B2->X (FF)	0.13853	0.57084	4.81339

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01160	0.01180	0.02347
	A1	0.00472	0.00492	0.01680
	A2	0.00998	0.01016	0.02744
	A2	0.00302	0.00325	0.02164
	B1	0.01024	0.01067	0.02392
	B1	0.00466	0.00510	0.01855
	B2	0.00906	0.00949	0.02782
	B2	0.00303	0.00363	0.02350
sky130_fd_sc_hs__o22a_2	A1	0.01446	0.01494	0.02634
	A1	0.00724	0.00774	0.01953
	A2	0.01274	0.01322	0.03007
	A2	0.00548	0.00604	0.02393
	B1	0.01300	0.01362	0.02593
	B1	0.00728	0.00792	0.02061
	B2	0.01133	0.01199	0.02871
	B2	0.00548	0.00627	0.02476
sky130_fd_sc_hs__o22a_4	A1	0.02872	0.02960	0.05255
	A1	0.01497	0.01586	0.03942
	A2	0.02205	0.02310	0.05801
	A2	0.01098	0.01210	0.04772
	B1	0.02616	0.02736	0.05373
	B1	0.01497	0.01624	0.04319
	B2	0.02229	0.02358	0.05792
	B2	0.01096	0.01257	0.04958

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00407	0.00430	0.01720
	A1	0.01085	0.01108	0.02316
	A2	0.00408	0.00499	0.02438
	A2	0.01002	0.01093	0.02973
	B1	0.00301	0.00323	0.01708
	B1	0.00867	0.00879	0.02198
	B2	0.00252	0.00372	0.02456
	B2	0.00762	0.00856	0.02815
sky130_fd_sc_hs__o22a_2	A1	0.00674	0.00698	0.02037
	A1	0.01384	0.01411	0.02608
	A2	0.00679	0.00781	0.02822
	A2	0.01299	0.01401	0.03282
	B1	0.00532	0.00556	0.01938
	B1	0.01107	0.01128	0.02368
	B2	0.00528	0.00640	0.02531
	B2	0.01011	0.01123	0.03011
sky130_fd_sc_hs__o22a_4	A1	0.01270	0.01337	0.03825
	A1	0.02640	0.02704	0.05045
	A2	0.01309	0.01501	0.05249
	A2	0.02461	0.02652	0.06348
	B1	0.01074	0.01119	0.03785
	B1	0.02202	0.02246	0.04740
	B2	0.01116	0.01328	0.05233
	B2	0.02038	0.02237	0.05955

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00151	0.00131	0.00128
	(A2 * B2 * X)	-0.00141	-0.00164	-0.00165
	(A2 * B1 * !B2 * X)	0.00151	0.00131	0.00128
	(A2 * B1 * !B2 * X)	-0.00141	-0.00164	-0.00165
	(A2 * !B1 * !B2 * !X)	0.00127	0.00129	0.00127
	(A2 * !B1 * !B2 * !X)	-0.00163	-0.00166	-0.00165
	(!A2 * !B1 * !B2 * !X)	0.00118	0.00120	0.00119
	(!A2 * !B1 * !B2 * !X)	-0.00166	-0.00168	-0.00167
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00173	0.00153	0.00150
	(A2 * B2 * X)	-0.00139	-0.00162	-0.00163
	(A2 * B1 * !B2 * X)	0.00173	0.00153	0.00150
	(A2 * B1 * !B2 * X)	-0.00139	-0.00162	-0.00163
	(A2 * !B1 * !B2 * !X)	0.00150	0.00152	0.00150
	(A2 * !B1 * !B2 * !X)	-0.00160	-0.00164	-0.00163
	(!A2 * !B1 * !B2 * !X)	0.00141	0.00144	0.00142
	(!A2 * !B1 * !B2 * !X)	-0.00164	-0.00165	-0.00164
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00329	0.00292	0.00286
	(A2 * B2 * X)	-0.00267	-0.00315	-0.00316
	(A2 * B1 * !B2 * X)	0.00330	0.00292	0.00286
	(A2 * B1 * !B2 * X)	-0.00267	-0.00315	-0.00316
	(A2 * !B1 * !B2 * !X)	0.00277	0.00282	0.00278
	(A2 * !B1 * !B2 * !X)	-0.00315	-0.00325	-0.00322
	(!A2 * !B1 * !B2 * !X)	0.00266	0.00268	0.00267
	(!A2 * !B1 * !B2 * !X)	-0.00327	-0.00328	-0.00327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00127	-0.00127	-0.00126
	(A2 * B2 * X)	0.00165	0.00167	0.00166
	(A2 * B1 * !B2 * X)	-0.00127	-0.00127	-0.00126
	(A2 * B1 * !B2 * X)	0.00165	0.00167	0.00166
	(A2 * !B1 * !B2 * !X)	-0.00127	-0.00127	-0.00127
	(A2 * !B1 * !B2 * !X)	0.00165	0.00166	0.00165
	(!A2 * !B1 * !B2 * !X)	-0.00111	-0.00120	-0.00119
	(!A2 * !B1 * !B2 * !X)	0.00170	0.00169	0.00167
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00149	-0.00150	-0.00149
	(A2 * B2 * X)	0.00164	0.00165	0.00164
	(A2 * B1 * !B2 * X)	-0.00149	-0.00150	-0.00149
	(A2 * B1 * !B2 * X)	0.00164	0.00165	0.00164
	(A2 * !B1 * !B2 * !X)	-0.00150	-0.00150	-0.00149
	(A2 * !B1 * !B2 * !X)	0.00163	0.00164	0.00163
	(!A2 * !B1 * !B2 * !X)	-0.00135	-0.00144	-0.00142
	(!A2 * !B1 * !B2 * !X)	0.00166	0.00167	0.00165
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00285	-0.00286	-0.00284
	(A2 * B2 * X)	0.00315	0.00318	0.00316
	(A2 * B1 * !B2 * X)	-0.00285	-0.00286	-0.00284
	(A2 * B1 * !B2 * X)	0.00315	0.00318	0.00316
	(A2 * !B1 * !B2 * !X)	-0.00277	-0.00279	-0.00278
	(A2 * !B1 * !B2 * !X)	0.00322	0.00325	0.00322
	(!A2 * !B1 * !B2 * !X)	-0.00248	-0.00268	-0.00267
	(!A2 * !B1 * !B2 * !X)	0.00330	0.00332	0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00142	0.00144	0.00142
	(A1 * B2 * X)	-0.00082	-0.00083	-0.00081
	(A1 * B1 * !B2 * X)	0.00141	0.00144	0.00142
	(A1 * B1 * !B2 * X)	-0.00081	-0.00083	-0.00081
	(A1 * !B1 * !B2 * !X)	0.00123	0.00124	0.00123
	(A1 * !B1 * !B2 * !X)	-0.00162	-0.00165	-0.00164
	(!A1 * !B1 * !B2 * !X)	0.00116	0.00116	0.00115
	(!A1 * !B1 * !B2 * !X)	-0.00167	-0.00167	-0.00167
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00154	0.00157	0.00154
	(A1 * B2 * X)	-0.00082	-0.00084	-0.00082
	(A1 * B1 * !B2 * X)	0.00154	0.00157	0.00154
	(A1 * B1 * !B2 * X)	-0.00082	-0.00084	-0.00082
	(A1 * !B1 * !B2 * !X)	0.00143	0.00144	0.00144
	(A1 * !B1 * !B2 * !X)	-0.00155	-0.00158	-0.00157
	(!A1 * !B1 * !B2 * !X)	0.00137	0.00137	0.00137
	(!A1 * !B1 * !B2 * !X)	-0.00160	-0.00160	-0.00159
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00267	0.00271	0.00267
	(A1 * B2 * X)	-0.00162	-0.00165	-0.00162
	(A1 * B1 * !B2 * X)	0.00267	0.00271	0.00267
	(A1 * B1 * !B2 * X)	-0.00163	-0.00165	-0.00162
	(A1 * !B1 * !B2 * !X)	0.00238	0.00240	0.00238
	(A1 * !B1 * !B2 * !X)	-0.00315	-0.00322	-0.00321
	(!A1 * !B1 * !B2 * !X)	0.00224	0.00225	0.00223
	(!A1 * !B1 * !B2 * !X)	-0.00328	-0.00329	-0.00327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00136	-0.00137	-0.00141
	(A1 * B2 * X)	0.00086	0.00087	0.00083
	(A1 * B1 * !B2 * X)	-0.00136	-0.00137	-0.00141
	(A1 * B1 * !B2 * X)	0.00087	0.00087	0.00083
	(A1 * !B1 * !B2 * !X)	-0.00123	-0.00124	-0.00123
	(A1 * !B1 * !B2 * !X)	0.00163	0.00165	0.00164
	(!A1 * !B1 * !B2 * !X)	-0.00108	-0.00116	-0.00115
	(!A1 * !B1 * !B2 * !X)	0.00169	0.00169	0.00167
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00149	-0.00150	-0.00153
	(A1 * B2 * X)	0.00088	0.00088	0.00084
	(A1 * B1 * !B2 * X)	-0.00149	-0.00149	-0.00153
	(A1 * B1 * !B2 * X)	0.00088	0.00088	0.00084
	(A1 * !B1 * !B2 * !X)	-0.00143	-0.00144	-0.00143
	(A1 * !B1 * !B2 * !X)	0.00157	0.00158	0.00157
	(!A1 * !B1 * !B2 * !X)	-0.00128	-0.00137	-0.00137
	(!A1 * !B1 * !B2 * !X)	0.00161	0.00162	0.00160
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00254	-0.00256	-0.00266
	(A1 * B2 * X)	0.00174	0.00174	0.00165
	(A1 * B1 * !B2 * X)	-0.00255	-0.00256	-0.00265
	(A1 * B1 * !B2 * X)	0.00174	0.00174	0.00165
	(A1 * !B1 * !B2 * !X)	-0.00238	-0.00239	-0.00237
	(A1 * !B1 * !B2 * !X)	0.00321	0.00322	0.00321
	(!A1 * !B1 * !B2 * !X)	-0.00208	-0.00225	-0.00223
	(!A1 * !B1 * !B2 * !X)	0.00332	0.00332	0.00328

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00159	0.00139	0.00136
	(A2 * B2 * X)	-0.00144	-0.00167	-0.00168
	(A1 * !A2 * B2 * X)	0.00159	0.00139	0.00136
	(A1 * !A2 * B2 * X)	-0.00144	-0.00167	-0.00168
	(!A1 * !A2 * B2 * !X)	0.00039	0.00040	0.00039
	(!A1 * !A2 * B2 * !X)	-0.00205	-0.00209	-0.00207
	(!A1 * !A2 * !B2 * !X)	0.00044	0.00045	0.00041
	(!A1 * !A2 * !B2 * !X)	-0.00200	-0.00202	-0.00209
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00181	0.00161	0.00158
	(A2 * B2 * X)	-0.00134	-0.00156	-0.00158
	(A1 * !A2 * B2 * X)	0.00181	0.00161	0.00158
	(A1 * !A2 * B2 * X)	-0.00133	-0.00156	-0.00158
	(!A1 * !A2 * B2 * !X)	0.00047	0.00048	0.00047
	(!A1 * !A2 * B2 * !X)	-0.00199	-0.00203	-0.00202
	(!A1 * !A2 * !B2 * !X)	0.00055	0.00055	0.00050
	(!A1 * !A2 * !B2 * !X)	-0.00195	-0.00195	-0.00203
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00346	0.00307	0.00301
	(A2 * B2 * X)	-0.00264	-0.00314	-0.00315
	(A1 * !A2 * B2 * X)	0.00346	0.00306	0.00301
	(A1 * !A2 * B2 * X)	-0.00264	-0.00314	-0.00314
	(!A1 * !A2 * B2 * !X)	0.00122	0.00124	0.00122
	(!A1 * !A2 * B2 * !X)	-0.00368	-0.00378	-0.00374
	(!A1 * !A2 * !B2 * !X)	0.00132	0.00134	0.00126
	(!A1 * !A2 * !B2 * !X)	-0.00363	-0.00367	-0.00378

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00135	-0.00135	-0.00134
	(A2 * B2 * X)	0.00168	0.00170	0.00169
	(A1 * !A2 * B2 * X)	-0.00135	-0.00135	-0.00134
	(A1 * !A2 * B2 * X)	0.00168	0.00170	0.00169
	(!A1 * !A2 * B2 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * B2 * !X)	0.00207	0.00209	0.00207
	(!A1 * !A2 * !B2 * !X)	-0.00040	-0.00040	-0.00039
	(!A1 * !A2 * !B2 * !X)	0.00211	0.00213	0.00210
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00157	-0.00157	-0.00156
	(A2 * B2 * X)	0.00158	0.00159	0.00158
	(A1 * !A2 * B2 * X)	-0.00157	-0.00157	-0.00156
	(A1 * !A2 * B2 * X)	0.00158	0.00159	0.00158
	(!A1 * !A2 * B2 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * B2 * !X)	0.00202	0.00203	0.00202
	(!A1 * !A2 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(!A1 * !A2 * !B2 * !X)	0.00205	0.00207	0.00204
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00299	-0.00300	-0.00298
	(A2 * B2 * X)	0.00313	0.00316	0.00315
	(A1 * !A2 * B2 * X)	-0.00299	-0.00300	-0.00298
	(A1 * !A2 * B2 * X)	0.00313	0.00316	0.00315
	(!A1 * !A2 * B2 * !X)	-0.00120	-0.00122	-0.00122
	(!A1 * !A2 * B2 * !X)	0.00374	0.00379	0.00374
	(!A1 * !A2 * !B2 * !X)	-0.00123	-0.00124	-0.00123
	(!A1 * !A2 * !B2 * !X)	0.00379	0.00382	0.00380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00183	0.00186	0.00183
	(A2 * B1 * X)	-0.00079	-0.00081	-0.00079
	(A1 * !A2 * B1 * X)	0.00183	0.00183	0.00183
	(A1 * !A2 * B1 * X)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * B1 * !X)	0.00080	0.00079	0.00079
	(!A1 * !A2 * B1 * !X)	-0.00183	-0.00185	-0.00185
	(!A1 * !A2 * !B1 * !X)	0.00085	0.00086	0.00081
	(!A1 * !A2 * !B1 * !X)	-0.00179	-0.00181	-0.00187
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00158	0.00161	0.00158
	(A2 * B1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * !A2 * B1 * X)	0.00158	0.00161	0.00158
	(A1 * !A2 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * !A2 * B1 * !X)	0.00046	0.00046	0.00046
	(!A1 * !A2 * B1 * !X)	-0.00188	-0.00192	-0.00191
	(!A1 * !A2 * !B1 * !X)	0.00054	0.00054	0.00048
	(!A1 * !A2 * !B1 * !X)	-0.00184	-0.00185	-0.00193
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00281	0.00286	0.00282
	(A2 * B1 * X)	-0.00160	-0.00164	-0.00161
	(A1 * !A2 * B1 * X)	0.00281	0.00286	0.00282
	(A1 * !A2 * B1 * X)	-0.00161	-0.00164	-0.00161
	(!A1 * !A2 * B1 * !X)	0.00073	0.00073	0.00073
	(!A1 * !A2 * B1 * !X)	-0.00375	-0.00383	-0.00381
	(!A1 * !A2 * !B1 * !X)	0.00084	0.00084	0.00077
	(!A1 * !A2 * !B1 * !X)	-0.00373	-0.00375	-0.00386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00178	-0.00178	-0.00182
	(A2 * B1 * X)	0.00083	0.00083	0.00080
	(A1 * !A2 * B1 * X)	-0.00177	-0.00179	-0.00182
	(A1 * !A2 * B1 * X)	0.00083	0.00084	0.00080
	(!A1 * !A2 * B1 * !X)	-0.00078	-0.00078	-0.00079
	(!A1 * !A2 * B1 * !X)	0.00187	0.00188	0.00185
	(!A1 * !A2 * !B1 * !X)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * !B1 * !X)	0.00187	0.00188	0.00188
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00153	-0.00154	-0.00158
	(A2 * B1 * X)	0.00085	0.00085	0.00081
	(A1 * !A2 * B1 * X)	-0.00153	-0.00153	-0.00158
	(A1 * !A2 * B1 * X)	0.00085	0.00084	0.00081
	(!A1 * !A2 * B1 * !X)	-0.00045	-0.00046	-0.00046
	(!A1 * !A2 * B1 * !X)	0.00191	0.00192	0.00191
	(!A1 * !A2 * !B1 * !X)	-0.00047	-0.00047	-0.00046
	(!A1 * !A2 * !B1 * !X)	0.00194	0.00196	0.00194
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00270	-0.00272	-0.00281
	(A2 * B1 * X)	0.00172	0.00173	0.00164
	(A1 * !A2 * B1 * X)	-0.00270	-0.00270	-0.00281
	(A1 * !A2 * B1 * X)	0.00173	0.00171	0.00164
	(!A1 * !A2 * B1 * !X)	-0.00071	-0.00073	-0.00072
	(!A1 * !A2 * B1 * !X)	0.00383	0.00385	0.00381
	(!A1 * !A2 * !B1 * !X)	-0.00075	-0.00076	-0.00073
	(!A1 * !A2 * !B1 * !X)	0.00388	0.00393	0.00388

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00225	0.00245	0.00273	0.00289	0.53208
sky130_fd_sc_hs__o2bb2ai_2	0.00511	0.00450	0.00556	0.00517	1.04514
sky130_fd_sc_hs__o2bb2ai_4	0.01056	0.01065	0.01037	0.01066	1.82029

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.19785	0.59219
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.39569	1.18438
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.30724	0.44783

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)	0.07198	0.41730	2.98446
	A2_N->Y (RR)	0.06891	0.41217	2.95880
	B1->Y (FR)	0.09838	0.98931	10.78670
	B2->Y (FR)	0.08426	0.98002	10.93330
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.06474	0.34120	2.95372
	A2_N->Y (RR)	0.05995	0.33282	2.96380
	B1->Y (FR)	0.08755	0.83887	10.73290
	B2->Y (FR)	0.06977	0.82922	10.87090
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.07085	0.29087	2.68782
	A2_N->Y (RR)	0.06587	0.29095	2.72354
	B1->Y (FR)	0.09486	0.74694	10.61100
	B2->Y (FR)	0.07558	0.74435	10.89420

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)	0.10141	0.53467	3.96896
	A2_N->Y (FF)	0.09013	0.50563	3.92148
	B1->Y (RF)	0.03925	0.40773	4.39138
	B2->Y (RF)	0.03208	0.39346	4.33640
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.08630	0.47474	3.96510
	A2_N->Y (FF)	0.08069	0.45631	3.97328
	B1->Y (RF)	0.03424	0.34048	4.30218
	B2->Y (RF)	0.02909	0.33171	4.32041
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.09422	0.46722	4.17607
	A2_N->Y (FF)	0.08129	0.43159	4.07494
	B1->Y (RF)	0.03927	0.29894	4.24071
	B2->Y (RF)	0.02970	0.28022	4.14656

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	0.00751	0.00817	0.03222
	A1_N	0.00444	0.00514	0.02925
	A2_N	0.00675	0.00759	0.03012
	A2_N	0.00445	0.00533	0.02794
	B1	0.00053	0.00042	0.00262
	B1	0.00544	0.00535	0.00759
	B2	0.00051	0.00083	0.00543
	B2	0.00458	0.00493	0.00954
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01393	0.01509	0.05908
	A1_N	0.00716	0.00835	0.05232
	A2_N	0.01198	0.01384	0.06422
	A2_N	0.00746	0.00935	0.05966
	B1	0.00074	0.00051	0.00503
	B1	0.01057	0.01037	0.01499
	B2	0.00073	0.00120	0.01037
	B2	0.00822	0.00871	0.01792
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.03045	0.03198	0.11101
	A1_N	0.01563	0.01727	0.09637
	A2_N	0.02627	0.02878	0.10990
	A2_N	0.01552	0.01811	0.09948
	B1	0.00102	0.00059	0.00943
	B1	0.02070	0.02021	0.02927
	B2	0.00084	0.00264	0.01995
	B2	0.01663	0.01817	0.03580

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00580	0.00721	0.03237
	A1_N	0.00890	0.01028	0.03524
	A2_N	0.00542	0.00686	0.03250
	A2_N	0.00780	0.00923	0.03473
	B1	0.00713	0.00707	0.00894
	B1	0.00218	0.00209	0.00388
	B2	0.00535	0.00535	0.00724
	B2	0.00121	0.00121	0.00298
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01059	0.01336	0.06222
	A1_N	0.01742	0.02006	0.06881
	A2_N	0.00995	0.01270	0.06288
	A2_N	0.01448	0.01724	0.06724
	B1	0.01391	0.01371	0.01743
	B1	0.00404	0.00379	0.00739
	B2	0.00971	0.00974	0.01359
	B2	0.00211	0.00215	0.00575
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02310	0.02784	0.11088
	A1_N	0.03806	0.04274	0.12503
	A2_N	0.02063	0.02499	0.10987
	A2_N	0.03163	0.03599	0.12059
	B1	0.02883	0.02835	0.03577
	B1	0.00913	0.00858	0.01609
	B2	0.02039	0.02037	0.02867
	B2	0.00440	0.00441	0.01199

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)	0.00647	0.00697	0.03119
	(A2_N * !B1 * !B2 * Y)	0.00221	0.00268	0.02692
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00124	0.00125	0.00124
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00141	-0.00141	-0.00141
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.01264	0.01354	0.06170
	(A2_N * !B1 * !B2 * Y)	0.00349	0.00436	0.05252
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00242	0.00245	0.00244
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00336	-0.00339	-0.00338
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.02773	0.02846	0.10819
	(A2_N * !B1 * !B2 * Y)	0.00789	0.00855	0.08832
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00546	0.00552	0.00548
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00722	-0.00726	-0.00723

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)	0.00048	0.00172	0.02662
	(A2_N * !B1 * !B2 * Y)	0.00478	0.00602	0.03089
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00117	-0.00124	-0.00124
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00148	0.00143	0.00141
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00075	0.00313	0.05249
	(A2_N * !B1 * !B2 * Y)	0.00999	0.01236	0.06162
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00228	-0.00245	-0.00244
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00348	0.00343	0.00339
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00197	0.00539	0.08800
	(A2_N * !B1 * !B2 * Y)	0.02194	0.02543	0.10786
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00509	-0.00551	-0.00548
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00748	0.00734	0.00726

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)	0.00577	0.00654	0.03264
	(A1_N * !B1 * !B2 * Y)	0.00221	0.00297	0.02907
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00044	0.00044	0.00043
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00174	-0.00174	-0.00176
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.01074	0.01227	0.06236
	(A1_N * !B1 * !B2 * Y)	0.00381	0.00531	0.05542
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00083	0.00083	0.00080
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00325	-0.00327	-0.00332
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.02376	0.02558	0.11004
	(A1_N * !B1 * !B2 * Y)	0.00777	0.00954	0.09403
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00190	0.00190	0.00181
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00835	-0.00838	-0.00851

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)	0.00012	0.00134	0.02756
	(A1_N * !B1 * !B2 * Y)	0.00370	0.00495	0.03115
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00042	-0.00042	-0.00042
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00176	0.00176	0.00176
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	-0.00002	0.00264	0.05248
	(A1_N * !B1 * !B2 * Y)	0.00696	0.00964	0.05945
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00079	-0.00079	-0.00078
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00334	0.00338	0.00333
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00058	0.00275	0.08846
	(A1_N * !B1 * !B2 * Y)	0.01548	0.01887	0.10453
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00174	-0.00176	-0.00175
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00849	0.00856	0.00854

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)	0.00150	0.00152	0.00150
	(A1_N * A2_N * B2 * Y)	-0.00176	-0.00180	-0.00180
	(A1_N * A2_N * !B2 * Y)	0.00144	0.00146	0.00145
	(A1_N * A2_N * !B2 * Y)	-0.00180	-0.00181	-0.00181
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00173	0.00153	0.00150
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00155	-0.00178	-0.00179
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00299	0.00302	0.00298
	(A1_N * A2_N * B2 * Y)	-0.00359	-0.00367	-0.00367
	(A1_N * A2_N * !B2 * Y)	0.00289	0.00293	0.00290
	(A1_N * A2_N * !B2 * Y)	-0.00369	-0.00372	-0.00370
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00350	0.00308	0.00302
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00311	-0.00361	-0.00363
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00576	0.00583	0.00576
	(A1_N * A2_N * B2 * Y)	-0.00698	-0.00718	-0.00713
	(A1_N * A2_N * !B2 * Y)	0.00553	0.00557	0.00554
	(A1_N * A2_N * !B2 * Y)	-0.00723	-0.00726	-0.00724
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00684	0.00590	0.00576
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00597	-0.00712	-0.00715

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)	-0.00149	-0.00149	-0.00149
	(A1_N * A2_N * B2 * Y)	0.00180	0.00181	0.00180
	(A1_N * A2_N * !B2 * Y)	-0.00138	-0.00144	-0.00145
	(A1_N * A2_N * !B2 * Y)	0.00183	0.00182	0.00182
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00150	-0.00150	-0.00149
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00179	0.00181	0.00179
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00295	-0.00296	-0.00296
	(A1_N * A2_N * B2 * Y)	0.00365	0.00368	0.00367
	(A1_N * A2_N * !B2 * Y)	-0.00276	-0.00287	-0.00289
	(A1_N * A2_N * !B2 * Y)	0.00375	0.00372	0.00373
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00301	-0.00300	-0.00300
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00362	0.00362	0.00363
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00572	-0.00576	-0.00574
	(A1_N * A2_N * B2 * Y)	0.00708	0.00718	0.00713
	(A1_N * A2_N * !B2 * Y)	-0.00526	-0.00557	-0.00554
	(A1_N * A2_N * !B2 * Y)	0.00734	0.00735	0.00727
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00574	-0.00575	-0.00572
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00714	0.00717	0.00715

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)	0.00156	0.00156	0.00156
	(A1_N * A2_N * B1 * Y)	-0.00177	-0.00180	-0.00181
	(A1_N * A2_N * !B1 * Y)	0.00150	0.00151	0.00150
	(A1_N * A2_N * !B1 * Y)	-0.00182	-0.00183	-0.00182
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00166	0.00169	0.00167
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00096	-0.00097	-0.00096
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00277	0.00281	0.00279
	(A1_N * A2_N * B1 * Y)	-0.00333	-0.00342	-0.00342
	(A1_N * A2_N * !B1 * Y)	0.00270	0.00273	0.00270
	(A1_N * A2_N * !B1 * Y)	-0.00346	-0.00348	-0.00346
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00301	0.00307	0.00302
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00170	-0.00173	-0.00170
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00580	0.00578	0.00576
	(A1_N * A2_N * B1 * Y)	-0.00708	-0.00721	-0.00718
	(A1_N * A2_N * !B1 * Y)	0.00559	0.00563	0.00558
	(A1_N * A2_N * !B1 * Y)	-0.00732	-0.00734	-0.00730
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00654	0.00663	0.00652
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00353	-0.00355	-0.00349

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)	-0.00154	-0.00156	-0.00155
	(A1_N * A2_N * B1 * Y)	0.00180	0.00182	0.00181
	(A1_N * A2_N * !B1 * Y)	-0.00143	-0.00150	-0.00150
	(A1_N * A2_N * !B1 * Y)	0.00184	0.00183	0.00184
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00160	-0.00162	-0.00166
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00101	0.00102	0.00097
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00276	-0.00277	-0.00276
	(A1_N * A2_N * B1 * Y)	0.00341	0.00344	0.00342
	(A1_N * A2_N * !B1 * Y)	-0.00257	-0.00269	-0.00270
	(A1_N * A2_N * !B1 * Y)	0.00349	0.00352	0.00349
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00287	-0.00290	-0.00300
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00181	0.00183	0.00173
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00575	-0.00577	-0.00574
	(A1_N * A2_N * B1 * Y)	0.00718	0.00721	0.00718
	(A1_N * A2_N * !B1 * Y)	-0.00526	-0.00559	-0.00558
	(A1_N * A2_N * !B1 * Y)	0.00740	0.00745	0.00733
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00619	-0.00626	-0.00648
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00375	0.00379	0.00357

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00225	0.00239	0.00242	0.00262	1.06453
sky130_fd_sc_hs__o2bb2a_2	0.00226	0.00248	0.00259	0.00268	1.99813
sky130_fd_sc_hs__o2bb2a_4	0.00224	0.00241	0.00483	0.00477	4.01877

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.38156	0.64732
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.31810	0.69796
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.66585	0.88854

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)	0.14507	0.81316	8.26002
	A2_N->X (FR)	0.13426	0.78303	8.14752
	B1->X (RR)	0.08813	0.60903	6.26237
	B2->X (RR)	0.07866	0.58701	6.26285
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.15809	0.74408	8.37359
	A2_N->X (FR)	0.14520	0.71267	8.24626
	B1->X (RR)	0.09150	0.53237	6.32911
	B2->X (RR)	0.08125	0.51344	6.31658
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.18475	0.71302	8.49352
	A2_N->X (FR)	0.17292	0.68604	8.40019
	B1->X (RR)	0.10425	0.47429	6.44991
	B2->X (RR)	0.09089	0.44783	6.42703

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)	0.11365	0.35816	2.15482
	A2_N->X (RF)	0.11077	0.35353	2.17839
	B1->X (FF)	0.14998	0.60614	4.69047
	B2->X (FF)	0.13719	0.59823	4.64292
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.12958	0.34493	2.07058
	A2_N->X (RF)	0.12701	0.34012	2.07606
	B1->X (FF)	0.18647	0.63922	4.77975
	B2->X (FF)	0.17257	0.63688	4.73883
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.14448	0.36654	2.37296
	A2_N->X (RF)	0.14177	0.36553	2.37786
	B1->X (FF)	0.19008	0.61485	4.91570
	B2->X (FF)	0.16808	0.60219	4.87298

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	0.00846	0.00998	0.03585
	A1_N	0.01145	0.01301	0.03890
	A2_N	0.00804	0.00969	0.03655
	A2_N	0.01024	0.01190	0.03883
	B1	0.00956	0.00982	0.02209
	B1	0.00499	0.00525	0.01779
	B2	0.00807	0.00836	0.02656
	B2	0.00416	0.00444	0.02291
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01149	0.01328	0.03878
	A1_N	0.01456	0.01634	0.04425
	A2_N	0.01090	0.01287	0.03889
	A2_N	0.01323	0.01522	0.04136
	B1	0.01269	0.01321	0.02518
	B1	0.00779	0.00834	0.02070
	B2	0.01112	0.01166	0.02933
	B2	0.00695	0.00751	0.02557
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02230	0.02462	0.05093
	A1_N	0.02416	0.02648	0.05303
	A2_N	0.02182	0.02421	0.05059
	A2_N	0.02288	0.02534	0.05687
	B1	0.02493	0.02577	0.04917
	B1	0.01568	0.01665	0.04052
	B2	0.02065	0.02168	0.05544
	B2	0.01325	0.01436	0.04868

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.01063	0.01112	0.03515
	A1_N	0.00766	0.00812	0.03212
	A2_N	0.00978	0.01066	0.03744
	A2_N	0.00765	0.00845	0.03503
	B1	0.00397	0.00427	0.01683
	B1	0.00851	0.00880	0.02104
	B2	0.00395	0.00494	0.02415
	B2	0.00781	0.00879	0.02777
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01338	0.01413	0.03726
	A1_N	0.01037	0.01108	0.03390
	A2_N	0.01259	0.01354	0.03926
	A2_N	0.01036	0.01123	0.03659
	B1	0.00650	0.00687	0.01964
	B1	0.01134	0.01170	0.02385
	B2	0.00650	0.00797	0.02715
	B2	0.01060	0.01205	0.03075
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02048	0.02179	0.04542
	A1_N	0.01879	0.02003	0.04266
	A2_N	0.01972	0.02132	0.04769
	A2_N	0.01879	0.02027	0.04589
	B1	0.01244	0.01302	0.03847
	B1	0.02164	0.02219	0.04505
	B2	0.01250	0.01459	0.05206
	B2	0.01980	0.02174	0.05752

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)	0.00582	0.00638	0.03088
	(A2_N * !B1 * !B2 * !X)	0.00160	0.00213	0.02665
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00131	0.00132	0.00131
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00136	-0.00137	-0.00136
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00616	0.00668	0.03061
	(A2_N * !B1 * !B2 * !X)	0.00182	0.00231	0.02626
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00137	0.00139	0.00138
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00133	-0.00134	-0.00134
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00734	0.00771	0.03100
	(A2_N * !B1 * !B2 * !X)	0.00298	0.00334	0.02665
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00137	0.00138	0.00137
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00131	-0.00131	-0.00131

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)	0.00048	0.00177	0.02689
	(A2_N * !B1 * !B2 * !X)	0.00475	0.00604	0.03111
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00122	-0.00130	-0.00131
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00143	0.00139	0.00138
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00050	0.00172	0.02628
	(A2_N * !B1 * !B2 * !X)	0.00489	0.00611	0.03064
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00129	-0.00138	-0.00138
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00139	0.00136	0.00134
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00103	0.00215	0.02630
	(A2_N * !B1 * !B2 * !X)	0.00543	0.00656	0.03066
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00128	-0.00137	-0.00137
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00137	0.00134	0.00132

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)	0.00517	0.00600	0.03230
	(A1_N * !B1 * !B2 * !X)	0.00173	0.00255	0.02885
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00041	0.00041	0.00040
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00171	-0.00171	-0.00174
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00559	0.00632	0.03203
	(A1_N * !B1 * !B2 * !X)	0.00195	0.00267	0.02840
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00049	0.00049	0.00047
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00174	-0.00174	-0.00176
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00672	0.00731	0.03239
	(A1_N * !B1 * !B2 * !X)	0.00315	0.00372	0.02881
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00044	0.00044	0.00043
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00169	-0.00170	-0.00172

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)	0.00006	0.00135	0.02775
	(A1_N * !B1 * !B2 * !X)	0.00353	0.00483	0.03122
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00174	0.00174	0.00174
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00003	0.00124	0.02705
	(A1_N * !B1 * !B2 * !X)	0.00369	0.00491	0.03070
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00046	-0.00046	-0.00046
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00176	0.00177	0.00177
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00064	0.00167	0.02693
	(A1_N * !B1 * !B2 * !X)	0.00426	0.00530	0.03054
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00041	-0.00041	-0.00041
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00173	0.00172	0.00173

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)	0.00131	0.00133	0.00131
	(A1_N * A2_N * B2 * !X)	-0.00158	-0.00161	-0.00161
	(A1_N * A2_N * !B2 * !X)	0.00126	0.00128	0.00127
	(A1_N * A2_N * !B2 * !X)	-0.00161	-0.00162	-0.00161
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00155	0.00135	0.00131
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00136	-0.00159	-0.00160
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00148	0.00150	0.00148
	(A1_N * A2_N * B2 * !X)	-0.00162	-0.00165	-0.00165
	(A1_N * A2_N * !B2 * !X)	0.00143	0.00145	0.00143
	(A1_N * A2_N * !B2 * !X)	-0.00165	-0.00167	-0.00166
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00172	0.00152	0.00148
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00141	-0.00163	-0.00165
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00263	0.00267	0.00264
	(A1_N * A2_N * B2 * !X)	-0.00319	-0.00330	-0.00329
	(A1_N * A2_N * !B2 * !X)	0.00253	0.00257	0.00254
	(A1_N * A2_N * !B2 * !X)	-0.00332	-0.00335	-0.00333
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00320	0.00272	0.00265
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00268	-0.00325	-0.00329

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)	-0.00130	-0.00130	-0.00130
	(A1_N * A2_N * B2 * !X)	0.00161	0.00162	0.00161
	(A1_N * A2_N * !B2 * !X)	-0.00120	-0.00126	-0.00127
	(A1_N * A2_N * !B2 * !X)	0.00164	0.00164	0.00163
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00130	-0.00130	-0.00129
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00161	0.00161	0.00161
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00147	-0.00147	-0.00147
	(A1_N * A2_N * B2 * !X)	0.00165	0.00166	0.00165
	(A1_N * A2_N * !B2 * !X)	-0.00136	-0.00143	-0.00143
	(A1_N * A2_N * !B2 * !X)	0.00168	0.00169	0.00167
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00146	-0.00147	-0.00146
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00164	0.00167	0.00166
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00261	-0.00263	-0.00262
	(A1_N * A2_N * B2 * !X)	0.00327	0.00330	0.00329
	(A1_N * A2_N * !B2 * !X)	-0.00241	-0.00253	-0.00254
	(A1_N * A2_N * !B2 * !X)	0.00343	0.00336	0.00336
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00262	-0.00263	-0.00261
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00327	0.00331	0.00330

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)	0.00140	0.00141	0.00140
	(A1_N * A2_N * B1 * !X)	-0.00161	-0.00164	-0.00164
	(A1_N * A2_N * !B1 * !X)	0.00134	0.00137	0.00135
	(A1_N * A2_N * !B1 * !X)	-0.00164	-0.00166	-0.00165
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00149	0.00152	0.00149
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00089	-0.00090	-0.00089
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00158	0.00159	0.00159
	(A1_N * A2_N * B1 * !X)	-0.00157	-0.00160	-0.00160
	(A1_N * A2_N * !B1 * !X)	0.00155	0.00155	0.00154
	(A1_N * A2_N * !B1 * !X)	-0.00161	-0.00161	-0.00161
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00158	0.00161	0.00158
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00095	-0.00097	-0.00095
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00255	0.00258	0.00256
	(A1_N * A2_N * B1 * !X)	-0.00317	-0.00327	-0.00326
	(A1_N * A2_N * !B1 * !X)	0.00247	0.00250	0.00247
	(A1_N * A2_N * !B1 * !X)	-0.00331	-0.00333	-0.00331
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00279	0.00284	0.00280
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00172	-0.00175	-0.00172

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)	-0.00139	-0.00139	-0.00139
	(A1_N * A2_N * B1 * !X)	0.00164	0.00164	0.00164
	(A1_N * A2_N * !B1 * !X)	-0.00129	-0.00134	-0.00135
	(A1_N * A2_N * !B1 * !X)	0.00169	0.00166	0.00166
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00144	-0.00145	-0.00148
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00094	0.00094	0.00090
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00158	-0.00159	-0.00157
	(A1_N * A2_N * B1 * !X)	0.00160	0.00161	0.00160
	(A1_N * A2_N * !B1 * !X)	-0.00147	-0.00154	-0.00154
	(A1_N * A2_N * !B1 * !X)	0.00163	0.00164	0.00163
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00153	-0.00154	-0.00157
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00100	0.00100	0.00096
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00253	-0.00256	-0.00254
	(A1_N * A2_N * B1 * !X)	0.00325	0.00328	0.00326
	(A1_N * A2_N * !B1 * !X)	-0.00233	-0.00245	-0.00247
	(A1_N * A2_N * !B1 * !X)	0.00336	0.00333	0.00333
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00262	-0.00264	-0.00277
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00189	0.00189	0.00177

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00266	0.00280	0.00273	0.00282	0.00289	0.35415
sky130_fd_sc_hs__o311ai_2	0.00519	0.00532	0.00540	0.00540	0.00548	0.61851
sky130_fd_sc_hs__o311ai_4	0.01022	0.01026	0.01076	0.00818	0.00774	1.18389

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.02955	0.15865
sky130_fd_sc_hs__o311ai_2	0.00000	0.05910	0.31729
sky130_fd_sc_hs__o311ai_4	0.00000	0.07192	0.42305

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)	0.21402	1.17894	10.38960
	A2->Y (FR)	0.20278	1.19612	10.90920
	A3->Y (FR)	0.16691	1.15247	10.86350
	B1->Y (FR)	0.04837	0.61472	6.58853
	C1->Y (FR)	0.03907	0.60431	6.57427
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.23509	1.05952	10.25260
	A2->Y (FR)	0.21563	1.06017	10.75960
	A3->Y (FR)	0.17775	1.02782	10.87570
	B1->Y (FR)	0.04735	0.55566	6.44426
	C1->Y (FR)	0.03737	0.54425	6.44905
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.20979	0.89787	10.11580
	A2->Y (FR)	0.19581	0.91817	10.79030
	A3->Y (FR)	0.15176	0.87296	10.81680
	B1->Y (FR)	0.06642	0.64761	8.35044
	C1->Y (FR)	0.04576	0.63410	8.42039

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.05838	0.39501	3.43968
	A2->Y (RF)	0.05833	0.39491	3.50422
	A3->Y (RF)	0.04704	0.37632	3.45444
	B1->Y (RF)	0.05043	0.43786	4.15556
	C1->Y (RF)	0.04335	0.45711	4.42027
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.06755	0.36469	3.43563
	A2->Y (RF)	0.06299	0.34921	3.39862
	A3->Y (RF)	0.05179	0.33113	3.35290
	B1->Y (RF)	0.05932	0.40653	4.14111
	C1->Y (RF)	0.05013	0.45126	4.75649
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.06814	0.31239	3.39010
	A2->Y (RF)	0.06206	0.29765	3.36174
	A3->Y (RF)	0.04742	0.27564	3.30448
	B1->Y (RF)	0.06001	0.40052	4.71168
	C1->Y (RF)	0.04670	0.42060	5.13911

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00127	0.00111	0.00332
	A1	0.00963	0.00940	0.01167
	A2	0.00136	0.00119	0.00353
	A2	0.00878	0.00859	0.01095
	A3	0.00134	0.00152	0.00646
	A3	0.00776	0.00795	0.01290
	B1	0.00013	0.00063	0.00762
	B1	0.00723	0.00766	0.01452
	C1	-0.00046	0.00006	0.00695
	C1	0.00580	0.00630	0.01306
sky130_fd_sc_hs__o311ai_2	A1	0.00301	0.00261	0.00678
	A1	0.01997	0.01960	0.02373
	A2	0.00304	0.00265	0.00741
	A2	0.01802	0.01765	0.02241
	A3	0.00301	0.00330	0.01251
	A3	0.01606	0.01636	0.02556
	B1	0.00039	0.00142	0.01493
	B1	0.01474	0.01574	0.02844
	C1	-0.00092	0.00022	0.01324
	C1	0.01154	0.01274	0.02562

sky130_fd_sc_hs__o311ai_4	**A1**	0.00428	0.00371	0.01163
	A1	0.03746	0.03669	0.04478
	A2	0.00448	0.00381	0.01244
	A2	0.03367	0.03302	0.04166
	A3	0.00448	0.00471	0.02182
	A3	0.03006	0.02994	0.04743
	B1	0.00046	0.00129	0.01534
	B1	0.02534	0.02550	0.03870
	C1	-0.00241	-0.00115	0.01280
	C1	0.01824	0.01957	0.03229

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.01129	0.01117	0.01311
	A1	0.00284	0.00268	0.00468
	A2	0.00963	0.00953	0.01145
	A2	0.00207	0.00194	0.00389
	A3	0.00763	0.00762	0.00966
	A3	0.00103	0.00101	0.00295
	B1	0.00997	0.00985	0.01223
	B1	0.00089	0.00081	0.00334
	C1	0.00908	0.00904	0.01204
	C1	0.00085	0.00086	0.00402

sky130_fd_sc_hs__o311ai_2	**A1**	0.02318	0.02274	0.02673
	A1	0.00605	0.00560	0.00952
	A2	0.01900	0.01876	0.02285
	A2	0.00367	0.00342	0.00736
	A3	0.01520	0.01512	0.01921
	A3	0.00175	0.00165	0.00558
	B1	0.02023	0.02000	0.02448
	B1	0.00150	0.00129	0.00657
	C1	0.01825	0.01818	0.02394
	C1	0.00141	0.00142	0.00758
sky130_fd_sc_hs__o311ai_4	**A1**	0.04240	0.04170	0.05021
	A1	0.00889	0.00812	0.01647
	A2	0.03526	0.03455	0.04332
	A2	0.00546	0.00472	0.01289
	A3	0.02659	0.02650	0.03477
	A3	0.00025	0.00013	0.00844
	B1	0.03574	0.03563	0.04031
	B1	0.00221	0.00207	0.00724
	C1	0.03143	0.03143	0.03813
	C1	0.00219	0.00228	0.00863

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)**	0.00148	0.00150	0.00148
	(A2 * B1 * !C1 * Y)	-0.00175	-0.00180	-0.00179
	(A2 * A3 * B1 * C1 * !Y)	0.00148	0.00150	0.00148
	(A2 * A3 * B1 * C1 * !Y)	-0.00175	-0.00180	-0.00179
	(A2 * !B1 * Y)	0.00148	0.00150	0.00148
	(A2 * !B1 * Y)	-0.00175	-0.00180	-0.00179
	(A2 * !A3 * B1 * C1 * !Y)	0.00151	0.00150	0.00148
	(A2 * !A3 * B1 * C1 * !Y)	-0.00170	-0.00180	-0.00179
	(!A2 * A3 * B1 * C1 * !Y)	0.00151	0.00149	0.00148
	(!A2 * A3 * B1 * C1 * !Y)	-0.00159	-0.00174	-0.00173
	(!A2 * A3 * B1 * !C1 * Y)	0.00148	0.00149	0.00148
	(!A2 * A3 * B1 * !C1 * Y)	-0.00161	-0.00174	-0.00173
	(!A2 * A3 * !B1 * Y)	0.00148	0.00149	0.00148
	(!A2 * A3 * !B1 * Y)	-0.00161	-0.00174	-0.00173
	(!A2 * !A3 * B1 * !C1 * Y)	0.00138	0.00139	0.00138
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00181	-0.00182	-0.00181
	(!A2 * !A3 * !B1 * C1 * Y)	0.00140	0.00141	0.00140
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00181	-0.00182	-0.00181
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00140	0.00141	0.00140
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00288	0.00292	0.00288
	(A2 * B1 * !C1 * Y)	-0.00344	-0.00359	-0.00355
	(A2 * A3 * B1 * C1 * !Y)	0.00290	0.00292	0.00288
	(A2 * A3 * B1 * C1 * !Y)	-0.00341	-0.00358	-0.00355
	(A2 * !B1 * Y)	0.00288	0.00292	0.00288
	(A2 * !B1 * Y)	-0.00344	-0.00359	-0.00355
	(A2 * !A3 * B1 * C1 * !Y)	0.00295	0.00292	0.00289
	(A2 * !A3 * B1 * C1 * !Y)	-0.00333	-0.00357	-0.00355
	(!A2 * A3 * B1 * C1 * !Y)	0.00296	0.00292	0.00289
	(!A2 * A3 * B1 * C1 * !Y)	-0.00311	-0.00346	-0.00342
	(!A2 * A3 * B1 * !C1 * Y)	0.00288	0.00291	0.00288
	(!A2 * A3 * B1 * !C1 * Y)	-0.00319	-0.00346	-0.00343
	(!A2 * A3 * !B1 * Y)	0.00288	0.00291	0.00288
	(!A2 * A3 * !B1 * Y)	-0.00319	-0.00346	-0.00343
	(!A2 * !A3 * B1 * !C1 * Y)	0.00271	0.00273	0.00270
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00363	-0.00364	-0.00362
	(!A2 * !A3 * !B1 * C1 * Y)	0.00272	0.00276	0.00274
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00361	-0.00364	-0.00362
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00272	0.00275	0.00274
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00361	-0.00364	-0.00362

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00573	0.00584	0.00576
	(A2 * B1 * !C1 * Y)	-0.00685	-0.00711	-0.00708
	(A2 * A3 * B1 * C1 * !Y)	0.00574	0.00584	0.00576
	(A2 * A3 * B1 * C1 * !Y)	-0.00683	-0.00713	-0.00708
	(A2 * !B1 * Y)	0.00573	0.00584	0.00576
	(A2 * !B1 * Y)	-0.00685	-0.00711	-0.00708
	(A2 * !A3 * B1 * C1 * !Y)	0.00585	0.00584	0.00577
	(A2 * !A3 * B1 * C1 * !Y)	-0.00669	-0.00711	-0.00709
	(!A2 * A3 * B1 * C1 * !Y)	0.00586	0.00584	0.00577
	(!A2 * A3 * B1 * C1 * !Y)	-0.00629	-0.00692	-0.00685
	(!A2 * A3 * B1 * !C1 * Y)	0.00574	0.00583	0.00576
	(!A2 * A3 * B1 * !C1 * Y)	-0.00639	-0.00692	-0.00685
	(!A2 * A3 * !B1 * Y)	0.00574	0.00583	0.00576
	(!A2 * A3 * !B1 * Y)	-0.00639	-0.00692	-0.00685
	(!A2 * !A3 * B1 * !C1 * Y)	0.00537	0.00545	0.00540
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00721	-0.00727	-0.00724
	(!A2 * !A3 * !B1 * C1 * Y)	0.00545	0.00551	0.00546
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00723	-0.00727	-0.00724
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00545	0.00551	0.00546
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00723	-0.00727	-0.00724

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)**	-0.00147	-0.00148	-0.00147
	(A2 * B1 * !C1 * Y)	0.00179	0.00180	0.00179
	(A2 * A3 * B1 * C1 * !Y)	-0.00147	-0.00148	-0.00147
	(A2 * A3 * B1 * C1 * !Y)	0.00179	0.00180	0.00179
	(A2 * !B1 * Y)	-0.00147	-0.00148	-0.00147
	(A2 * !B1 * Y)	0.00179	0.00180	0.00179
	(A2 * !A3 * B1 * C1 * !Y)	-0.00147	-0.00148	-0.00147
	(A2 * !A3 * B1 * C1 * !Y)	0.00179	0.00180	0.00179
	(!A2 * A3 * B1 * C1 * !Y)	-0.00147	-0.00148	-0.00147
	(!A2 * A3 * B1 * C1 * !Y)	0.00172	0.00174	0.00173
	(!A2 * A3 * B1 * !C1 * Y)	-0.00147	-0.00148	-0.00147
	(!A2 * A3 * B1 * !C1 * Y)	0.00172	0.00174	0.00173
	(!A2 * A3 * !B1 * Y)	-0.00147	-0.00148	-0.00147
	(!A2 * A3 * !B1 * Y)	0.00172	0.00174	0.00173
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00128	-0.00139	-0.00138
	(!A2 * !A3 * B1 * !C1 * Y)	0.00181	0.00183	0.00181
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00133	-0.00141	-0.00140
	(!A2 * !A3 * !B1 * C1 * Y)	0.00182	0.00183	0.00182
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00133	-0.00141	-0.00140
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00182	0.00183	0.00182

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00287	-0.00289	-0.00287
	(A2 * B1 * !C1 * Y)	0.00355	0.00359	0.00355
	(A2 * A3 * B1 * C1 * !Y)	-0.00288	-0.00289	-0.00288
	(A2 * A3 * B1 * C1 * !Y)	0.00354	0.00358	0.00355
	(A2 * !B1 * Y)	-0.00287	-0.00289	-0.00287
	(A2 * !B1 * Y)	0.00355	0.00359	0.00355
	(A2 * !A3 * B1 * C1 * !Y)	-0.00288	-0.00289	-0.00288
	(A2 * !A3 * B1 * C1 * !Y)	0.00354	0.00358	0.00355
	(!A2 * A3 * B1 * C1 * !Y)	-0.00288	-0.00289	-0.00288
	(!A2 * A3 * B1 * C1 * !Y)	0.00343	0.00346	0.00342
	(!A2 * A3 * B1 * !C1 * Y)	-0.00288	-0.00289	-0.00287
	(!A2 * A3 * B1 * !C1 * Y)	0.00343	0.00346	0.00343
	(!A2 * A3 * !B1 * Y)	-0.00288	-0.00289	-0.00287
	(!A2 * A3 * !B1 * Y)	0.00343	0.00346	0.00343
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00245	-0.00269	-0.00270
	(!A2 * !A3 * B1 * !C1 * Y)	0.00363	0.00365	0.00363
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00253	-0.00274	-0.00274
	(!A2 * !A3 * !B1 * C1 * Y)	0.00361	0.00367	0.00363
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00253	-0.00274	-0.00274
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00361	0.00367	0.00363

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00573	-0.00577	-0.00575
	(A2 * B1 * !C1 * Y)	0.00705	0.00711	0.00708
	(A2 * A3 * B1 * C1 * !Y)	-0.00573	-0.00577	-0.00575
	(A2 * A3 * B1 * C1 * !Y)	0.00705	0.00713	0.00708
	(A2 * !B1 * Y)	-0.00573	-0.00577	-0.00575
	(A2 * !B1 * Y)	0.00705	0.00711	0.00708
	(A2 * !A3 * B1 * C1 * !Y)	-0.00574	-0.00576	-0.00575
	(A2 * !A3 * B1 * C1 * !Y)	0.00705	0.00711	0.00709
	(!A2 * A3 * B1 * C1 * !Y)	-0.00573	-0.00578	-0.00575
	(!A2 * A3 * B1 * C1 * !Y)	0.00682	0.00692	0.00685
	(!A2 * A3 * B1 * !C1 * Y)	-0.00573	-0.00578	-0.00575
	(!A2 * A3 * B1 * !C1 * Y)	0.00682	0.00692	0.00685
	(!A2 * A3 * !B1 * Y)	-0.00573	-0.00578	-0.00575
	(!A2 * A3 * !B1 * Y)	0.00682	0.00692	0.00685
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00500	-0.00537	-0.00540
	(!A2 * !A3 * B1 * !C1 * Y)	0.00725	0.00727	0.00726
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00512	-0.00547	-0.00546
	(!A2 * !A3 * !B1 * C1 * Y)	0.00724	0.00733	0.00726
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00512	-0.00547	-0.00546
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00724	0.00733	0.00726

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)**	0.00159	0.00162	0.00152
	(A1 * A3 * B1 * C1 * !Y)	-0.00115	-0.00115	-0.00115
	(A1 * A3 * B1 * !C1 * Y)	0.00140	0.00142	0.00141
	(A1 * A3 * B1 * !C1 * Y)	-0.00131	-0.00131	-0.00131
	(A1 * A3 * !B1 * Y)	0.00140	0.00142	0.00141
	(A1 * A3 * !B1 * Y)	-0.00131	-0.00131	-0.00131
	(A1 * !A3 * B1 * C1 * !Y)	0.00148	0.00151	0.00147
	(A1 * !A3 * B1 * C1 * !Y)	-0.00097	-0.00099	-0.00098
	(A1 * !A3 * B1 * !C1 * Y)	0.00142	0.00142	0.00141
	(A1 * !A3 * B1 * !C1 * Y)	-0.00180	-0.00182	-0.00181
	(A1 * !A3 * !B1 * C1 * Y)	0.00142	0.00142	0.00141
	(A1 * !A3 * !B1 * C1 * Y)	-0.00180	-0.00182	-0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	0.00140	0.00142	0.00141
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00178	-0.00182	-0.00181
	(!A1 * A3 * B1 * C1 * !Y)	0.00180	0.00148	0.00147
	(!A1 * A3 * B1 * C1 * !Y)	-0.00142	-0.00174	-0.00176
	(!A1 * A3 * B1 * !C1 * Y)	0.00141	0.00140	0.00140
	(!A1 * A3 * B1 * !C1 * Y)	-0.00179	-0.00181	-0.00181
	(!A1 * A3 * !B1 * Y)	0.00140	0.00140	0.00140
	(!A1 * A3 * !B1 * Y)	-0.00177	-0.00181	-0.00181
	(!A1 * !A3 * B1 * !C1 * Y)	0.00130	0.00131	0.00130
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !A3 * !B1 * C1 * Y)	0.00133	0.00134	0.00133
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00133	0.00134	0.00133
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00318	0.00321	0.00304
	(A1 * A3 * B1 * C1 * !Y)	-0.00241	-0.00241	-0.00241
	(A1 * A3 * B1 * !C1 * Y)	0.00292	0.00294	0.00290
	(A1 * A3 * B1 * !C1 * Y)	-0.00264	-0.00265	-0.00264
	(A1 * A3 * !B1 * Y)	0.00292	0.00294	0.00290
	(A1 * A3 * !B1 * Y)	-0.00264	-0.00265	-0.00264
	(A1 * !A3 * B1 * C1 * !Y)	0.00295	0.00300	0.00293
	(A1 * !A3 * B1 * C1 * !Y)	-0.00202	-0.00205	-0.00203
	(A1 * !A3 * B1 * !C1 * Y)	0.00292	0.00294	0.00290
	(A1 * !A3 * B1 * !C1 * Y)	-0.00354	-0.00359	-0.00359
	(A1 * !A3 * !B1 * C1 * Y)	0.00292	0.00294	0.00291
	(A1 * !A3 * !B1 * C1 * Y)	-0.00354	-0.00359	-0.00359
	(A1 * !A3 * !B1 * !C1 * Y)	0.00293	0.00293	0.00290
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00354	-0.00359	-0.00359
	(!A1 * A3 * B1 * C1 * !Y)	0.00357	0.00294	0.00291
	(!A1 * A3 * B1 * C1 * !Y)	-0.00299	-0.00362	-0.00363
	(!A1 * A3 * B1 * !C1 * Y)	0.00293	0.00292	0.00290
	(!A1 * A3 * B1 * !C1 * Y)	-0.00359	-0.00363	-0.00363
	(!A1 * A3 * !B1 * Y)	0.00293	0.00292	0.00290
	(!A1 * A3 * !B1 * Y)	-0.00359	-0.00363	-0.00363
	(!A1 * !A3 * B1 * !C1 * Y)	0.00268	0.00270	0.00268
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00369	-0.00370	-0.00368
	(!A1 * !A3 * !B1 * C1 * Y)	0.00273	0.00273	0.00272
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00367	-0.00369	-0.00369
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00273	0.00273	0.00272
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00367	-0.00369	-0.00369

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00620	0.00635	0.00599
	(A1 * A3 * B1 * C1 * !Y)	-0.00461	-0.00462	-0.00462
	(A1 * A3 * B1 * !C1 * Y)	0.00574	0.00578	0.00571
	(A1 * A3 * B1 * !C1 * Y)	-0.00513	-0.00517	-0.00514
	(A1 * A3 * !B1 * Y)	0.00574	0.00578	0.00571
	(A1 * A3 * !B1 * Y)	-0.00514	-0.00517	-0.00514
	(A1 * !A3 * B1 * C1 * !Y)	0.00585	0.00592	0.00580
	(A1 * !A3 * B1 * C1 * !Y)	-0.00393	-0.00396	-0.00392
	(A1 * !A3 * B1 * !C1 * Y)	0.00567	0.00570	0.00569
	(A1 * !A3 * B1 * !C1 * Y)	-0.00693	-0.00705	-0.00704
	(A1 * !A3 * !B1 * C1 * Y)	0.00567	0.00570	0.00569
	(A1 * !A3 * !B1 * C1 * Y)	-0.00693	-0.00705	-0.00704
	(A1 * !A3 * !B1 * !C1 * Y)	0.00567	0.00570	0.00569
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00693	-0.00708	-0.00705
	(!A1 * A3 * B1 * C1 * !Y)	0.00708	0.00584	0.00577
	(!A1 * A3 * B1 * C1 * !Y)	-0.00562	-0.00705	-0.00707
	(!A1 * A3 * B1 * !C1 * Y)	0.00566	0.00572	0.00569
	(!A1 * A3 * B1 * !C1 * Y)	-0.00696	-0.00717	-0.00713
	(!A1 * A3 * !B1 * Y)	0.00566	0.00572	0.00569
	(!A1 * A3 * !B1 * Y)	-0.00697	-0.00717	-0.00713
	(!A1 * !A3 * B1 * !C1 * Y)	0.00525	0.00530	0.00525
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00725	-0.00725	-0.00726
	(!A1 * !A3 * !B1 * C1 * Y)	0.00536	0.00536	0.00534
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00728	-0.00727	-0.00726
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00537	0.00541	0.00535
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00728	-0.00730	-0.00726

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)**	-0.00146	-0.00147	-0.00146
	(A1 * A3 * B1 * C1 * !Y)	0.00115	0.00115	0.00115
	(A1 * A3 * B1 * !C1 * Y)	-0.00140	-0.00141	-0.00140
	(A1 * A3 * B1 * !C1 * Y)	0.00131	0.00131	0.00131
	(A1 * A3 * !B1 * Y)	-0.00140	-0.00140	-0.00140
	(A1 * A3 * !B1 * Y)	0.00131	0.00131	0.00131
	(A1 * !A3 * B1 * C1 * !Y)	-0.00146	-0.00146	-0.00144
	(A1 * !A3 * B1 * C1 * !Y)	0.00100	0.00101	0.00101
	(A1 * !A3 * B1 * !C1 * Y)	-0.00140	-0.00141	-0.00140
	(A1 * !A3 * B1 * !C1 * Y)	0.00181	0.00182	0.00181
	(A1 * !A3 * !B1 * C1 * Y)	-0.00140	-0.00141	-0.00140
	(A1 * !A3 * !B1 * C1 * Y)	0.00180	0.00182	0.00181
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00140	-0.00141	-0.00140
	(A1 * !A3 * !B1 * !C1 * Y)	0.00180	0.00182	0.00181
	(!A1 * A3 * B1 * C1 * !Y)	-0.00146	-0.00146	-0.00146
	(!A1 * A3 * B1 * C1 * !Y)	0.00175	0.00176	0.00176
	(!A1 * A3 * B1 * !C1 * Y)	-0.00140	-0.00140	-0.00140
	(!A1 * A3 * B1 * !C1 * Y)	0.00181	0.00182	0.00181
	(!A1 * A3 * !B1 * Y)	-0.00140	-0.00140	-0.00140
	(!A1 * A3 * !B1 * Y)	0.00180	0.00182	0.00181
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00120	-0.00131	-0.00130
	(!A1 * !A3 * B1 * !C1 * Y)	0.00184	0.00186	0.00184
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00125	-0.00134	-0.00133
	(!A1 * !A3 * !B1 * C1 * Y)	0.00184	0.00186	0.00184
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00126	-0.00134	-0.00133
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00184	0.00186	0.00184

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00294	-0.00295	-0.00294
	(A1 * A3 * B1 * C1 * !Y)	0.00241	0.00241	0.00241
	(A1 * A3 * B1 * !C1 * Y)	-0.00289	-0.00290	-0.00290
	(A1 * A3 * B1 * !C1 * Y)	0.00264	0.00265	0.00264
	(A1 * A3 * !B1 * Y)	-0.00289	-0.00290	-0.00290
	(A1 * A3 * !B1 * Y)	0.00264	0.00265	0.00264
	(A1 * !A3 * B1 * C1 * !Y)	-0.00289	-0.00290	-0.00287
	(A1 * !A3 * B1 * C1 * !Y)	0.00209	0.00210	0.00210
	(A1 * !A3 * B1 * !C1 * Y)	-0.00288	-0.00290	-0.00290
	(A1 * !A3 * B1 * !C1 * Y)	0.00356	0.00359	0.00359
	(A1 * !A3 * !B1 * C1 * Y)	-0.00289	-0.00290	-0.00290
	(A1 * !A3 * !B1 * C1 * Y)	0.00358	0.00359	0.00359
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00289	-0.00290	-0.00290
	(A1 * !A3 * !B1 * !C1 * Y)	0.00358	0.00359	0.00359
	(!A1 * A3 * B1 * C1 * !Y)	-0.00289	-0.00292	-0.00289
	(!A1 * A3 * B1 * C1 * !Y)	0.00361	0.00365	0.00363
	(!A1 * A3 * B1 * !C1 * Y)	-0.00289	-0.00290	-0.00290
	(!A1 * A3 * B1 * !C1 * Y)	0.00361	0.00363	0.00363
	(!A1 * A3 * !B1 * Y)	-0.00290	-0.00290	-0.00290
	(!A1 * A3 * !B1 * Y)	0.00363	0.00363	0.00363
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00245	-0.00270	-0.00268
	(!A1 * !A3 * B1 * !C1 * Y)	0.00369	0.00373	0.00369
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00253	-0.00273	-0.00272
	(!A1 * !A3 * !B1 * C1 * Y)	0.00367	0.00372	0.00369
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00254	-0.00273	-0.00272
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00367	0.00372	0.00369

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00579	-0.00579	-0.00580
	(A1 * A3 * B1 * C1 * !Y)	0.00461	0.00462	0.00462
	(A1 * A3 * B1 * !C1 * Y)	-0.00568	-0.00571	-0.00569
	(A1 * A3 * B1 * !C1 * Y)	0.00513	0.00517	0.00514
	(A1 * A3 * !B1 * Y)	-0.00568	-0.00571	-0.00569
	(A1 * A3 * !B1 * Y)	0.00514	0.00517	0.00514
	(A1 * !A3 * B1 * C1 * !Y)	-0.00572	-0.00574	-0.00566
	(A1 * !A3 * B1 * C1 * !Y)	0.00400	0.00402	0.00405
	(A1 * !A3 * B1 * !C1 * Y)	-0.00566	-0.00569	-0.00568
	(A1 * !A3 * B1 * !C1 * Y)	0.00701	0.00705	0.00704
	(A1 * !A3 * !B1 * C1 * Y)	-0.00567	-0.00569	-0.00568
	(A1 * !A3 * !B1 * C1 * Y)	0.00704	0.00705	0.00704
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00567	-0.00570	-0.00568
	(A1 * !A3 * !B1 * !C1 * Y)	0.00706	0.00708	0.00705
	(!A1 * A3 * B1 * C1 * !Y)	-0.00574	-0.00578	-0.00573
	(!A1 * A3 * B1 * C1 * !Y)	0.00703	0.00712	0.00707
	(!A1 * A3 * B1 * !C1 * Y)	-0.00566	-0.00570	-0.00568
	(!A1 * A3 * B1 * !C1 * Y)	0.00710	0.00717	0.00713
	(!A1 * A3 * !B1 * Y)	-0.00566	-0.00570	-0.00568
	(!A1 * A3 * !B1 * Y)	0.00713	0.00717	0.00713
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00488	-0.00530	-0.00525
	(!A1 * !A3 * B1 * !C1 * Y)	0.00728	0.00725	0.00727
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00505	-0.00536	-0.00534
	(!A1 * !A3 * !B1 * C1 * Y)	0.00730	0.00733	0.00727
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00505	-0.00539	-0.00535
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00729	0.00733	0.00727

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)**	0.00158	0.00160	0.00158
	(A2 * B1 * C1 * !Y)	-0.00086	-0.00086	-0.00085
	(A2 * B1 * !C1 * Y)	0.00143	0.00143	0.00143
	(A2 * B1 * !C1 * Y)	-0.00168	-0.00173	-0.00173
	(A2 * !B1 * C1 * Y)	0.00143	0.00143	0.00143
	(A2 * !B1 * C1 * Y)	-0.00168	-0.00173	-0.00173
	(A2 * !B1 * !C1 * Y)	0.00143	0.00145	0.00143
	(A2 * !B1 * !C1 * Y)	-0.00168	-0.00174	-0.00173
	(A1 * !A2 * B1 * C1 * !Y)	0.00157	0.00160	0.00158
	(A1 * !A2 * B1 * C1 * !Y)	-0.00085	-0.00086	-0.00085
	(A1 * !A2 * B1 * !C1 * Y)	0.00143	0.00145	0.00143
	(A1 * !A2 * B1 * !C1 * Y)	-0.00152	-0.00166	-0.00165
	(A1 * !A2 * !B1 * C1 * Y)	0.00143	0.00145	0.00143
	(A1 * !A2 * !B1 * C1 * Y)	-0.00152	-0.00166	-0.00165
	(A1 * !A2 * !B1 * !C1 * Y)	0.00143	0.00145	0.00143
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00153	-0.00167	-0.00166
	(!A1 * !A2 * B1 * !C1 * Y)	0.00133	0.00135	0.00133
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00175	-0.00176	-0.00175
	(!A1 * !A2 * !B1 * C1 * Y)	0.00136	0.00136	0.00135
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00176	-0.00176	-0.00175
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00136	0.00136	0.00135
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00176	-0.00176	-0.00175

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00324	0.00329	0.00324
	(A2 * B1 * C1 * !Y)	-0.00175	-0.00178	-0.00175
	(A2 * B1 * !C1 * Y)	0.00285	0.00289	0.00286
	(A2 * B1 * !C1 * Y)	-0.00349	-0.00360	-0.00359
	(A2 * !B1 * C1 * Y)	0.00286	0.00289	0.00286
	(A2 * !B1 * C1 * Y)	-0.00349	-0.00360	-0.00359
	(A2 * !B1 * !C1 * Y)	0.00287	0.00286	0.00286
	(A2 * !B1 * !C1 * Y)	-0.00350	-0.00361	-0.00359
	(A1 * !A2 * B1 * C1 * !Y)	0.00324	0.00329	0.00324
	(A1 * !A2 * B1 * C1 * !Y)	-0.00175	-0.00178	-0.00175
	(A1 * !A2 * B1 * !C1 * Y)	0.00286	0.00287	0.00286
	(A1 * !A2 * B1 * !C1 * Y)	-0.00322	-0.00346	-0.00343
	(A1 * !A2 * !B1 * C1 * Y)	0.00286	0.00287	0.00286
	(A1 * !A2 * !B1 * C1 * Y)	-0.00322	-0.00346	-0.00344
	(A1 * !A2 * !B1 * !C1 * Y)	0.00287	0.00286	0.00286
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00325	-0.00348	-0.00346
	(!A1 * !A2 * B1 * !C1 * Y)	0.00270	0.00271	0.00269
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00365	-0.00366	-0.00365
	(!A1 * !A2 * !B1 * C1 * Y)	0.00271	0.00273	0.00272
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00364	-0.00366	-0.00365
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00271	0.00274	0.00272
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00364	-0.00366	-0.00365

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00661	0.00670	0.00659
	(A2 * B1 * C1 * !Y)	-0.00352	-0.00355	-0.00348
	(A2 * B1 * !C1 * Y)	0.00554	0.00556	0.00550
	(A2 * B1 * !C1 * Y)	-0.00730	-0.00752	-0.00748
	(A2 * !B1 * C1 * Y)	0.00554	0.00555	0.00550
	(A2 * !B1 * C1 * Y)	-0.00729	-0.00752	-0.00748
	(A2 * !B1 * !C1 * Y)	0.00547	0.00552	0.00550
	(A2 * !B1 * !C1 * Y)	-0.00723	-0.00752	-0.00750
	(A1 * !A2 * B1 * C1 * !Y)	0.00661	0.00670	0.00659
	(A1 * !A2 * B1 * C1 * !Y)	-0.00351	-0.00354	-0.00348
	(A1 * !A2 * B1 * !C1 * Y)	0.00549	0.00552	0.00550
	(A1 * !A2 * B1 * !C1 * Y)	-0.00659	-0.00707	-0.00706
	(A1 * !A2 * !B1 * C1 * Y)	0.00549	0.00552	0.00550
	(A1 * !A2 * !B1 * C1 * Y)	-0.00659	-0.00710	-0.00707
	(A1 * !A2 * !B1 * !C1 * Y)	0.00549	0.00552	0.00550
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00662	-0.00719	-0.00715
	(!A1 * !A2 * B1 * !C1 * Y)	0.00508	0.00514	0.00510
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00762	-0.00766	-0.00763
	(!A1 * !A2 * !B1 * C1 * Y)	0.00521	0.00524	0.00519
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00765	-0.00766	-0.00763
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00519	0.00523	0.00517
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00765	-0.00767	-0.00763

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)**	-0.00151	-0.00152	-0.00157
	(A2 * B1 * C1 * !Y)	0.00091	0.00091	0.00087
	(A2 * B1 * !C1 * Y)	-0.00142	-0.00143	-0.00143
	(A2 * B1 * !C1 * Y)	0.00171	0.00174	0.00173
	(A2 * !B1 * C1 * Y)	-0.00142	-0.00143	-0.00143
	(A2 * !B1 * C1 * Y)	0.00172	0.00174	0.00173
	(A2 * !B1 * !C1 * Y)	-0.00143	-0.00144	-0.00143
	(A2 * !B1 * !C1 * Y)	0.00172	0.00174	0.00173
	(A1 * !A2 * B1 * C1 * !Y)	-0.00144	-0.00145	-0.00155
	(A1 * !A2 * B1 * C1 * !Y)	0.00095	0.00095	0.00087
	(A1 * !A2 * B1 * !C1 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * B1 * !C1 * Y)	0.00165	0.00166	0.00165
	(A1 * !A2 * !B1 * C1 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * !B1 * C1 * Y)	0.00165	0.00166	0.00165
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * !B1 * !C1 * Y)	0.00166	0.00167	0.00166
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00122	-0.00135	-0.00133
	(!A1 * !A2 * B1 * !C1 * Y)	0.00175	0.00177	0.00176
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00128	-0.00136	-0.00135
	(!A1 * !A2 * !B1 * C1 * Y)	0.00176	0.00177	0.00176
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00128	-0.00136	-0.00135
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00176	0.00177	0.00176

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00310	-0.00312	-0.00322
	(A2 * B1 * C1 * !Y)	0.00188	0.00189	0.00179
	(A2 * B1 * !C1 * Y)	-0.00285	-0.00287	-0.00286
	(A2 * B1 * !C1 * Y)	0.00358	0.00360	0.00359
	(A2 * !B1 * C1 * Y)	-0.00285	-0.00287	-0.00286
	(A2 * !B1 * C1 * Y)	0.00357	0.00360	0.00359
	(A2 * !B1 * !C1 * Y)	-0.00286	-0.00286	-0.00286
	(A2 * !B1 * !C1 * Y)	0.00359	0.00361	0.00359
	(A1 * !A2 * B1 * C1 * !Y)	-0.00288	-0.00292	-0.00318
	(A1 * !A2 * B1 * C1 * !Y)	0.00199	0.00201	0.00180
	(A1 * !A2 * B1 * !C1 * Y)	-0.00285	-0.00287	-0.00286
	(A1 * !A2 * B1 * !C1 * Y)	0.00341	0.00346	0.00343
	(A1 * !A2 * !B1 * C1 * Y)	-0.00285	-0.00287	-0.00286
	(A1 * !A2 * !B1 * C1 * Y)	0.00342	0.00346	0.00344
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00284	-0.00286	-0.00286
	(A1 * !A2 * !B1 * !C1 * Y)	0.00343	0.00348	0.00346
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00242	-0.00267	-0.00269
	(!A1 * !A2 * B1 * !C1 * Y)	0.00365	0.00366	0.00366
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00251	-0.00272	-0.00272
	(!A1 * !A2 * !B1 * C1 * Y)	0.00364	0.00369	0.00366
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00251	-0.00272	-0.00272
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00364	0.00369	0.00366

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00626	-0.00632	-0.00655
	(A2 * B1 * C1 * !Y)	0.00379	0.00380	0.00357
	(A2 * B1 * !C1 * Y)	-0.00550	-0.00551	-0.00549
	(A2 * B1 * !C1 * Y)	0.00750	0.00752	0.00748
	(A2 * !B1 * C1 * Y)	-0.00547	-0.00551	-0.00549
	(A2 * !B1 * C1 * Y)	0.00745	0.00752	0.00748
	(A2 * !B1 * !C1 * Y)	-0.00547	-0.00550	-0.00549
	(A2 * !B1 * !C1 * Y)	0.00747	0.00752	0.00750
	(A1 * !A2 * B1 * C1 * !Y)	-0.00593	-0.00593	-0.00648
	(A1 * !A2 * B1 * C1 * !Y)	0.00394	0.00392	0.00356
	(A1 * !A2 * B1 * !C1 * Y)	-0.00546	-0.00550	-0.00549
	(A1 * !A2 * B1 * !C1 * Y)	0.00701	0.00707	0.00706
	(A1 * !A2 * !B1 * C1 * Y)	-0.00548	-0.00551	-0.00549
	(A1 * !A2 * !B1 * C1 * Y)	0.00705	0.00710	0.00707
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00548	-0.00552	-0.00549
	(A1 * !A2 * !B1 * !C1 * Y)	0.00712	0.00719	0.00715
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00473	-0.00514	-0.00510
	(!A1 * !A2 * B1 * !C1 * Y)	0.00765	0.00766	0.00764
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00489	-0.00524	-0.00519
	(!A1 * !A2 * !B1 * C1 * Y)	0.00765	0.00770	0.00764
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00489	-0.00523	-0.00517
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00765	0.00770	0.00764

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00134	0.00135	0.00134
	(A3 * !C1 * Y)	-0.00187	-0.00187	-0.00187
	(A2 * !A3 * !C1 * Y)	0.00134	0.00135	0.00134
	(A2 * !A3 * !C1 * Y)	-0.00187	-0.00187	-0.00187
	(A1 * !A2 * !A3 * !C1 * Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00186	-0.00187	-0.00187
	(!A1 * !A2 * !A3 * C1 * Y)	0.00061	0.00061	0.00061
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00188	-0.00188	-0.00187
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00077	0.00078	0.00077
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00188	-0.00189	-0.00188
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00278	0.00281	0.00280
	(A3 * !C1 * Y)	-0.00367	-0.00369	-0.00367
	(A2 * !A3 * !C1 * Y)	0.00280	0.00283	0.00281
	(A2 * !A3 * !C1 * Y)	-0.00367	-0.00368	-0.00367
	(A1 * !A2 * !A3 * !C1 * Y)	0.00278	0.00280	0.00279
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00367	-0.00368	-0.00367
	(!A1 * !A2 * !A3 * C1 * Y)	0.00126	0.00128	0.00128
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00367	-0.00370	-0.00367
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00161	0.00163	0.00162
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00370	-0.00373	-0.00371
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00524	0.00529	0.00526
	(A3 * !C1 * Y)	-0.00418	-0.00420	-0.00419
	(A2 * !A3 * !C1 * Y)	0.00522	0.00525	0.00523
	(A2 * !A3 * !C1 * Y)	-0.00420	-0.00420	-0.00419
	(A1 * !A2 * !A3 * !C1 * Y)	0.00522	0.00523	0.00522
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00420	-0.00420	-0.00419
	(!A1 * !A2 * !A3 * C1 * Y)	0.00229	0.00230	0.00231
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00423	-0.00424	-0.00422
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00293	0.00297	0.00294
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00430	-0.00433	-0.00430

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00126	-0.00135	-0.00134
	(A3 * !C1 * Y)	0.00193	0.00190	0.00187
	(A2 * !A3 * !C1 * Y)	-0.00125	-0.00135	-0.00134
	(A2 * !A3 * !C1 * Y)	0.00194	0.00189	0.00187
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00123	-0.00135	-0.00134
	(A1 * !A2 * !A3 * !C1 * Y)	0.00195	0.00189	0.00187
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00057	-0.00058	-0.00058
	(!A1 * !A2 * !A3 * C1 * Y)	0.00191	0.00194	0.00189
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00201	0.00199	0.00191
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00261	-0.00281	-0.00280
	(A3 * !C1 * Y)	0.00378	0.00372	0.00369
	(A2 * !A3 * !C1 * Y)	-0.00259	-0.00282	-0.00281
	(A2 * !A3 * !C1 * Y)	0.00380	0.00372	0.00369
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00254	-0.00280	-0.00279
	(A1 * !A2 * !A3 * !C1 * Y)	0.00384	0.00372	0.00368
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00121	-0.00122	-0.00123
	(!A1 * !A2 * !A3 * C1 * Y)	0.00380	0.00384	0.00372
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00161	-0.00163	-0.00162
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00392	0.00391	0.00375

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00475	-0.00529	-0.00526
	(A3 * !C1 * Y)	0.00454	0.00424	0.00420
	(A2 * !A3 * !C1 * Y)	-0.00467	-0.00525	-0.00523
	(A2 * !A3 * !C1 * Y)	0.00460	0.00424	0.00420
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00460	-0.00523	-0.00522
	(A1 * !A2 * !A3 * !C1 * Y)	0.00471	0.00424	0.00420
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00213	-0.00219	-0.00221
	(!A1 * !A2 * !A3 * C1 * Y)	0.00440	0.00449	0.00430
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00293	-0.00297	-0.00294
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00480	0.00467	0.00438

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00054	0.00054	0.00052
	(A3 * !B1 * Y)	-0.00218	-0.00218	-0.00221
	(A2 * !A3 * !B1 * Y)	0.00054	0.00054	0.00052
	(A2 * !A3 * !B1 * Y)	-0.00217	-0.00219	-0.00221
	(!A2 * !A3 * !B1 * Y)	0.00054	0.00054	0.00052
	(!A2 * !A3 * !B1 * Y)	-0.00218	-0.00218	-0.00221
	(!A1 * !A2 * !A3 * B1 * Y)	0.00058	0.00058	0.00052
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00209	-0.00210	-0.00220
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00104	0.00105	0.00101
	(A3 * !B1 * Y)	-0.00425	-0.00429	-0.00435
	(A2 * !A3 * !B1 * Y)	0.00105	0.00105	0.00101
	(A2 * !A3 * !B1 * Y)	-0.00425	-0.00429	-0.00435
	(!A2 * !A3 * !B1 * Y)	0.00104	0.00105	0.00101
	(!A2 * !A3 * !B1 * Y)	-0.00425	-0.00428	-0.00435
	(!A1 * !A2 * !A3 * B1 * Y)	0.00109	0.00110	0.00097
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00404	-0.00409	-0.00431
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00196	0.00195	0.00187
	(A3 * !B1 * Y)	-0.00472	-0.00474	-0.00488
	(A2 * !A3 * !B1 * Y)	0.00194	0.00195	0.00187
	(A2 * !A3 * !B1 * Y)	-0.00470	-0.00474	-0.00488
	(!A2 * !A3 * !B1 * Y)	0.00194	0.00195	0.00187
	(!A2 * !A3 * !B1 * Y)	-0.00470	-0.00473	-0.00488
	(!A1 * !A2 * !A3 * B1 * Y)	0.00205	0.00205	0.00182
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00433	-0.00436	-0.00481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00052	-0.00051	-0.00051
	(A3 * !B1 * Y)	0.00222	0.00220	0.00221
	(A2 * !A3 * !B1 * Y)	-0.00052	-0.00052	-0.00051
	(A2 * !A3 * !B1 * Y)	0.00222	0.00225	0.00221
	(!A2 * !A3 * !B1 * Y)	-0.00052	-0.00052	-0.00051
	(!A2 * !A3 * !B1 * Y)	0.00222	0.00225	0.00221
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00051	-0.00050	-0.00050
	(!A1 * !A2 * !A3 * B1 * Y)	0.00221	0.00222	0.00221
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00099	-0.00098	-0.00098
	(A3 * !B1 * Y)	0.00436	0.00435	0.00435
	(A2 * !A3 * !B1 * Y)	-0.00099	-0.00098	-0.00098
	(A2 * !A3 * !B1 * Y)	0.00437	0.00434	0.00435
	(!A2 * !A3 * !B1 * Y)	-0.00099	-0.00100	-0.00098
	(!A2 * !A3 * !B1 * Y)	0.00437	0.00442	0.00435
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00096	-0.00096	-0.00095
	(!A1 * !A2 * !A3 * B1 * Y)	0.00436	0.00437	0.00435
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00180	-0.00182	-0.00181
	(A3 * !B1 * Y)	0.00485	0.00490	0.00488
	(A2 * !A3 * !B1 * Y)	-0.00181	-0.00181	-0.00181
	(A2 * !A3 * !B1 * Y)	0.00485	0.00487	0.00488
	(!A2 * !A3 * !B1 * Y)	-0.00180	-0.00185	-0.00181
	(!A2 * !A3 * !B1 * Y)	0.00485	0.00495	0.00488
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00176	-0.00179	-0.00176
	(!A1 * !A2 * !A3 * B1 * Y)	0.00485	0.00495	0.00487

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00255	0.00302	0.00261	0.00256	0.00262	1.07843
sky130_fd_sc_hs__o311a_2	0.00283	0.00283	0.00282	0.00278	0.00276	2.11371
sky130_fd_sc_hs__o311a_4	0.00468	0.00512	0.00474	0.00574	0.00496	4.12356

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.11336	0.41018
sky130_fd_sc_hs__o311a_2	0.00000	0.15067	0.33459
sky130_fd_sc_hs__o311a_4	0.00000	0.31206	0.83274

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)	0.12763	0.67754	6.44512
	A2->X (RR)	0.12413	0.67205	6.40081
	A3->X (RR)	0.11182	0.64597	6.36818
	B1->X (RR)	0.11783	0.68655	6.70485
	C1->X (RR)	0.11166	0.68354	6.69739
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.13063	0.58326	6.43213
	A2->X (RR)	0.12401	0.57028	6.36575
	A3->X (RR)	0.10655	0.54637	6.32342
	B1->X (RR)	0.12415	0.60883	6.70988
	C1->X (RR)	0.11646	0.60787	6.70545
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.14095	0.52941	6.55064
	A2->X (RR)	0.13116	0.51154	6.47648
	A3->X (RR)	0.11760	0.49300	6.47294
	B1->X (RR)	0.13481	0.55733	6.84946
	C1->X (RR)	0.12330	0.54790	6.84965

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.30527	0.79590	5.01921
	A2->X (FF)	0.29411	0.80622	5.17940
	A3->X (FF)	0.24283	0.76444	5.06267
	B1->X (FF)	0.08583	0.55925	4.52140
	C1->X (FF)	0.07805	0.54025	4.47110
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.31156	0.78745	5.21162
	A2->X (FF)	0.29392	0.79715	5.40165
	A3->X (FF)	0.26288	0.77401	5.32633
	B1->X (FF)	0.10327	0.57105	4.74174
	C1->X (FF)	0.09329	0.55072	4.67236
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.36826	0.82291	5.34594
	A2->X (FF)	0.35098	0.82374	5.48823
	A3->X (FF)	0.29780	0.77612	5.39189
	B1->X (FF)	0.09486	0.51527	4.71362
	C1->X (FF)	0.08413	0.49328	4.67070

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01440	0.01416	0.02210
	A1	0.00635	0.00611	0.01420
	A2	0.01290	0.01282	0.02086
	A2	0.00551	0.00543	0.01364
	A3	0.01045	0.01052	0.02242
	A3	0.00412	0.00418	0.01627
	B1	0.01140	0.01154	0.03113
	B1	0.00407	0.00435	0.02522
	C1	0.01235	0.01260	0.03265
	C1	0.00402	0.00460	0.02764
sky130_fd_sc_hs__o311a_2	A1	0.01690	0.01667	0.02419
	A1	0.00818	0.00796	0.01582
	A2	0.01500	0.01531	0.02337
	A2	0.00724	0.00756	0.01601
	A3	0.01317	0.01354	0.02456
	A3	0.00634	0.00673	0.01814
	B1	0.01554	0.01549	0.03220
	B1	0.00630	0.00679	0.02716
	C1	0.01463	0.01483	0.03353
	C1	0.00628	0.00704	0.02942

sky130_fd_sc_hs__o311a_4	**A1**	0.03227	0.03271	0.05118
	A1	0.01712	0.01760	0.03642
	A2	0.02915	0.02973	0.04798
	A2	0.01524	0.01584	0.03462
	A3	0.02429	0.02507	0.05178
	A3	0.01226	0.01310	0.04030
	B1	0.03038	0.03086	0.06214
	B1	0.01209	0.01300	0.04983
	C1	0.02804	0.02911	0.06809
	C1	0.01209	0.01383	0.05873

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00488	0.00459	0.01404
	A1	0.01281	0.01252	0.02121
	A2	0.00495	0.00460	0.01438
	A2	0.01218	0.01190	0.02113
	A3	0.00491	0.00537	0.02044
	A3	0.01108	0.01159	0.02647
	B1	0.00329	0.00472	0.02570
	B1	0.01006	0.01119	0.03129
	C1	0.00288	0.00413	0.02644
	C1	0.00897	0.01008	0.03046

sky130_fd_sc_hs__o311a_2	**A1**	0.00736	0.00677	0.01541
	A1	0.01594	0.01548	0.02396
	A2	0.00736	0.00710	0.01748
	A2	0.01495	0.01468	0.02394
	A3	0.00734	0.00755	0.02236
	A3	0.01395	0.01417	0.02846
	B1	0.00589	0.00754	0.03017
	B1	0.01312	0.01439	0.03421
	C1	0.00540	0.00703	0.02960
	C1	0.01176	0.01306	0.03266
sky130_fd_sc_hs__o311a_4	**A1**	0.01616	0.01484	0.03448
	A1	0.03105	0.02991	0.04763
	A2	0.01597	0.01467	0.03661
	A2	0.02953	0.02841	0.04681
	A3	0.01618	0.01592	0.04760
	A3	0.02784	0.02773	0.05697
	B1	0.01158	0.01405	0.05768
	B1	0.02501	0.02701	0.06808
	C1	0.01052	0.01352	0.05973
	C1	0.02166	0.02413	0.06702

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)**	0.00130	0.00131	0.00130
	(A2 * B1 * !C1 * !X)	-0.00173	-0.00177	-0.00176
	(A2 * A3 * B1 * C1 * X)	0.00151	0.00152	0.00151
	(A2 * A3 * B1 * C1 * X)	-0.00151	-0.00156	-0.00155
	(A2 * !B1 * !X)	0.00130	0.00131	0.00130
	(A2 * !B1 * !X)	-0.00173	-0.00177	-0.00176
	(A2 * !A3 * B1 * C1 * X)	0.00153	0.00152	0.00151
	(A2 * !A3 * B1 * C1 * X)	-0.00148	-0.00156	-0.00156
	(!A2 * A3 * B1 * C1 * X)	0.00154	0.00152	0.00151
	(!A2 * A3 * B1 * C1 * X)	-0.00139	-0.00151	-0.00151
	(!A2 * A3 * B1 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A2 * A3 * B1 * !C1 * !X)	-0.00162	-0.00172	-0.00171
	(!A2 * A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A2 * A3 * !B1 * !X)	-0.00162	-0.00172	-0.00171
	(!A2 * !A3 * B1 * !C1 * !X)	0.00123	0.00123	0.00123
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00177	-0.00178	-0.00178
	(!A2 * !A3 * !B1 * C1 * !X)	0.00124	0.00126	0.00125
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00177	-0.00179	-0.00178
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00124	0.00126	0.00125
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00177	-0.00178	-0.00178

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00138	0.00140	0.00138
	(A2 * B1 * !C1 * !X)	-0.00190	-0.00195	-0.00194
	(A2 * A3 * B1 * C1 * X)	0.00156	0.00158	0.00156
	(A2 * A3 * B1 * C1 * X)	-0.00171	-0.00177	-0.00176
	(A2 * !B1 * !X)	0.00138	0.00140	0.00138
	(A2 * !B1 * !X)	-0.00190	-0.00195	-0.00194
	(A2 * !A3 * B1 * C1 * X)	0.00160	0.00158	0.00156
	(A2 * !A3 * B1 * C1 * X)	-0.00166	-0.00177	-0.00176
	(!A2 * A3 * B1 * C1 * X)	0.00159	0.00157	0.00156
	(!A2 * A3 * B1 * C1 * X)	-0.00156	-0.00172	-0.00170
	(!A2 * A3 * B1 * !C1 * !X)	0.00138	0.00139	0.00138
	(!A2 * A3 * B1 * !C1 * !X)	-0.00176	-0.00189	-0.00188
	(!A2 * A3 * !B1 * !X)	0.00138	0.00139	0.00138
	(!A2 * A3 * !B1 * !X)	-0.00176	-0.00189	-0.00188
	(!A2 * !A3 * B1 * !C1 * !X)	0.00128	0.00129	0.00128
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00197	-0.00197	-0.00196
	(!A2 * !A3 * !B1 * C1 * !X)	0.00130	0.00131	0.00130
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00196	-0.00197	-0.00197
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00196	-0.00197	-0.00197

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00237	0.00239	0.00236
	(A2 * B1 * !C1 * !X)	-0.00317	-0.00327	-0.00324
	(A2 * A3 * B1 * C1 * X)	0.00237	0.00240	0.00237
	(A2 * A3 * B1 * C1 * X)	-0.00317	-0.00327	-0.00325
	(A2 * !B1 * !X)	0.00237	0.00239	0.00236
	(A2 * !B1 * !X)	-0.00317	-0.00327	-0.00324
	(A2 * !A3 * B1 * C1 * X)	0.00245	0.00240	0.00237
	(A2 * !A3 * B1 * C1 * X)	-0.00306	-0.00326	-0.00325
	(!A2 * A3 * B1 * C1 * X)	0.00247	0.00240	0.00237
	(!A2 * A3 * B1 * C1 * X)	-0.00284	-0.00316	-0.00314
	(!A2 * A3 * B1 * !C1 * !X)	0.00237	0.00239	0.00236
	(!A2 * A3 * B1 * !C1 * !X)	-0.00292	-0.00315	-0.00313
	(!A2 * A3 * !B1 * !X)	0.00237	0.00239	0.00236
	(!A2 * A3 * !B1 * !X)	-0.00292	-0.00315	-0.00313
	(!A2 * !A3 * B1 * !C1 * !X)	0.00221	0.00223	0.00221
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00330	-0.00331	-0.00329
	(!A2 * !A3 * !B1 * C1 * !X)	0.00225	0.00225	0.00224
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00330	-0.00330	-0.00329
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00225	0.00225	0.00224
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00330	-0.00330	-0.00329

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)**	-0.00129	-0.00130	-0.00129
	(A2 * B1 * !C1 * !X)	0.00175	0.00177	0.00176
	(A2 * A3 * B1 * C1 * X)	-0.00150	-0.00151	-0.00150
	(A2 * A3 * B1 * C1 * X)	0.00155	0.00156	0.00155
	(A2 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(A2 * !B1 * !X)	0.00176	0.00177	0.00176
	(A2 * !A3 * B1 * C1 * X)	-0.00150	-0.00151	-0.00150
	(A2 * !A3 * B1 * C1 * X)	0.00155	0.00157	0.00156
	(!A2 * A3 * B1 * C1 * X)	-0.00149	-0.00150	-0.00150
	(!A2 * A3 * B1 * C1 * X)	0.00150	0.00151	0.00151
	(!A2 * A3 * B1 * !C1 * !X)	-0.00129	-0.00130	-0.00129
	(!A2 * A3 * B1 * !C1 * !X)	0.00171	0.00172	0.00171
	(!A2 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A2 * A3 * !B1 * !X)	0.00170	0.00172	0.00171
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00116	-0.00123	-0.00123
	(!A2 * !A3 * B1 * !C1 * !X)	0.00177	0.00180	0.00178
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00120	-0.00126	-0.00125
	(!A2 * !A3 * !B1 * C1 * !X)	0.00178	0.00180	0.00178
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00120	-0.00126	-0.00125
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00178	0.00180	0.00178

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00138	-0.00138	-0.00138
	(A2 * B1 * !C1 * !X)	0.00194	0.00196	0.00194
	(A2 * A3 * B1 * C1 * X)	-0.00155	-0.00156	-0.00155
	(A2 * A3 * B1 * C1 * X)	0.00177	0.00178	0.00176
	(A2 * !B1 * !X)	-0.00138	-0.00138	-0.00138
	(A2 * !B1 * !X)	0.00194	0.00196	0.00194
	(A2 * !A3 * B1 * C1 * X)	-0.00155	-0.00156	-0.00155
	(A2 * !A3 * B1 * C1 * X)	0.00177	0.00178	0.00176
	(!A2 * A3 * B1 * C1 * X)	-0.00155	-0.00156	-0.00155
	(!A2 * A3 * B1 * C1 * X)	0.00170	0.00172	0.00170
	(!A2 * A3 * B1 * !C1 * !X)	-0.00137	-0.00138	-0.00138
	(!A2 * A3 * B1 * !C1 * !X)	0.00187	0.00189	0.00188
	(!A2 * A3 * !B1 * !X)	-0.00137	-0.00138	-0.00138
	(!A2 * A3 * !B1 * !X)	0.00188	0.00189	0.00188
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00119	-0.00129	-0.00128
	(!A2 * !A3 * B1 * !C1 * !X)	0.00197	0.00199	0.00197
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00123	-0.00131	-0.00130
	(!A2 * !A3 * !B1 * C1 * !X)	0.00198	0.00199	0.00197
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00124	-0.00131	-0.00130
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00198	0.00199	0.00197

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00236	-0.00236	-0.00235
	(A2 * B1 * !C1 * !X)	0.00325	0.00327	0.00324
	(A2 * A3 * B1 * C1 * X)	-0.00235	-0.00236	-0.00235
	(A2 * A3 * B1 * C1 * X)	0.00325	0.00327	0.00325
	(A2 * !B1 * !X)	-0.00236	-0.00236	-0.00235
	(A2 * !B1 * !X)	0.00325	0.00327	0.00324
	(A2 * !A3 * B1 * C1 * X)	-0.00235	-0.00236	-0.00235
	(A2 * !A3 * B1 * C1 * X)	0.00325	0.00327	0.00325
	(!A2 * A3 * B1 * C1 * X)	-0.00234	-0.00235	-0.00234
	(!A2 * A3 * B1 * C1 * X)	0.00313	0.00316	0.00314
	(!A2 * A3 * B1 * !C1 * !X)	-0.00235	-0.00236	-0.00235
	(!A2 * A3 * B1 * !C1 * !X)	0.00312	0.00315	0.00313
	(!A2 * A3 * !B1 * !X)	-0.00235	-0.00236	-0.00235
	(!A2 * A3 * !B1 * !X)	0.00312	0.00315	0.00313
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00205	-0.00223	-0.00221
	(!A2 * !A3 * B1 * !C1 * !X)	0.00330	0.00334	0.00330
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00212	-0.00225	-0.00224
	(!A2 * !A3 * !B1 * C1 * !X)	0.00330	0.00334	0.00330
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00213	-0.00225	-0.00224
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00330	0.00334	0.00330

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)**	0.00166	0.00168	0.00160
	(A1 * A3 * B1 * C1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A3 * B1 * !C1 * !X)	0.00131	0.00131	0.00130
	(A1 * A3 * B1 * !C1 * !X)	-0.00148	-0.00148	-0.00147
	(A1 * A3 * !B1 * !X)	0.00131	0.00131	0.00130
	(A1 * A3 * !B1 * !X)	-0.00148	-0.00148	-0.00147
	(A1 * !A3 * B1 * C1 * X)	0.00156	0.00158	0.00156
	(A1 * !A3 * B1 * C1 * X)	-0.00092	-0.00093	-0.00093
	(A1 * !A3 * B1 * !C1 * !X)	0.00131	0.00131	0.00130
	(A1 * !A3 * B1 * !C1 * !X)	-0.00186	-0.00188	-0.00186
	(A1 * !A3 * !B1 * C1 * !X)	0.00131	0.00131	0.00130
	(A1 * !A3 * !B1 * C1 * !X)	-0.00186	-0.00188	-0.00187
	(A1 * !A3 * !B1 * !C1 * !X)	0.00131	0.00131	0.00130
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00186	-0.00188	-0.00187
	(!A1 * A3 * B1 * C1 * X)	0.00187	0.00156	0.00155
	(!A1 * A3 * B1 * C1 * X)	-0.00129	-0.00160	-0.00162
	(!A1 * A3 * B1 * !C1 * !X)	0.00131	0.00129	0.00130
	(!A1 * A3 * B1 * !C1 * !X)	-0.00184	-0.00187	-0.00187
	(!A1 * A3 * !B1 * !X)	0.00131	0.00129	0.00130
	(!A1 * A3 * !B1 * !X)	-0.00184	-0.00187	-0.00187
	(!A1 * !A3 * B1 * !C1 * !X)	0.00123	0.00124	0.00123
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00188	-0.00189	-0.00189
	(!A1 * !A3 * !B1 * C1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00189	-0.00189	-0.00189
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00125	0.00125	0.00125
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00189	-0.00189	-0.00189

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00157	0.00159	0.00149
	(A1 * A3 * B1 * C1 * X)	-0.00120	-0.00121	-0.00121
	(A1 * A3 * B1 * !C1 * !X)	0.00138	0.00140	0.00138
	(A1 * A3 * B1 * !C1 * !X)	-0.00134	-0.00135	-0.00134
	(A1 * A3 * !B1 * !X)	0.00138	0.00140	0.00138
	(A1 * A3 * !B1 * !X)	-0.00134	-0.00135	-0.00134
	(A1 * !A3 * B1 * C1 * X)	0.00145	0.00148	0.00144
	(A1 * !A3 * B1 * C1 * X)	-0.00101	-0.00103	-0.00102
	(A1 * !A3 * B1 * !C1 * !X)	0.00139	0.00140	0.00138
	(A1 * !A3 * B1 * !C1 * !X)	-0.00183	-0.00186	-0.00184
	(A1 * !A3 * !B1 * C1 * !X)	0.00139	0.00140	0.00138
	(A1 * !A3 * !B1 * C1 * !X)	-0.00183	-0.00186	-0.00185
	(A1 * !A3 * !B1 * !C1 * !X)	0.00139	0.00140	0.00138
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00183	-0.00186	-0.00185
	(!A1 * A3 * B1 * C1 * X)	0.00175	0.00144	0.00144
	(!A1 * A3 * B1 * C1 * X)	-0.00146	-0.00178	-0.00180
	(!A1 * A3 * B1 * !C1 * !X)	0.00138	0.00138	0.00138
	(!A1 * A3 * B1 * !C1 * !X)	-0.00182	-0.00185	-0.00185
	(!A1 * A3 * !B1 * !X)	0.00138	0.00138	0.00138
	(!A1 * A3 * !B1 * !X)	-0.00182	-0.00185	-0.00185
	(!A1 * !A3 * B1 * !C1 * !X)	0.00128	0.00129	0.00128
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00188	-0.00189	-0.00188
	(!A1 * !A3 * !B1 * C1 * !X)	0.00131	0.00132	0.00131
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00189	-0.00189	-0.00188
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00189	-0.00189	-0.00188

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00288	0.00298	0.00280
	(A1 * A3 * B1 * C1 * X)	-0.00225	-0.00227	-0.00226
	(A1 * A3 * B1 * !C1 * !X)	0.00272	0.00275	0.00271
	(A1 * A3 * B1 * !C1 * !X)	-0.00245	-0.00246	-0.00245
	(A1 * A3 * !B1 * !X)	0.00272	0.00275	0.00271
	(A1 * A3 * !B1 * !X)	-0.00246	-0.00246	-0.00245
	(A1 * !A3 * B1 * C1 * X)	0.00273	0.00277	0.00272
	(A1 * !A3 * B1 * C1 * X)	-0.00186	-0.00189	-0.00187
	(A1 * !A3 * B1 * !C1 * !X)	0.00271	0.00274	0.00271
	(A1 * !A3 * B1 * !C1 * !X)	-0.00317	-0.00322	-0.00322
	(A1 * !A3 * !B1 * C1 * !X)	0.00271	0.00274	0.00271
	(A1 * !A3 * !B1 * C1 * !X)	-0.00317	-0.00322	-0.00322
	(A1 * !A3 * !B1 * !C1 * !X)	0.00271	0.00274	0.00271
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00317	-0.00321	-0.00322
	(!A1 * A3 * B1 * C1 * X)	0.00334	0.00274	0.00272
	(!A1 * A3 * B1 * C1 * X)	-0.00261	-0.00320	-0.00324
	(!A1 * A3 * B1 * !C1 * !X)	0.00273	0.00271	0.00271
	(!A1 * A3 * B1 * !C1 * !X)	-0.00317	-0.00323	-0.00322
	(!A1 * A3 * !B1 * !X)	0.00274	0.00271	0.00271
	(!A1 * A3 * !B1 * !X)	-0.00317	-0.00323	-0.00322
	(!A1 * !A3 * B1 * !C1 * !X)	0.00251	0.00253	0.00252
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00327	-0.00328	-0.00327
	(!A1 * !A3 * !B1 * C1 * !X)	0.00255	0.00257	0.00255
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00326	-0.00328	-0.00327
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00255	0.00257	0.00255
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00326	-0.00328	-0.00327

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)**	-0.00155	-0.00155	-0.00155
	(A1 * A3 * B1 * C1 * X)	0.00111	0.00112	0.00112
	(A1 * A3 * B1 * !C1 * !X)	-0.00130	-0.00130	-0.00129
	(A1 * A3 * B1 * !C1 * !X)	0.00148	0.00148	0.00147
	(A1 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * A3 * !B1 * !X)	0.00148	0.00148	0.00147
	(A1 * !A3 * B1 * C1 * X)	-0.00154	-0.00154	-0.00152
	(A1 * !A3 * B1 * C1 * X)	0.00095	0.00096	0.00097
	(A1 * !A3 * B1 * !C1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * !A3 * B1 * !C1 * !X)	0.00186	0.00188	0.00186
	(A1 * !A3 * !B1 * C1 * !X)	-0.00130	-0.00130	-0.00129
	(A1 * !A3 * !B1 * C1 * !X)	0.00187	0.00188	0.00187
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00129
	(A1 * !A3 * !B1 * !C1 * !X)	0.00187	0.00188	0.00187
	(!A1 * A3 * B1 * C1 * X)	-0.00154	-0.00154	-0.00153
	(!A1 * A3 * B1 * C1 * X)	0.00162	0.00163	0.00162
	(!A1 * A3 * B1 * !C1 * !X)	-0.00130	-0.00129	-0.00129
	(!A1 * A3 * B1 * !C1 * !X)	0.00187	0.00188	0.00187
	(!A1 * A3 * !B1 * !X)	-0.00130	-0.00129	-0.00129
	(!A1 * A3 * !B1 * !X)	0.00187	0.00188	0.00187
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00115	-0.00124	-0.00123
	(!A1 * !A3 * B1 * !C1 * !X)	0.00190	0.00191	0.00189
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00119	-0.00125	-0.00125
	(!A1 * !A3 * !B1 * C1 * !X)	0.00189	0.00189	0.00189
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00119	-0.00125	-0.00125
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00189	0.00191	0.00189

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00143	-0.00144	-0.00143
	(A1 * A3 * B1 * C1 * X)	0.00120	0.00121	0.00121
	(A1 * A3 * B1 * !C1 * !X)	-0.00138	-0.00138	-0.00138
	(A1 * A3 * B1 * !C1 * !X)	0.00134	0.00135	0.00134
	(A1 * A3 * !B1 * !X)	-0.00138	-0.00138	-0.00138
	(A1 * A3 * !B1 * !X)	0.00134	0.00135	0.00134
	(A1 * !A3 * B1 * C1 * X)	-0.00142	-0.00143	-0.00141
	(A1 * !A3 * B1 * C1 * X)	0.00105	0.00106	0.00106
	(A1 * !A3 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A3 * B1 * !C1 * !X)	0.00185	0.00186	0.00184
	(A1 * !A3 * !B1 * C1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A3 * !B1 * C1 * !X)	0.00184	0.00186	0.00185
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A3 * !B1 * !C1 * !X)	0.00184	0.00186	0.00185
	(!A1 * A3 * B1 * C1 * X)	-0.00143	-0.00143	-0.00142
	(!A1 * A3 * B1 * C1 * X)	0.00180	0.00181	0.00181
	(!A1 * A3 * B1 * !C1 * !X)	-0.00138	-0.00138	-0.00138
	(!A1 * A3 * B1 * !C1 * !X)	0.00184	0.00186	0.00185
	(!A1 * A3 * !B1 * !X)	-0.00138	-0.00138	-0.00138
	(!A1 * A3 * !B1 * !X)	0.00184	0.00186	0.00185
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00118	-0.00129	-0.00128
	(!A1 * !A3 * B1 * !C1 * !X)	0.00189	0.00190	0.00188
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00123	-0.00132	-0.00131
	(!A1 * !A3 * !B1 * C1 * !X)	0.00189	0.00190	0.00189
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00123	-0.00131	-0.00130
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00189	0.00190	0.00189

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00270	-0.00271	-0.00270
	(A1 * A3 * B1 * C1 * X)	0.00225	0.00227	0.00226
	(A1 * A3 * B1 * !C1 * !X)	-0.00270	-0.00271	-0.00270
	(A1 * A3 * B1 * !C1 * !X)	0.00245	0.00246	0.00245
	(A1 * A3 * !B1 * !X)	-0.00271	-0.00271	-0.00270
	(A1 * A3 * !B1 * !X)	0.00246	0.00246	0.00245
	(A1 * !A3 * B1 * C1 * X)	-0.00267	-0.00268	-0.00264
	(A1 * !A3 * B1 * C1 * X)	0.00193	0.00194	0.00195
	(A1 * !A3 * B1 * !C1 * !X)	-0.00271	-0.00271	-0.00270
	(A1 * !A3 * B1 * !C1 * !X)	0.00323	0.00322	0.00322
	(A1 * !A3 * !B1 * C1 * !X)	-0.00270	-0.00270	-0.00270
	(A1 * !A3 * !B1 * C1 * !X)	0.00321	0.00322	0.00322
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00270	-0.00270	-0.00270
	(A1 * !A3 * !B1 * !C1 * !X)	0.00321	0.00321	0.00322
	(!A1 * A3 * B1 * C1 * X)	-0.00268	-0.00270	-0.00268
	(!A1 * A3 * B1 * C1 * X)	0.00322	0.00326	0.00325
	(!A1 * A3 * B1 * !C1 * !X)	-0.00271	-0.00270	-0.00270
	(!A1 * A3 * B1 * !C1 * !X)	0.00324	0.00323	0.00322
	(!A1 * A3 * !B1 * !X)	-0.00270	-0.00270	-0.00270
	(!A1 * A3 * !B1 * !X)	0.00321	0.00323	0.00322
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00233	-0.00253	-0.00252
	(!A1 * !A3 * B1 * !C1 * !X)	0.00328	0.00331	0.00328
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00242	-0.00257	-0.00255
	(!A1 * !A3 * !B1 * C1 * !X)	0.00328	0.00330	0.00328
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00243	-0.00257	-0.00255
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00328	0.00330	0.00328

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)**	0.00144	0.00146	0.00144
	(A2 * B1 * C1 * X)	-0.00085	-0.00087	-0.00085
	(A2 * B1 * !C1 * !X)	0.00128	0.00129	0.00128
	(A2 * B1 * !C1 * !X)	-0.00161	-0.00166	-0.00166
	(A2 * !B1 * C1 * !X)	0.00128	0.00129	0.00128
	(A2 * !B1 * C1 * !X)	-0.00161	-0.00166	-0.00166
	(A2 * !B1 * !C1 * !X)	0.00128	0.00130	0.00128
	(A2 * !B1 * !C1 * !X)	-0.00161	-0.00167	-0.00166
	(A1 * !A2 * B1 * C1 * X)	0.00144	0.00146	0.00144
	(A1 * !A2 * B1 * C1 * X)	-0.00085	-0.00087	-0.00085
	(A1 * !A2 * B1 * !C1 * !X)	0.00128	0.00130	0.00128
	(A1 * !A2 * B1 * !C1 * !X)	-0.00150	-0.00160	-0.00159
	(A1 * !A2 * !B1 * C1 * !X)	0.00128	0.00130	0.00128
	(A1 * !A2 * !B1 * C1 * !X)	-0.00150	-0.00160	-0.00159
	(A1 * !A2 * !B1 * !C1 * !X)	0.00128	0.00130	0.00128
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00150	-0.00161	-0.00160
	(!A1 * !A2 * B1 * !C1 * !X)	0.00122	0.00122	0.00121
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00168	-0.00168	-0.00168
	(!A1 * !A2 * !B1 * C1 * !X)	0.00124	0.00125	0.00124
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00168	-0.00169	-0.00168
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00124	0.00124	0.00124
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00168	-0.00168	-0.00168

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00159	0.00162	0.00159
	(A2 * B1 * C1 * X)	-0.00085	-0.00087	-0.00086
	(A2 * B1 * !C1 * !X)	0.00138	0.00139	0.00139
	(A2 * B1 * !C1 * !X)	-0.00176	-0.00181	-0.00180
	(A2 * !B1 * C1 * !X)	0.00138	0.00139	0.00139
	(A2 * !B1 * C1 * !X)	-0.00176	-0.00181	-0.00180
	(A2 * !B1 * !C1 * !X)	0.00138	0.00141	0.00139
	(A2 * !B1 * !C1 * !X)	-0.00176	-0.00181	-0.00180
	(A1 * !A2 * B1 * C1 * X)	0.00159	0.00162	0.00159
	(A1 * !A2 * B1 * C1 * X)	-0.00085	-0.00087	-0.00085
	(A1 * !A2 * B1 * !C1 * !X)	0.00138	0.00140	0.00139
	(A1 * !A2 * B1 * !C1 * !X)	-0.00160	-0.00173	-0.00172
	(A1 * !A2 * !B1 * C1 * !X)	0.00138	0.00140	0.00139
	(A1 * !A2 * !B1 * C1 * !X)	-0.00161	-0.00173	-0.00172
	(A1 * !A2 * !B1 * !C1 * !X)	0.00138	0.00140	0.00139
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00161	-0.00174	-0.00173
	(!A1 * !A2 * B1 * !C1 * !X)	0.00129	0.00130	0.00128
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00183	-0.00184	-0.00183
	(!A1 * !A2 * !B1 * C1 * !X)	0.00132	0.00132	0.00131
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00184	-0.00184	-0.00183
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00132	0.00132	0.00131
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00184	-0.00184	-0.00183

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00274	0.00279	0.00274
	(A2 * B1 * C1 * X)	-0.00169	-0.00171	-0.00168
	(A2 * B1 * !C1 * !X)	0.00239	0.00242	0.00240
	(A2 * B1 * !C1 * !X)	-0.00321	-0.00331	-0.00331
	(A2 * !B1 * C1 * !X)	0.00239	0.00242	0.00240
	(A2 * !B1 * C1 * !X)	-0.00321	-0.00331	-0.00331
	(A2 * !B1 * !C1 * !X)	0.00239	0.00240	0.00240
	(A2 * !B1 * !C1 * !X)	-0.00321	-0.00331	-0.00332
	(A1 * !A2 * B1 * C1 * X)	0.00274	0.00279	0.00275
	(A1 * !A2 * B1 * C1 * X)	-0.00168	-0.00171	-0.00168
	(A1 * !A2 * B1 * !C1 * !X)	0.00239	0.00244	0.00240
	(A1 * !A2 * B1 * !C1 * !X)	-0.00297	-0.00319	-0.00317
	(A1 * !A2 * !B1 * C1 * !X)	0.00239	0.00244	0.00240
	(A1 * !A2 * !B1 * C1 * !X)	-0.00297	-0.00319	-0.00317
	(A1 * !A2 * !B1 * !C1 * !X)	0.00240	0.00243	0.00240
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00298	-0.00321	-0.00319
	(!A1 * !A2 * B1 * !C1 * !X)	0.00227	0.00228	0.00227
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00337	-0.00337	-0.00336
	(!A1 * !A2 * !B1 * C1 * !X)	0.00230	0.00231	0.00230
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00337	-0.00337	-0.00336
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00230	0.00230	0.00230
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00337	-0.00337	-0.00336

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)**	-0.00135	-0.00136	-0.00142
	(A2 * B1 * C1 * X)	0.00094	0.00094	0.00088
	(A2 * B1 * !C1 * !X)	-0.00128	-0.00129	-0.00128
	(A2 * B1 * !C1 * !X)	0.00165	0.00167	0.00166
	(A2 * !B1 * C1 * !X)	-0.00128	-0.00129	-0.00128
	(A2 * !B1 * C1 * !X)	0.00166	0.00167	0.00166
	(A2 * !B1 * !C1 * !X)	-0.00128	-0.00129	-0.00128
	(A2 * !B1 * !C1 * !X)	0.00166	0.00167	0.00166
	(A1 * !A2 * B1 * C1 * X)	-0.00128	-0.00129	-0.00141
	(A1 * !A2 * B1 * C1 * X)	0.00098	0.00098	0.00088
	(A1 * !A2 * B1 * !C1 * !X)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * B1 * !C1 * !X)	0.00159	0.00160	0.00159
	(A1 * !A2 * !B1 * C1 * !X)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * !B1 * C1 * !X)	0.00158	0.00160	0.00159
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * !B1 * !C1 * !X)	0.00159	0.00161	0.00160
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00113	-0.00122	-0.00121
	(!A1 * !A2 * B1 * !C1 * !X)	0.00168	0.00170	0.00168
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00118	-0.00125	-0.00124
	(!A1 * !A2 * !B1 * C1 * !X)	0.00168	0.00170	0.00168
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00118	-0.00124	-0.00124
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00168	0.00170	0.00168

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00153	-0.00154	-0.00158
	(A2 * B1 * C1 * X)	0.00091	0.00092	0.00088
	(A2 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * !C1 * !X)	0.00179	0.00181	0.00180
	(A2 * !B1 * C1 * !X)	-0.00138	-0.00139	-0.00138
	(A2 * !B1 * C1 * !X)	0.00179	0.00181	0.00180
	(A2 * !B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A2 * !B1 * !C1 * !X)	0.00179	0.00181	0.00180
	(A1 * !A2 * B1 * C1 * X)	-0.00145	-0.00146	-0.00157
	(A1 * !A2 * B1 * C1 * X)	0.00096	0.00096	0.00088
	(A1 * !A2 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * B1 * !C1 * !X)	0.00172	0.00173	0.00172
	(A1 * !A2 * !B1 * C1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * !B1 * C1 * !X)	0.00172	0.00173	0.00172
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * !B1 * !C1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00118	-0.00130	-0.00128
	(!A1 * !A2 * B1 * !C1 * !X)	0.00184	0.00185	0.00183
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00124	-0.00132	-0.00131
	(!A1 * !A2 * !B1 * C1 * !X)	0.00185	0.00185	0.00184
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00124	-0.00132	-0.00131
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00185	0.00185	0.00184

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00255	-0.00258	-0.00271
	(A2 * B1 * C1 * X)	0.00187	0.00187	0.00173
	(A2 * B1 * !C1 * !X)	-0.00239	-0.00239	-0.00239
	(A2 * B1 * !C1 * !X)	0.00331	0.00331	0.00331
	(A2 * !B1 * C1 * !X)	-0.00239	-0.00239	-0.00239
	(A2 * !B1 * C1 * !X)	0.00330	0.00331	0.00331
	(A2 * !B1 * !C1 * !X)	-0.00239	-0.00239	-0.00239
	(A2 * !B1 * !C1 * !X)	0.00332	0.00331	0.00332
	(A1 * !A2 * B1 * C1 * X)	-0.00241	-0.00243	-0.00268
	(A1 * !A2 * B1 * C1 * X)	0.00194	0.00195	0.00173
	(A1 * !A2 * B1 * !C1 * !X)	-0.00238	-0.00241	-0.00239
	(A1 * !A2 * B1 * !C1 * !X)	0.00315	0.00319	0.00317
	(A1 * !A2 * !B1 * C1 * !X)	-0.00239	-0.00241	-0.00239
	(A1 * !A2 * !B1 * C1 * !X)	0.00316	0.00319	0.00317
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00239	-0.00241	-0.00239
	(A1 * !A2 * !B1 * !C1 * !X)	0.00318	0.00321	0.00319
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00206	-0.00228	-0.00227
	(!A1 * !A2 * B1 * !C1 * !X)	0.00337	0.00341	0.00337
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00215	-0.00230	-0.00230
	(!A1 * !A2 * !B1 * C1 * !X)	0.00338	0.00340	0.00337
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00215	-0.00230	-0.00230
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00338	0.00340	0.00337

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00116	0.00118	0.00117
	(A3 * !C1 * !X)	-0.00170	-0.00171	-0.00170
	(A2 * !A3 * !C1 * !X)	0.00117	0.00118	0.00117
	(A2 * !A3 * !C1 * !X)	-0.00171	-0.00171	-0.00170
	(A1 * !A2 * !A3 * !C1 * !X)	0.00116	0.00118	0.00117
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * !A3 * C1 * !X)	0.00061	0.00061	0.00059
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00171	-0.00171	-0.00170
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00171	-0.00172	-0.00171
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00130	0.00132	0.00131
	(A3 * !C1 * !X)	-0.00176	-0.00177	-0.00177
	(A2 * !A3 * !C1 * !X)	0.00130	0.00131	0.00131
	(A2 * !A3 * !C1 * !X)	-0.00176	-0.00177	-0.00177
	(A1 * !A2 * !A3 * !C1 * !X)	0.00129	0.00131	0.00130
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00176	-0.00177	-0.00177
	(!A1 * !A2 * !A3 * C1 * !X)	0.00058	0.00058	0.00057
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00179	-0.00179	-0.00178
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00073	0.00074	0.00073
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00180	-0.00181	-0.00181
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00256	0.00258	0.00257
	(A3 * !C1 * !X)	-0.00378	-0.00380	-0.00379
	(A2 * !A3 * !C1 * !X)	0.00256	0.00258	0.00257
	(A2 * !A3 * !C1 * !X)	-0.00378	-0.00380	-0.00379
	(A1 * !A2 * !A3 * !C1 * !X)	0.00257	0.00258	0.00257
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00380	-0.00380	-0.00379
	(!A1 * !A2 * !A3 * C1 * !X)	0.00129	0.00131	0.00130
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00378	-0.00381	-0.00379
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00162	0.00164	0.00162
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00381	-0.00384	-0.00382

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00108	-0.00118	-0.00117
	(A3 * !C1 * !X)	0.00177	0.00173	0.00171
	(A2 * !A3 * !C1 * !X)	-0.00108	-0.00118	-0.00117
	(A2 * !A3 * !C1 * !X)	0.00177	0.00173	0.00171
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00108	-0.00117	-0.00117
	(A1 * !A2 * !A3 * !C1 * !X)	0.00180	0.00172	0.00171
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00055	-0.00056	-0.00055
	(!A1 * !A2 * !A3 * C1 * !X)	0.00174	0.00177	0.00172
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00183	0.00179	0.00173
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00121	-0.00131	-0.00131
	(A3 * !C1 * !X)	0.00183	0.00179	0.00177
	(A2 * !A3 * !C1 * !X)	-0.00120	-0.00131	-0.00131
	(A2 * !A3 * !C1 * !X)	0.00185	0.00179	0.00177
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00118	-0.00131	-0.00130
	(A1 * !A2 * !A3 * !C1 * !X)	0.00186	0.00178	0.00177
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00054	-0.00055	-0.00055
	(!A1 * !A2 * !A3 * C1 * !X)	0.00182	0.00185	0.00180
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00073	-0.00074	-0.00073
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00195	0.00191	0.00183

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00237	-0.00257	-0.00257
	(A3 * !C1 * !X)	0.00391	0.00384	0.00381
	(A2 * !A3 * !C1 * !X)	-0.00235	-0.00257	-0.00257
	(A2 * !A3 * !C1 * !X)	0.00393	0.00384	0.00381
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00234	-0.00258	-0.00257
	(A1 * !A2 * !A3 * !C1 * !X)	0.00398	0.00384	0.00381
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00123	-0.00124	-0.00124
	(!A1 * !A2 * !A3 * C1 * !X)	0.00392	0.00395	0.00384
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00162	-0.00164	-0.00162
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00402	0.00402	0.00386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00047	0.00047	0.00046
	(A3 * !B1 * !X)	-0.00198	-0.00199	-0.00200
	(A2 * !A3 * !B1 * !X)	0.00047	0.00047	0.00046
	(A2 * !A3 * !B1 * !X)	-0.00198	-0.00199	-0.00200
	(!A2 * !A3 * !B1 * !X)	0.00047	0.00047	0.00046
	(!A2 * !A3 * !B1 * !X)	-0.00198	-0.00198	-0.00200
	(!A1 * !A2 * !A3 * B1 * !X)	0.00056	0.00057	0.00050
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00186	-0.00188	-0.00199
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00054	0.00053	0.00052
	(A3 * !B1 * !X)	-0.00200	-0.00201	-0.00203
	(A2 * !A3 * !B1 * !X)	0.00054	0.00053	0.00052
	(A2 * !A3 * !B1 * !X)	-0.00200	-0.00201	-0.00203
	(!A2 * !A3 * !B1 * !X)	0.00053	0.00053	0.00052
	(!A2 * !A3 * !B1 * !X)	-0.00200	-0.00201	-0.00203
	(!A1 * !A2 * !A3 * B1 * !X)	0.00057	0.00057	0.00052
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00192	-0.00193	-0.00203
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00098	0.00098	0.00093
	(A3 * !B1 * !X)	-0.00375	-0.00376	-0.00382
	(A2 * !A3 * !B1 * !X)	0.00097	0.00098	0.00093
	(A2 * !A3 * !B1 * !X)	-0.00373	-0.00376	-0.00382
	(!A2 * !A3 * !B1 * !X)	0.00098	0.00098	0.00093
	(!A2 * !A3 * !B1 * !X)	-0.00375	-0.00376	-0.00382
	(!A1 * !A2 * !A3 * B1 * !X)	0.00104	0.00104	0.00091
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00355	-0.00357	-0.00379

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00046	-0.00046	-0.00045
	(A3 * !B1 * !X)	0.00201	0.00204	0.00201
	(A2 * !A3 * !B1 * !X)	-0.00046	-0.00046	-0.00045
	(A2 * !A3 * !B1 * !X)	0.00201	0.00204	0.00201
	(!A2 * !A3 * !B1 * !X)	-0.00046	-0.00046	-0.00045
	(!A2 * !A3 * !B1 * !X)	0.00201	0.00204	0.00201
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00046	-0.00046	-0.00044
	(!A1 * !A2 * !A3 * B1 * !X)	0.00201	0.00204	0.00201
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00051	-0.00052	-0.00050
	(A3 * !B1 * !X)	0.00203	0.00207	0.00204
	(A2 * !A3 * !B1 * !X)	-0.00051	-0.00052	-0.00050
	(A2 * !A3 * !B1 * !X)	0.00203	0.00207	0.00204
	(!A2 * !A3 * !B1 * !X)	-0.00051	-0.00052	-0.00050
	(!A2 * !A3 * !B1 * !X)	0.00203	0.00207	0.00204
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00050	-0.00051	-0.00050
	(!A1 * !A2 * !A3 * B1 * !X)	0.00203	0.00207	0.00204
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00092	-0.00092	-0.00090
	(A3 * !B1 * !X)	0.00385	0.00390	0.00384
	(A2 * !A3 * !B1 * !X)	-0.00092	-0.00092	-0.00090
	(A2 * !A3 * !B1 * !X)	0.00385	0.00390	0.00384
	(!A2 * !A3 * !B1 * !X)	-0.00092	-0.00092	-0.00090
	(!A2 * !A3 * !B1 * !X)	0.00385	0.00389	0.00384
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00088	-0.00088	-0.00086
	(!A1 * !A2 * !A3 * B1 * !X)	0.00384	0.00389	0.00383

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00262	0.00308	0.00302	0.00273	0.35275
sky130_fd_sc_hs__o31ai_2	0.00537	0.00526	0.00553	0.00545	0.61523
sky130_fd_sc_hs__o31ai_4	0.01032	0.01032	0.01077	0.00800	1.15303

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.03323	0.10576
sky130_fd_sc_hs__o31ai_2	0.00000	0.06645	0.21153
sky130_fd_sc_hs__o31ai_4	0.00000	0.08663	0.31729

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)	0.17943	1.14190	10.32450
	A2->Y (FR)	0.17202	1.15676	10.85430
	A3->Y (FR)	0.13626	1.11804	10.80870
	B1->Y (FR)	0.03654	0.60017	6.54707
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.19206	1.01066	10.16780
	A2->Y (FR)	0.17179	1.01115	10.68070
	A3->Y (FR)	0.13474	0.98162	10.79860
	B1->Y (FR)	0.03178	0.54003	6.46078
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.17901	0.87004	10.08250
	A2->Y (FR)	0.16086	0.87613	10.66880
	A3->Y (FR)	0.12021	0.84956	10.82920
	B1->Y (FR)	0.04213	0.63113	8.37912

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.03970	0.35510	3.23841
	A2->Y (RF)	0.04082	0.34868	3.22249
	A3->Y (RF)	0.03318	0.33436	3.18237
	B1->Y (RF)	0.03348	0.39830	3.77284
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.04104	0.31814	3.18628
	A2->Y (RF)	0.04012	0.30631	3.15704
	A3->Y (RF)	0.03357	0.29272	3.13030
	B1->Y (RF)	0.03147	0.35655	3.78067
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.04213	0.27430	3.12447
	A2->Y (RF)	0.03967	0.25979	3.07275
	A3->Y (RF)	0.03000	0.23688	2.95800
	B1->Y (RF)	0.03192	0.34791	4.23346

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00071	0.00056	0.00290
	A1	0.00814	0.00800	0.01035
	A2	0.00074	0.00055	0.00313
	A2	0.00754	0.00722	0.00994
	A3	0.00071	0.00094	0.00619
	A3	0.00649	0.00674	0.01200
	B1	-0.00039	0.00028	0.00770
	B1	0.00583	0.00640	0.01350
sky130_fd_sc_hs__o31ai_2	A1	0.00142	0.00102	0.00558
	A1	0.01645	0.01608	0.02062
	A2	0.00148	0.00111	0.00640
	A2	0.01434	0.01399	0.01929
	A3	0.00139	0.00171	0.01182
	A3	0.01244	0.01277	0.02291
	B1	-0.00163	-0.00007	0.01449
	B1	0.01058	0.01196	0.02541
sky130_fd_sc_hs__o31ai_4	A1	0.00207	0.00143	0.01041
	A1	0.03127	0.03062	0.03956
	A2	0.00216	0.00151	0.01143
	A2	0.02730	0.02663	0.03665
	A3	0.00195	0.00271	0.02209
	A3	0.02340	0.02416	0.04357
	B1	-0.00297	-0.00143	0.01507
	B1	0.01730	0.01857	0.03326

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00975	0.00961	0.01184
	A1	0.00229	0.00216	0.00434
	A2	0.00828	0.00816	0.01031
	A2	0.00141	0.00130	0.00343
	A3	0.00629	0.00633	0.00848
	A3	0.00039	0.00041	0.00254
	B1	0.00834	0.00836	0.01155
	B1	0.00022	0.00026	0.00382
sky130_fd_sc_hs__o31ai_2	A1	0.02005	0.01967	0.02406
	A1	0.00500	0.00460	0.00895
	A2	0.01577	0.01561	0.02009
	A2	0.00273	0.00254	0.00693
	A3	0.01200	0.01203	0.01651
	A3	0.00069	0.00070	0.00507
	B1	0.01684	0.01689	0.02325
	B1	0.00039	0.00056	0.00790
sky130_fd_sc_hs__o31ai_4	A1	0.03723	0.03648	0.04579
	A1	0.00805	0.00729	0.01619
	A2	0.02919	0.02875	0.03784
	A2	0.00372	0.00326	0.01217
	A3	0.02130	0.02147	0.03071
	A3	-0.00059	-0.00049	0.00857
	B1	0.03001	0.03010	0.03629
	B1	0.00132	0.00152	0.00922

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)**	0.00148	0.00150	0.00148
	(A2 * A3 * B1 * !Y)	-0.00170	-0.00175	-0.00174
	(A2 * !B1 * Y)	0.00148	0.00150	0.00148
	(A2 * !B1 * Y)	-0.00170	-0.00174	-0.00174
	(A2 * !A3 * B1 * !Y)	0.00151	0.00150	0.00148
	(A2 * !A3 * B1 * !Y)	-0.00165	-0.00173	-0.00174
	(!A2 * A3 * B1 * !Y)	0.00151	0.00149	0.00148
	(!A2 * A3 * B1 * !Y)	-0.00155	-0.00169	-0.00168
	(!A2 * A3 * !B1 * Y)	0.00148	0.00149	0.00148
	(!A2 * A3 * !B1 * Y)	-0.00157	-0.00169	-0.00168
	(!A2 * !A3 * !B1 * Y)	0.00140	0.00141	0.00140
	(!A2 * !A3 * !B1 * Y)	-0.00176	-0.00177	-0.00177
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00299	0.00302	0.00298
	(A2 * A3 * B1 * !Y)	-0.00346	-0.00363	-0.00359
	(A2 * !B1 * Y)	0.00297	0.00301	0.00297
	(A2 * !B1 * Y)	-0.00348	-0.00363	-0.00360
	(A2 * !A3 * B1 * !Y)	0.00306	0.00302	0.00298
	(A2 * !A3 * B1 * !Y)	-0.00336	-0.00362	-0.00359
	(!A2 * A3 * B1 * !Y)	0.00307	0.00302	0.00298
	(!A2 * A3 * B1 * !Y)	-0.00316	-0.00349	-0.00347
	(!A2 * A3 * !B1 * Y)	0.00298	0.00301	0.00297
	(!A2 * A3 * !B1 * Y)	-0.00322	-0.00350	-0.00347
	(!A2 * !A3 * !B1 * Y)	0.00280	0.00283	0.00281
	(!A2 * !A3 * !B1 * Y)	-0.00367	-0.00369	-0.00367

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00577	0.00583	0.00574
	(A2 * A3 * B1 * !Y)	-0.00688	-0.00713	-0.00711
	(A2 * !B1 * Y)	0.00575	0.00582	0.00574
	(A2 * !B1 * Y)	-0.00692	-0.00715	-0.00712
	(A2 * !A3 * B1 * !Y)	0.00590	0.00583	0.00575
	(A2 * !A3 * B1 * !Y)	-0.00670	-0.00713	-0.00710
	(!A2 * A3 * B1 * !Y)	0.00586	0.00583	0.00575
	(!A2 * A3 * B1 * !Y)	-0.00624	-0.00693	-0.00686
	(!A2 * A3 * !B1 * Y)	0.00571	0.00581	0.00574
	(!A2 * A3 * !B1 * Y)	-0.00636	-0.00694	-0.00687
	(!A2 * !A3 * !B1 * Y)	0.00540	0.00546	0.00542
	(!A2 * !A3 * !B1 * Y)	-0.00726	-0.00730	-0.00727

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)**	-0.00147	-0.00148	-0.00147
	(A2 * A3 * B1 * !Y)	0.00173	0.00175	0.00174
	(A2 * !B1 * Y)	-0.00147	-0.00148	-0.00147
	(A2 * !B1 * Y)	0.00173	0.00174	0.00174
	(A2 * !A3 * B1 * !Y)	-0.00147	-0.00147	-0.00147
	(A2 * !A3 * B1 * !Y)	0.00173	0.00173	0.00174
	(!A2 * A3 * B1 * !Y)	-0.00147	-0.00148	-0.00147
	(!A2 * A3 * B1 * !Y)	0.00168	0.00169	0.00168
	(!A2 * A3 * !B1 * Y)	-0.00147	-0.00148	-0.00147
	(!A2 * A3 * !B1 * Y)	0.00167	0.00169	0.00168
	(!A2 * !A3 * !B1 * Y)	-0.00133	-0.00141	-0.00140
	(!A2 * !A3 * !B1 * Y)	0.00178	0.00179	0.00177

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00298	-0.00299	-0.00297
	(A2 * A3 * B1 * !Y)	0.00359	0.00363	0.00359
	(A2 * !B1 * Y)	-0.00297	-0.00299	-0.00297
	(A2 * !B1 * Y)	0.00360	0.00364	0.00360
	(A2 * !A3 * B1 * !Y)	-0.00298	-0.00299	-0.00297
	(A2 * !A3 * B1 * !Y)	0.00359	0.00363	0.00359
	(!A2 * A3 * B1 * !Y)	-0.00298	-0.00299	-0.00297
	(!A2 * A3 * B1 * !Y)	0.00347	0.00349	0.00347
	(!A2 * A3 * !B1 * Y)	-0.00297	-0.00298	-0.00297
	(!A2 * A3 * !B1 * Y)	0.00347	0.00350	0.00347
	(!A2 * !A3 * !B1 * Y)	-0.00262	-0.00283	-0.00281
	(!A2 * !A3 * !B1 * Y)	0.00372	0.00372	0.00368
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00572	-0.00575	-0.00574
	(A2 * A3 * B1 * !Y)	0.00708	0.00713	0.00711
	(A2 * !B1 * Y)	-0.00572	-0.00574	-0.00573
	(A2 * !B1 * Y)	0.00709	0.00715	0.00712
	(A2 * !A3 * B1 * !Y)	-0.00572	-0.00575	-0.00573
	(A2 * !A3 * B1 * !Y)	0.00707	0.00713	0.00710
	(!A2 * A3 * B1 * !Y)	-0.00572	-0.00576	-0.00573
	(!A2 * A3 * B1 * !Y)	0.00683	0.00693	0.00686
	(!A2 * A3 * !B1 * Y)	-0.00571	-0.00576	-0.00573
	(!A2 * A3 * !B1 * Y)	0.00684	0.00694	0.00687
	(!A2 * !A3 * !B1 * Y)	-0.00503	-0.00545	-0.00542
	(!A2 * !A3 * !B1 * Y)	0.00731	0.00736	0.00729

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)**	0.00180	0.00183	0.00173
	(A1 * A3 * B1 * !Y)	-0.00120	-0.00120	-0.00120
	(A1 * A3 * !B1 * Y)	0.00146	0.00148	0.00146
	(A1 * A3 * !B1 * Y)	-0.00151	-0.00152	-0.00151
	(A1 * !A3 * B1 * !Y)	0.00169	0.00172	0.00168
	(A1 * !A3 * B1 * !Y)	-0.00102	-0.00104	-0.00103
	(A1 * !A3 * !B1 * Y)	0.00148	0.00148	0.00146
	(A1 * !A3 * !B1 * Y)	-0.00200	-0.00201	-0.00201
	(!A1 * A3 * B1 * !Y)	0.00201	0.00168	0.00168
	(!A1 * A3 * B1 * !Y)	-0.00148	-0.00179	-0.00181
	(!A1 * A3 * !B1 * Y)	0.00146	0.00146	0.00146
	(!A1 * A3 * !B1 * Y)	-0.00198	-0.00202	-0.00201
	(!A1 * !A3 * !B1 * Y)	0.00138	0.00139	0.00137
	(!A1 * !A3 * !B1 * Y)	-0.00205	-0.00206	-0.00204
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00319	0.00322	0.00304
	(A1 * A3 * B1 * !Y)	-0.00238	-0.00238	-0.00237
	(A1 * A3 * !B1 * Y)	0.00289	0.00292	0.00289
	(A1 * A3 * !B1 * Y)	-0.00262	-0.00263	-0.00261
	(A1 * !A3 * B1 * !Y)	0.00296	0.00301	0.00294
	(A1 * !A3 * B1 * !Y)	-0.00197	-0.00200	-0.00198
	(A1 * !A3 * !B1 * Y)	0.00287	0.00287	0.00289
	(A1 * !A3 * !B1 * Y)	-0.00348	-0.00357	-0.00356
	(!A1 * A3 * B1 * !Y)	0.00352	0.00296	0.00292
	(!A1 * A3 * B1 * !Y)	-0.00290	-0.00356	-0.00357
	(!A1 * A3 * !B1 * Y)	0.00287	0.00290	0.00288
	(!A1 * A3 * !B1 * Y)	-0.00352	-0.00361	-0.00360
	(!A1 * !A3 * !B1 * Y)	0.00275	0.00275	0.00274
	(!A1 * !A3 * !B1 * Y)	-0.00366	-0.00366	-0.00365

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00629	0.00640	0.00602
	(A1 * A3 * B1 * !Y)	-0.00469	-0.00473	-0.00470
	(A1 * A3 * !B1 * Y)	0.00569	0.00579	0.00571
	(A1 * A3 * !B1 * Y)	-0.00523	-0.00525	-0.00521
	(A1 * !A3 * B1 * !Y)	0.00587	0.00597	0.00583
	(A1 * !A3 * B1 * !Y)	-0.00394	-0.00400	-0.00395
	(A1 * !A3 * !B1 * Y)	0.00570	0.00569	0.00571
	(A1 * !A3 * !B1 * Y)	-0.00700	-0.00713	-0.00711
	(!A1 * A3 * B1 * !Y)	0.00711	0.00591	0.00580
	(!A1 * A3 * B1 * !Y)	-0.00575	-0.00709	-0.00712
	(!A1 * A3 * !B1 * Y)	0.00571	0.00575	0.00570
	(!A1 * A3 * !B1 * Y)	-0.00708	-0.00721	-0.00718
	(!A1 * !A3 * !B1 * Y)	0.00537	0.00544	0.00539
	(!A1 * !A3 * !B1 * Y)	-0.00731	-0.00735	-0.00731

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)**	-0.00167	-0.00168	-0.00168
	(A1 * A3 * B1 * !Y)	0.00120	0.00120	0.00120
	(A1 * A3 * !B1 * Y)	-0.00146	-0.00147	-0.00146
	(A1 * A3 * !B1 * Y)	0.00151	0.00152	0.00151
	(A1 * !A3 * B1 * !Y)	-0.00167	-0.00167	-0.00165
	(A1 * !A3 * B1 * !Y)	0.00105	0.00106	0.00106
	(A1 * !A3 * !B1 * Y)	-0.00146	-0.00146	-0.00146
	(A1 * !A3 * !B1 * Y)	0.00200	0.00201	0.00201
	(!A1 * A3 * B1 * !Y)	-0.00167	-0.00167	-0.00167
	(!A1 * A3 * B1 * !Y)	0.00180	0.00181	0.00181
	(!A1 * A3 * !B1 * Y)	-0.00146	-0.00146	-0.00146
	(!A1 * A3 * !B1 * Y)	0.00201	0.00203	0.00201
	(!A1 * !A3 * !B1 * Y)	-0.00130	-0.00138	-0.00137
	(!A1 * !A3 * !B1 * Y)	0.00206	0.00206	0.00205
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00295	-0.00296	-0.00295
	(A1 * A3 * B1 * !Y)	0.00238	0.00238	0.00237
	(A1 * A3 * !B1 * Y)	-0.00288	-0.00289	-0.00288
	(A1 * A3 * !B1 * Y)	0.00262	0.00263	0.00261
	(A1 * !A3 * B1 * !Y)	-0.00290	-0.00291	-0.00288
	(A1 * !A3 * B1 * !Y)	0.00204	0.00206	0.00205
	(A1 * !A3 * !B1 * Y)	-0.00287	-0.00287	-0.00288
	(A1 * !A3 * !B1 * Y)	0.00355	0.00357	0.00356
	(!A1 * A3 * B1 * !Y)	-0.00291	-0.00292	-0.00290
	(!A1 * A3 * B1 * !Y)	0.00355	0.00357	0.00357
	(!A1 * A3 * !B1 * Y)	-0.00287	-0.00289	-0.00288
	(!A1 * A3 * !B1 * Y)	0.00359	0.00361	0.00360
	(!A1 * !A3 * !B1 * Y)	-0.00254	-0.00274	-0.00274
	(!A1 * !A3 * !B1 * Y)	0.00369	0.00370	0.00366

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00582	-0.00587	-0.00584
	(A1 * A3 * B1 * !Y)	0.00469	0.00473	0.00470
	(A1 * A3 * !B1 * Y)	-0.00569	-0.00573	-0.00569
	(A1 * A3 * !B1 * Y)	0.00523	0.00525	0.00521
	(A1 * !A3 * B1 * !Y)	-0.00573	-0.00575	-0.00571
	(A1 * !A3 * B1 * !Y)	0.00404	0.00406	0.00409
	(A1 * !A3 * !B1 * Y)	-0.00570	-0.00569	-0.00569
	(A1 * !A3 * !B1 * Y)	0.00712	0.00713	0.00711
	(!A1 * A3 * B1 * !Y)	-0.00578	-0.00579	-0.00575
	(!A1 * A3 * B1 * !Y)	0.00711	0.00712	0.00712
	(!A1 * A3 * !B1 * Y)	-0.00570	-0.00571	-0.00569
	(!A1 * A3 * !B1 * Y)	0.00719	0.00721	0.00718
	(!A1 * !A3 * !B1 * Y)	-0.00500	-0.00543	-0.00539
	(!A1 * !A3 * !B1 * Y)	0.00736	0.00740	0.00733

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00179	0.00182	0.00179
	(A2 * B1 * !Y)	-0.00087	-0.00088	-0.00087
	(A2 * !B1 * Y)	0.00142	0.00140	0.00140
	(A2 * !B1 * Y)	-0.00196	-0.00200	-0.00199
	(A1 * !A2 * B1 * !Y)	0.00179	0.00182	0.00180
	(A1 * !A2 * B1 * !Y)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * !B1 * Y)	0.00140	0.00140	0.00140
	(A1 * !A2 * !B1 * Y)	-0.00178	-0.00193	-0.00192
	(!A1 * !A2 * !B1 * Y)	0.00134	0.00134	0.00133
	(!A1 * !A2 * !B1 * Y)	-0.00202	-0.00203	-0.00202

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00334	0.00341	0.00336
	(A2 * B1 * !Y)	-0.00172	-0.00176	-0.00173
	(A2 * !B1 * Y)	0.00281	0.00284	0.00282
	(A2 * !B1 * Y)	-0.00363	-0.00376	-0.00374
	(A1 * !A2 * B1 * !Y)	0.00337	0.00341	0.00336
	(A1 * !A2 * B1 * !Y)	-0.00174	-0.00176	-0.00172
	(A1 * !A2 * !B1 * Y)	0.00281	0.00283	0.00282
	(A1 * !A2 * !B1 * Y)	-0.00335	-0.00357	-0.00358
	(!A1 * !A2 * !B1 * Y)	0.00268	0.00269	0.00267
	(!A1 * !A2 * !B1 * Y)	-0.00381	-0.00381	-0.00380
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00655	0.00669	0.00658
	(A2 * B1 * !Y)	-0.00343	-0.00350	-0.00344
	(A2 * !B1 * Y)	0.00555	0.00553	0.00553
	(A2 * !B1 * Y)	-0.00723	-0.00741	-0.00740
	(A1 * !A2 * B1 * !Y)	0.00655	0.00658	0.00657
	(A1 * !A2 * B1 * !Y)	-0.00342	-0.00344	-0.00343
	(A1 * !A2 * !B1 * Y)	0.00555	0.00558	0.00553
	(A1 * !A2 * !B1 * Y)	-0.00660	-0.00704	-0.00701
	(!A1 * !A2 * !B1 * Y)	0.00520	0.00526	0.00522
	(!A1 * !A2 * !B1 * Y)	-0.00753	-0.00758	-0.00754

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00172	-0.00174	-0.00179
	(A2 * B1 * !Y)	0.00092	0.00093	0.00089
	(A2 * !B1 * Y)	-0.00141	-0.00140	-0.00140
	(A2 * !B1 * Y)	0.00200	0.00201	0.00199
	(A1 * !A2 * B1 * !Y)	-0.00165	-0.00167	-0.00177
	(A1 * !A2 * B1 * !Y)	0.00096	0.00097	0.00088
	(A1 * !A2 * !B1 * Y)	-0.00140	-0.00140	-0.00140
	(A1 * !A2 * !B1 * Y)	0.00192	0.00193	0.00192
	(!A1 * !A2 * !B1 * Y)	-0.00126	-0.00134	-0.00133
	(!A1 * !A2 * !B1 * Y)	0.00203	0.00204	0.00202
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00321	-0.00323	-0.00334
	(A2 * B1 * !Y)	0.00185	0.00185	0.00177
	(A2 * !B1 * Y)	-0.00281	-0.00283	-0.00281
	(A2 * !B1 * Y)	0.00373	0.00376	0.00374
	(A1 * !A2 * B1 * !Y)	-0.00301	-0.00303	-0.00330
	(A1 * !A2 * B1 * !Y)	0.00196	0.00196	0.00177
	(A1 * !A2 * !B1 * Y)	-0.00281	-0.00281	-0.00281
	(A1 * !A2 * !B1 * Y)	0.00357	0.00357	0.00358
	(!A1 * !A2 * !B1 * Y)	-0.00248	-0.00269	-0.00267
	(!A1 * !A2 * !B1 * Y)	0.00381	0.00384	0.00381
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00629	-0.00633	-0.00654
	(A2 * B1 * !Y)	0.00369	0.00369	0.00351
	(A2 * !B1 * Y)	-0.00550	-0.00552	-0.00551
	(A2 * !B1 * Y)	0.00738	0.00741	0.00740
	(A1 * !A2 * B1 * !Y)	-0.00592	-0.00593	-0.00646
	(A1 * !A2 * B1 * !Y)	0.00391	0.00389	0.00352
	(A1 * !A2 * !B1 * Y)	-0.00553	-0.00553	-0.00551
	(A1 * !A2 * !B1 * Y)	0.00702	0.00704	0.00701
	(!A1 * !A2 * !B1 * Y)	-0.00489	-0.00526	-0.00522
	(!A1 * !A2 * !B1 * Y)	0.00757	0.00760	0.00756

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)	0.00055	0.00055	0.00052
	(!A1 * !A2 * !A3 * Y)	-0.00206	-0.00206	-0.00213
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00109	0.00109	0.00100
	(!A1 * !A2 * !A3 * Y)	-0.00406	-0.00410	-0.00425
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00194	0.00195	0.00179
	(!A1 * !A2 * !A3 * Y)	-0.00470	-0.00473	-0.00501

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)	-0.00051	-0.00050	-0.00050
	(!A1 * !A2 * !A3 * Y)	0.00214	0.00213	0.00213
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00098	-0.00097	-0.00097
	(!A1 * !A2 * !A3 * Y)	0.00428	0.00429	0.00427
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00172	-0.00173	-0.00173
	(!A1 * !A2 * !A3 * Y)	0.00501	0.00506	0.00504

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00258	0.00253	0.00253	0.00234	1.04737
sky130_fd_sc_hs__o31a_2	0.00274	0.00266	0.00268	0.00280	1.82907
sky130_fd_sc_hs__o31a_4	0.00468	0.00500	0.00496	0.00493	3.96398

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.18074	0.43385
sky130_fd_sc_hs__o31a_2	0.00000	0.14264	0.28171
sky130_fd_sc_hs__o31a_4	0.00000	0.28785	0.56341

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)	0.09062	0.63376	6.33396
	A2->X (RR)	0.08853	0.62289	6.26827
	A3->X (RR)	0.07797	0.59911	6.23889
	B1->X (RR)	0.08221	0.63038	6.55783
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.09422	0.55250	6.15140
	A2->X (RR)	0.09252	0.54438	6.09472
	A3->X (RR)	0.08158	0.52426	6.05257
	B1->X (RR)	0.08665	0.55800	6.36882
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.09960	0.48098	6.38149
	A2->X (RR)	0.09600	0.46728	6.30830
	A3->X (RR)	0.08450	0.44783	6.30002
	B1->X (RR)	0.09102	0.48962	6.58852

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.24115	0.70120	4.77441
	A2->X (FF)	0.22460	0.70803	4.92217
	A3->X (FF)	0.19093	0.67908	4.83037
	B1->X (FF)	0.08024	0.53563	4.43650
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.30534	0.75558	4.74464
	A2->X (FF)	0.28834	0.76417	4.90917
	A3->X (FF)	0.25391	0.73794	4.81572
	B1->X (FF)	0.08516	0.51288	4.21270
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.30791	0.73831	5.06930
	A2->X (FF)	0.29096	0.74105	5.21232
	A3->X (FF)	0.24419	0.70190	5.11285
	B1->X (FF)	0.07980	0.47901	4.56580

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01163	0.01152	0.01982
	A1	0.00492	0.00481	0.01330
	A2	0.01005	0.01018	0.01863
	A2	0.00423	0.00435	0.01305
	A3	0.00835	0.00855	0.02075
	A3	0.00330	0.00350	0.01595
	B1	0.01025	0.01070	0.03425
	B1	0.00335	0.00427	0.03082
sky130_fd_sc_hs__o31a_2	A1	0.01463	0.01476	0.02191
	A1	0.00751	0.00765	0.01543
	A2	0.01297	0.01337	0.02062
	A2	0.00678	0.00719	0.01510
	A3	0.01130	0.01175	0.02153
	A3	0.00582	0.00631	0.01674
	B1	0.01322	0.01373	0.03486
	B1	0.00559	0.00649	0.03110
sky130_fd_sc_hs__o31a_4	A1	0.02801	0.02877	0.04918
	A1	0.01495	0.01581	0.03690
	A2	0.02513	0.02596	0.04613
	A2	0.01325	0.01410	0.03505
	A3	0.02062	0.02166	0.05068
	A3	0.01072	0.01183	0.04176
	B1	0.02200	0.02353	0.06493
	B1	0.01059	0.01243	0.05721

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00393	0.00373	0.01357
	A1	0.01058	0.01037	0.01960
	A2	0.00398	0.00395	0.01440
	A2	0.00970	0.00970	0.01962
	A3	0.00392	0.00459	0.02102
	A3	0.00887	0.00954	0.02510
	B1	0.00292	0.00453	0.03018
	B1	0.00815	0.00961	0.03257
sky130_fd_sc_hs__o31a_2	A1	0.00689	0.00598	0.01549
	A1	0.01392	0.01320	0.02203
	A2	0.00684	0.00648	0.01574
	A2	0.01291	0.01255	0.02178
	A3	0.00680	0.00696	0.02187
	A3	0.01214	0.01237	0.02717
	B1	0.00499	0.00686	0.03033
	B1	0.01087	0.01233	0.03386
sky130_fd_sc_hs__o31a_4	A1	0.01383	0.01315	0.03377
	A1	0.02682	0.02626	0.04538
	A2	0.01348	0.01271	0.03445
	A2	0.02523	0.02467	0.04425
	A3	0.01390	0.01429	0.04687
	A3	0.02355	0.02405	0.05475
	B1	0.01008	0.01306	0.06041
	B1	0.02083	0.02343	0.06750

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)**	0.00142	0.00143	0.00142
	(A2 * A3 * B1 * X)	-0.00151	-0.00156	-0.00155
	(A2 * !B1 * !X)	0.00122	0.00123	0.00121
	(A2 * !B1 * !X)	-0.00172	-0.00176	-0.00175
	(A2 * !A3 * B1 * X)	0.00148	0.00143	0.00142
	(A2 * !A3 * B1 * X)	-0.00144	-0.00155	-0.00155
	(!A2 * A3 * B1 * X)	0.00147	0.00143	0.00142
	(!A2 * A3 * B1 * X)	-0.00135	-0.00151	-0.00150
	(!A2 * A3 * !B1 * !X)	0.00121	0.00122	0.00121
	(!A2 * A3 * !B1 * !X)	-0.00159	-0.00171	-0.00170
	(!A2 * !A3 * !B1 * !X)	0.00115	0.00115	0.00114
	(!A2 * !A3 * !B1 * !X)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00156	0.00158	0.00156
	(A2 * A3 * B1 * X)	-0.00158	-0.00163	-0.00162
	(A2 * !B1 * !X)	0.00145	0.00147	0.00145
	(A2 * !B1 * !X)	-0.00169	-0.00172	-0.00173
	(A2 * !A3 * B1 * X)	0.00163	0.00158	0.00156
	(A2 * !A3 * B1 * X)	-0.00150	-0.00162	-0.00162
	(!A2 * A3 * B1 * X)	0.00161	0.00158	0.00156
	(!A2 * A3 * B1 * X)	-0.00142	-0.00158	-0.00157
	(!A2 * A3 * !B1 * !X)	0.00145	0.00147	0.00145
	(!A2 * A3 * !B1 * !X)	-0.00156	-0.00168	-0.00167
	(!A2 * !A3 * !B1 * !X)	0.00139	0.00139	0.00138
	(!A2 * !A3 * !B1 * !X)	-0.00175	-0.00175	-0.00174

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00240	0.00242	0.00239
	(A2 * A3 * B1 * X)	-0.00313	-0.00323	-0.00323
	(A2 * !B1 * !X)	0.00239	0.00242	0.00238
	(A2 * !B1 * !X)	-0.00315	-0.00324	-0.00324
	(A2 * !A3 * B1 * X)	0.00254	0.00242	0.00239
	(A2 * !A3 * B1 * X)	-0.00295	-0.00322	-0.00323
	(!A2 * A3 * B1 * X)	0.00252	0.00243	0.00239
	(!A2 * A3 * B1 * X)	-0.00278	-0.00314	-0.00312
	(!A2 * A3 * !B1 * !X)	0.00239	0.00241	0.00238
	(!A2 * A3 * !B1 * !X)	-0.00288	-0.00314	-0.00311
	(!A2 * !A3 * !B1 * !X)	0.00226	0.00229	0.00227
	(!A2 * !A3 * !B1 * !X)	-0.00330	-0.00332	-0.00331

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)**	-0.00141	-0.00142	-0.00141
	(A2 * A3 * B1 * X)	0.00155	0.00157	0.00155
	(A2 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(A2 * !B1 * !X)	0.00175	0.00177	0.00175
	(A2 * !A3 * B1 * X)	-0.00141	-0.00142	-0.00141
	(A2 * !A3 * B1 * X)	0.00155	0.00157	0.00155
	(!A2 * A3 * B1 * X)	-0.00140	-0.00141	-0.00141
	(!A2 * A3 * B1 * X)	0.00149	0.00151	0.00150
	(!A2 * A3 * !B1 * !X)	-0.00121	-0.00121	-0.00121
	(!A2 * A3 * !B1 * !X)	0.00169	0.00171	0.00170
	(!A2 * !A3 * !B1 * !X)	-0.00108	-0.00115	-0.00114
	(!A2 * !A3 * !B1 * !X)	0.00178	0.00179	0.00177

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00156	-0.00157	-0.00156
	(A2 * A3 * B1 * X)	0.00162	0.00163	0.00162
	(A2 * !B1 * !X)	-0.00145	-0.00144	-0.00145
	(A2 * !B1 * !X)	0.00173	0.00172	0.00173
	(A2 * !A3 * B1 * X)	-0.00156	-0.00156	-0.00156
	(A2 * !A3 * B1 * X)	0.00162	0.00163	0.00162
	(!A2 * A3 * B1 * X)	-0.00155	-0.00156	-0.00155
	(!A2 * A3 * B1 * X)	0.00156	0.00158	0.00157
	(!A2 * A3 * !B1 * !X)	-0.00145	-0.00145	-0.00145
	(!A2 * A3 * !B1 * !X)	0.00167	0.00168	0.00167
	(!A2 * !A3 * !B1 * !X)	-0.00131	-0.00139	-0.00138
	(!A2 * !A3 * !B1 * !X)	0.00175	0.00177	0.00175
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00238	-0.00238	-0.00238
	(A2 * A3 * B1 * X)	0.00323	0.00323	0.00323
	(A2 * !B1 * !X)	-0.00238	-0.00238	-0.00237
	(A2 * !B1 * !X)	0.00324	0.00324	0.00324
	(A2 * !A3 * B1 * X)	-0.00237	-0.00238	-0.00238
	(A2 * !A3 * B1 * X)	0.00320	0.00322	0.00323
	(!A2 * A3 * B1 * X)	-0.00238	-0.00238	-0.00237
	(!A2 * A3 * B1 * X)	0.00312	0.00314	0.00312
	(!A2 * A3 * !B1 * !X)	-0.00238	-0.00239	-0.00238
	(!A2 * A3 * !B1 * !X)	0.00312	0.00314	0.00311
	(!A2 * !A3 * !B1 * !X)	-0.00212	-0.00226	-0.00227
	(!A2 * !A3 * !B1 * !X)	0.00334	0.00334	0.00332

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)**	0.00143	0.00147	0.00138
	(A1 * A3 * B1 * X)	-0.00101	-0.00101	-0.00101
	(A1 * A3 * !B1 * !X)	0.00125	0.00127	0.00125
	(A1 * A3 * !B1 * !X)	-0.00115	-0.00115	-0.00115
	(A1 * !A3 * B1 * X)	0.00132	0.00135	0.00132
	(A1 * !A3 * B1 * X)	-0.00084	-0.00085	-0.00085
	(A1 * !A3 * !B1 * !X)	0.00126	0.00127	0.00125
	(A1 * !A3 * !B1 * !X)	-0.00157	-0.00158	-0.00158
	(!A1 * A3 * B1 * X)	0.00163	0.00135	0.00131
	(!A1 * A3 * B1 * X)	-0.00121	-0.00153	-0.00153
	(!A1 * A3 * !B1 * !X)	0.00126	0.00127	0.00125
	(!A1 * A3 * !B1 * !X)	-0.00157	-0.00159	-0.00159
	(!A1 * !A3 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A3 * !B1 * !X)	-0.00160	-0.00161	-0.00161
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00158	0.00161	0.00152
	(A1 * A3 * B1 * X)	-0.00104	-0.00104	-0.00104
	(A1 * A3 * !B1 * !X)	0.00141	0.00142	0.00140
	(A1 * A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(A1 * !A3 * B1 * X)	0.00147	0.00149	0.00146
	(A1 * !A3 * B1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * !A3 * !B1 * !X)	0.00141	0.00141	0.00140
	(A1 * !A3 * !B1 * !X)	-0.00159	-0.00161	-0.00160
	(!A1 * A3 * B1 * X)	0.00178	0.00146	0.00146
	(!A1 * A3 * B1 * X)	-0.00124	-0.00154	-0.00156
	(!A1 * A3 * !B1 * !X)	0.00141	0.00140	0.00140
	(!A1 * A3 * !B1 * !X)	-0.00159	-0.00161	-0.00161
	(!A1 * !A3 * !B1 * !X)	0.00133	0.00134	0.00133
	(!A1 * !A3 * !B1 * !X)	-0.00162	-0.00163	-0.00162

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00305	0.00312	0.00295
	(A1 * A3 * B1 * X)	-0.00214	-0.00213	-0.00213
	(A1 * A3 * !B1 * !X)	0.00282	0.00286	0.00283
	(A1 * A3 * !B1 * !X)	-0.00232	-0.00233	-0.00232
	(A1 * !A3 * B1 * X)	0.00285	0.00288	0.00284
	(A1 * !A3 * B1 * X)	-0.00180	-0.00182	-0.00182
	(A1 * !A3 * !B1 * !X)	0.00281	0.00282	0.00282
	(A1 * !A3 * !B1 * !X)	-0.00317	-0.00322	-0.00322
	(!A1 * A3 * B1 * X)	0.00343	0.00289	0.00283
	(!A1 * A3 * B1 * X)	-0.00253	-0.00319	-0.00321
	(!A1 * A3 * !B1 * !X)	0.00281	0.00286	0.00282
	(!A1 * A3 * !B1 * !X)	-0.00309	-0.00320	-0.00319
	(!A1 * !A3 * !B1 * !X)	0.00269	0.00271	0.00269
	(!A1 * !A3 * !B1 * !X)	-0.00327	-0.00328	-0.00327

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)**	-0.00131	-0.00132	-0.00131
	(A1 * A3 * B1 * X)	0.00101	0.00101	0.00101
	(A1 * A3 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(A1 * A3 * !B1 * !X)	0.00115	0.00115	0.00115
	(A1 * !A3 * B1 * X)	-0.00130	-0.00130	-0.00129
	(A1 * !A3 * B1 * X)	0.00087	0.00088	0.00088
	(A1 * !A3 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(A1 * !A3 * !B1 * !X)	0.00159	0.00158	0.00158
	(!A1 * A3 * B1 * X)	-0.00130	-0.00131	-0.00130
	(!A1 * A3 * B1 * X)	0.00153	0.00155	0.00154
	(!A1 * A3 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * A3 * !B1 * !X)	0.00158	0.00159	0.00159
	(!A1 * !A3 * !B1 * !X)	-0.00111	-0.00119	-0.00118
	(!A1 * !A3 * !B1 * !X)	0.00162	0.00162	0.00161
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00145	-0.00146	-0.00146
	(A1 * A3 * B1 * X)	0.00104	0.00104	0.00104
	(A1 * A3 * !B1 * !X)	-0.00139	-0.00140	-0.00139
	(A1 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A3 * B1 * X)	-0.00144	-0.00145	-0.00143
	(A1 * !A3 * B1 * X)	0.00090	0.00090	0.00090
	(A1 * !A3 * !B1 * !X)	-0.00139	-0.00141	-0.00140
	(A1 * !A3 * !B1 * !X)	0.00160	0.00162	0.00160
	(!A1 * A3 * B1 * X)	-0.00145	-0.00145	-0.00144
	(!A1 * A3 * B1 * X)	0.00156	0.00157	0.00156
	(!A1 * A3 * !B1 * !X)	-0.00139	-0.00140	-0.00139
	(!A1 * A3 * !B1 * !X)	0.00160	0.00162	0.00161
	(!A1 * !A3 * !B1 * !X)	-0.00126	-0.00134	-0.00133
	(!A1 * !A3 * !B1 * !X)	0.00164	0.00164	0.00163

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00284	-0.00283	-0.00283
	(A1 * A3 * B1 * X)	0.00214	0.00213	0.00213
	(A1 * A3 * !B1 * !X)	-0.00282	-0.00283	-0.00282
	(A1 * A3 * !B1 * !X)	0.00232	0.00233	0.00232
	(A1 * !A3 * B1 * X)	-0.00279	-0.00281	-0.00277
	(A1 * !A3 * B1 * X)	0.00186	0.00188	0.00188
	(A1 * !A3 * !B1 * !X)	-0.00281	-0.00282	-0.00281
	(A1 * !A3 * !B1 * !X)	0.00321	0.00322	0.00322
	(!A1 * A3 * B1 * X)	-0.00281	-0.00281	-0.00280
	(!A1 * A3 * B1 * X)	0.00319	0.00320	0.00321
	(!A1 * A3 * !B1 * !X)	-0.00281	-0.00282	-0.00281
	(!A1 * A3 * !B1 * !X)	0.00318	0.00320	0.00319
	(!A1 * !A3 * !B1 * !X)	-0.00256	-0.00271	-0.00269
	(!A1 * !A3 * !B1 * !X)	0.00330	0.00331	0.00328

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00141	0.00144	0.00142
	(A2 * B1 * X)	-0.00078	-0.00080	-0.00079
	(A2 * !B1 * !X)	0.00124	0.00124	0.00124
	(A2 * !B1 * !X)	-0.00157	-0.00162	-0.00161
	(A1 * !A2 * B1 * X)	0.00141	0.00144	0.00142
	(A1 * !A2 * B1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * !B1 * !X)	0.00124	0.00125	0.00124
	(A1 * !A2 * !B1 * !X)	-0.00144	-0.00155	-0.00154
	(!A1 * !A2 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * !A2 * !B1 * !X)	-0.00164	-0.00164	-0.00163

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00163	0.00167	0.00164
	(A2 * B1 * X)	-0.00079	-0.00080	-0.00079
	(A2 * !B1 * !X)	0.00144	0.00144	0.00144
	(A2 * !B1 * !X)	-0.00160	-0.00164	-0.00164
	(A1 * !A2 * B1 * X)	0.00163	0.00167	0.00164
	(A1 * !A2 * B1 * X)	-0.00078	-0.00080	-0.00079
	(A1 * !A2 * !B1 * !X)	0.00144	0.00146	0.00144
	(A1 * !A2 * !B1 * !X)	-0.00147	-0.00158	-0.00157
	(!A1 * !A2 * !B1 * !X)	0.00137	0.00138	0.00136
	(!A1 * !A2 * !B1 * !X)	-0.00166	-0.00166	-0.00166
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00280	0.00286	0.00281
	(A2 * B1 * X)	-0.00174	-0.00178	-0.00175
	(A2 * !B1 * !X)	0.00255	0.00257	0.00255
	(A2 * !B1 * !X)	-0.00322	-0.00335	-0.00334
	(A1 * !A2 * B1 * X)	0.00280	0.00286	0.00281
	(A1 * !A2 * B1 * X)	-0.00174	-0.00178	-0.00174
	(A1 * !A2 * !B1 * !X)	0.00254	0.00259	0.00255
	(A1 * !A2 * !B1 * !X)	-0.00295	-0.00321	-0.00319
	(!A1 * !A2 * !B1 * !X)	0.00239	0.00240	0.00238
	(!A1 * !A2 * !B1 * !X)	-0.00345	-0.00345	-0.00344

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00136	-0.00137	-0.00140
	(A2 * B1 * X)	0.00084	0.00085	0.00081
	(A2 * !B1 * !X)	-0.00123	-0.00124	-0.00124
	(A2 * !B1 * !X)	0.00160	0.00162	0.00161
	(A1 * !A2 * B1 * X)	-0.00129	-0.00130	-0.00139
	(A1 * !A2 * B1 * X)	0.00088	0.00088	0.00081
	(A1 * !A2 * !B1 * !X)	-0.00124	-0.00124	-0.00124
	(A1 * !A2 * !B1 * !X)	0.00154	0.00155	0.00154
	(!A1 * !A2 * !B1 * !X)	-0.00110	-0.00118	-0.00117
	(!A1 * !A2 * !B1 * !X)	0.00165	0.00165	0.00164
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00158	-0.00159	-0.00163
	(A2 * B1 * X)	0.00084	0.00085	0.00081
	(A2 * !B1 * !X)	-0.00143	-0.00144	-0.00144
	(A2 * !B1 * !X)	0.00163	0.00164	0.00164
	(A1 * !A2 * B1 * X)	-0.00152	-0.00153	-0.00162
	(A1 * !A2 * B1 * X)	0.00088	0.00088	0.00080
	(A1 * !A2 * !B1 * !X)	-0.00144	-0.00145	-0.00144
	(A1 * !A2 * !B1 * !X)	0.00157	0.00158	0.00157
	(!A1 * !A2 * !B1 * !X)	-0.00129	-0.00138	-0.00136
	(!A1 * !A2 * !B1 * !X)	0.00167	0.00167	0.00166
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00264	-0.00267	-0.00279
	(A2 * B1 * X)	0.00189	0.00190	0.00179
	(A2 * !B1 * !X)	-0.00255	-0.00256	-0.00254
	(A2 * !B1 * !X)	0.00335	0.00335	0.00334
	(A1 * !A2 * B1 * X)	-0.00251	-0.00253	-0.00276
	(A1 * !A2 * B1 * X)	0.00196	0.00197	0.00179
	(A1 * !A2 * !B1 * !X)	-0.00254	-0.00256	-0.00254
	(A1 * !A2 * !B1 * !X)	0.00319	0.00321	0.00319
	(!A1 * !A2 * !B1 * !X)	-0.00222	-0.00240	-0.00238
	(!A1 * !A2 * !B1 * !X)	0.00348	0.00348	0.00345

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)	0.00047	0.00046	0.00043
	(!A1 * !A2 * !A3 * !X)	-0.00163	-0.00164	-0.00170
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00060	0.00060	0.00056
	(!A1 * !A2 * !A3 * !X)	-0.00203	-0.00203	-0.00210
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00089	0.00090	0.00081
	(!A1 * !A2 * !A3 * !X)	-0.00381	-0.00384	-0.00398

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)	-0.00042	-0.00042	-0.00042
	(!A1 * !A2 * !A3 * !X)	0.00170	0.00173	0.00171
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00055	-0.00055	-0.00054
	(!A1 * !A2 * !A3 * !X)	0.00212	0.00215	0.00211
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * !A3 * !X)	0.00401	0.00406	0.00400

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00263	0.00289	0.00283	0.00279	0.00289	0.34927
sky130_fd_sc_hs__o32ai_2	0.00556	0.00521	0.00565	0.00535	0.00543	0.62856
sky130_fd_sc_hs__o32ai_4	0.01050	0.01054	0.01067	0.01092	0.01059	1.13478

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.03058	0.10576
sky130_fd_sc_hs__o32ai_2	0.00000	0.06115	0.21153
sky130_fd_sc_hs__o32ai_4	0.00000	0.12230	0.42305

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)	0.21363	1.17233	10.30600
	A2->Y (FR)	0.20071	1.18600	10.83010
	A3->Y (FR)	0.16469	1.14326	10.78620
	B1->Y (FR)	0.08112	0.83230	8.40420
	B2->Y (FR)	0.06654	0.82586	8.60351
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.22480	1.03340	10.17270
	A2->Y (FR)	0.20974	1.05210	10.83450
	A3->Y (FR)	0.16524	1.00401	10.79850
	B1->Y (FR)	0.08477	0.76051	8.61717
	B2->Y (FR)	0.06005	0.74535	8.79442
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.22475	0.90330	9.90455
	A2->Y (FR)	0.20949	0.92215	10.58200
	A3->Y (FR)	0.16395	0.87735	10.63310
	B1->Y (FR)	0.08092	0.65612	8.30311
	B2->Y (FR)	0.05619	0.64777	8.58674

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.04941	0.36914	3.23733
	A2->Y (RF)	0.05025	0.37134	3.31362
	A3->Y (RF)	0.04251	0.35907	3.28851
	B1->Y (RF)	0.03915	0.40535	3.81585
	B2->Y (RF)	0.03286	0.39101	3.76281
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.05080	0.32219	3.08831
	A2->Y (RF)	0.05212	0.32966	3.24205
	A3->Y (RF)	0.04230	0.31414	3.20532
	B1->Y (RF)	0.03986	0.36082	3.78928
	B2->Y (RF)	0.03200	0.35096	3.82113
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.05426	0.29363	3.18121
	A2->Y (RF)	0.04974	0.27766	3.12041
	A3->Y (RF)	0.03829	0.25627	3.04511
	B1->Y (RF)	0.05330	0.37514	4.21787
	B2->Y (RF)	0.04367	0.37673	4.42635

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00165	0.00147	0.00387
	A1	0.01015	0.00998	0.01232
	A2	0.00176	0.00157	0.00421
	A2	0.00938	0.00919	0.01175
	A3	0.00174	0.00196	0.00731
	A3	0.00830	0.00853	0.01365
	B1	-0.00019	-0.00031	0.00289
	B1	0.00698	0.00685	0.00990
	B2	-0.00019	0.00028	0.00660
	B2	0.00601	0.00641	0.01234
sky130_fd_sc_hs__o32ai_2	A1	0.00294	0.00251	0.00724
	A1	0.02080	0.02044	0.02489
	A2	0.00317	0.00273	0.00771
	A2	0.01859	0.01821	0.02303
	A3	0.00305	0.00327	0.01366
	A3	0.01683	0.01708	0.02708
	B1	-0.00065	-0.00082	0.00539
	B1	0.01392	0.01370	0.01952
	B2	-0.00086	-0.00025	0.01188
	B2	0.01193	0.01275	0.02384

sky130_fd_sc_hs__o32ai_4	**A1**	0.00587	0.00508	0.01610
	A1	0.04098	0.03997	0.05103
	A2	0.00597	0.00517	0.01693
	A2	0.03702	0.03625	0.04782
	A3	0.00597	0.00681	0.02879
	A3	0.03308	0.03358	0.05549
	B1	-0.00142	-0.00184	0.01017
	B1	0.02814	0.02761	0.03848
	B2	-0.00153	0.00034	0.02077
	B2	0.02397	0.02499	0.04405

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01187	0.01179	0.01385
	A1	0.00315	0.00300	0.00510
	A2	0.01006	0.00999	0.01197
	A2	0.00216	0.00206	0.00410
	A3	0.00808	0.00807	0.01012
	A3	0.00119	0.00119	0.00321
	B1	0.01018	0.01014	0.01308
	B1	0.00318	0.00314	0.00600
	B2	0.00840	0.00842	0.01130
	B2	0.00016	0.00023	0.00335

sky130_fd_sc_hs__o32ai_2	**A1**	0.02487	0.02458	0.02871
	A1	0.00661	0.00628	0.01055
	A2	0.02106	0.02080	0.02480
	A2	0.00511	0.00481	0.00887
	A3	0.01684	0.01684	0.02102
	A3	0.00245	0.00244	0.00653
	B1	0.02108	0.02094	0.02651
	B1	0.00694	0.00681	0.01231
	B2	0.01701	0.01712	0.02260
	B2	0.00260	0.00271	0.00848
sky130_fd_sc_hs__o32ai_4	**A1**	0.04847	0.04778	0.05882
	A1	0.01261	0.01195	0.02270
	A2	0.04115	0.04064	0.05136
	A2	0.00905	0.00850	0.01904
	A3	0.03258	0.03255	0.04327
	A3	0.00432	0.00429	0.01490
	B1	0.04166	0.04132	0.05202
	B1	0.00892	0.00863	0.02025
	B2	0.03354	0.03360	0.04364
	B2	-0.00054	-0.00028	0.01159

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)**	0.00150	0.00152	0.00150
	(A2 * A3 * B2 * !Y)	-0.00172	-0.00178	-0.00177
	(A2 * A3 * B1 * !B2 * !Y)	0.00151	0.00152	0.00150
	(A2 * A3 * B1 * !B2 * !Y)	-0.00172	-0.00178	-0.00177
	(A2 * !B1 * !B2 * Y)	0.00151	0.00152	0.00150
	(A2 * !B1 * !B2 * Y)	-0.00172	-0.00178	-0.00177
	(A2 * !A3 * B2 * !Y)	0.00153	0.00152	0.00150
	(A2 * !A3 * B2 * !Y)	-0.00168	-0.00177	-0.00177
	(A2 * !A3 * B1 * !B2 * !Y)	0.00153	0.00152	0.00150
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00168	-0.00177	-0.00177
	(!A2 * A3 * B2 * !Y)	0.00153	0.00151	0.00150
	(!A2 * A3 * B2 * !Y)	-0.00158	-0.00172	-0.00171
	(!A2 * A3 * B1 * !B2 * !Y)	0.00153	0.00151	0.00150
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00158	-0.00172	-0.00171
	(!A2 * A3 * !B1 * !B2 * Y)	0.00150	0.00151	0.00150
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00159	-0.00172	-0.00171
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00142	0.00144	0.00143
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00178	-0.00179	-0.00179

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00311	0.00309	0.00310
	(A2 * A3 * B2 * !Y)	-0.00358	-0.00369	-0.00368
	(A2 * A3 * B1 * !B2 * !Y)	0.00311	0.00309	0.00310
	(A2 * A3 * B1 * !B2 * !Y)	-0.00358	-0.00368	-0.00368
	(A2 * !B1 * !B2 * Y)	0.00310	0.00309	0.00310
	(A2 * !B1 * !B2 * Y)	-0.00359	-0.00368	-0.00368
	(A2 * !A3 * B2 * !Y)	0.00316	0.00309	0.00310
	(A2 * !A3 * B2 * !Y)	-0.00350	-0.00368	-0.00368
	(A2 * !A3 * B1 * !B2 * !Y)	0.00316	0.00310	0.00310
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00350	-0.00368	-0.00368
	(!A2 * A3 * B2 * !Y)	0.00317	0.00314	0.00310
	(!A2 * A3 * B2 * !Y)	-0.00330	-0.00357	-0.00356
	(!A2 * A3 * B1 * !B2 * !Y)	0.00317	0.00314	0.00310
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00330	-0.00357	-0.00356
	(!A2 * A3 * !B1 * !B2 * Y)	0.00310	0.00313	0.00310
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00335	-0.00357	-0.00356
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00288	0.00292	0.00290
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00376	-0.00378	-0.00377

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00586	0.00592	0.00584
	(A2 * A3 * B2 * !Y)	-0.00695	-0.00722	-0.00716
	(A2 * A3 * B1 * !B2 * !Y)	0.00586	0.00592	0.00584
	(A2 * A3 * B1 * !B2 * !Y)	-0.00695	-0.00722	-0.00716
	(A2 * !B1 * !B2 * Y)	0.00584	0.00592	0.00584
	(A2 * !B1 * !B2 * Y)	-0.00697	-0.00722	-0.00716
	(A2 * !A3 * B2 * !Y)	0.00597	0.00592	0.00584
	(A2 * !A3 * B2 * !Y)	-0.00679	-0.00721	-0.00717
	(A2 * !A3 * B1 * !B2 * !Y)	0.00597	0.00592	0.00584
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00679	-0.00721	-0.00717
	(!A2 * A3 * B2 * !Y)	0.00600	0.00592	0.00585
	(!A2 * A3 * B2 * !Y)	-0.00641	-0.00697	-0.00693
	(!A2 * A3 * B1 * !B2 * !Y)	0.00600	0.00592	0.00585
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00641	-0.00697	-0.00693
	(!A2 * A3 * !B1 * !B2 * Y)	0.00587	0.00591	0.00584
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00651	-0.00697	-0.00693
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00548	0.00553	0.00550
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00732	-0.00733	-0.00733

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)**	-0.00150	-0.00150	-0.00150
	(A2 * A3 * B2 * !Y)	0.00176	0.00178	0.00177
	(A2 * A3 * B1 * !B2 * !Y)	-0.00149	-0.00150	-0.00150
	(A2 * A3 * B1 * !B2 * !Y)	0.00176	0.00178	0.00177
	(A2 * !B1 * !B2 * Y)	-0.00150	-0.00150	-0.00150
	(A2 * !B1 * !B2 * Y)	0.00176	0.00178	0.00177
	(A2 * !A3 * B2 * !Y)	-0.00150	-0.00150	-0.00150
	(A2 * !A3 * B2 * !Y)	0.00176	0.00177	0.00177
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00150	-0.00150	-0.00150
	(A2 * !A3 * B1 * !B2 * !Y)	0.00176	0.00177	0.00177
	(!A2 * A3 * B2 * !Y)	-0.00149	-0.00150	-0.00150
	(!A2 * A3 * B2 * !Y)	0.00170	0.00172	0.00171
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00149	-0.00150	-0.00150
	(!A2 * A3 * B1 * !B2 * !Y)	0.00170	0.00172	0.00171
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00149	-0.00150	-0.00150
	(!A2 * A3 * !B1 * !B2 * Y)	0.00170	0.00172	0.00171
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00134	-0.00144	-0.00143
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00179	0.00181	0.00179

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00310	-0.00309	-0.00309
	(A2 * A3 * B2 * !Y)	0.00369	0.00371	0.00368
	(A2 * A3 * B1 * !B2 * !Y)	-0.00310	-0.00309	-0.00309
	(A2 * A3 * B1 * !B2 * !Y)	0.00369	0.00371	0.00368
	(A2 * !B1 * !B2 * Y)	-0.00310	-0.00309	-0.00309
	(A2 * !B1 * !B2 * Y)	0.00369	0.00372	0.00368
	(A2 * !A3 * B2 * !Y)	-0.00310	-0.00309	-0.00309
	(A2 * !A3 * B2 * !Y)	0.00369	0.00371	0.00368
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00310	-0.00310	-0.00309
	(A2 * !A3 * B1 * !B2 * !Y)	0.00369	0.00371	0.00368
	(!A2 * A3 * B2 * !Y)	-0.00310	-0.00310	-0.00310
	(!A2 * A3 * B2 * !Y)	0.00355	0.00357	0.00356
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00310	-0.00310	-0.00310
	(!A2 * A3 * B1 * !B2 * !Y)	0.00356	0.00357	0.00356
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00309	-0.00310	-0.00309
	(!A2 * A3 * !B1 * !B2 * Y)	0.00356	0.00357	0.00356
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00272	-0.00292	-0.00290
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00380	0.00382	0.00378

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00583	-0.00586	-0.00583
	(A2 * A3 * B2 * !Y)	0.00716	0.00722	0.00716
	(A2 * A3 * B1 * !B2 * !Y)	-0.00583	-0.00586	-0.00583
	(A2 * A3 * B1 * !B2 * !Y)	0.00716	0.00722	0.00716
	(A2 * !B1 * !B2 * Y)	-0.00583	-0.00586	-0.00583
	(A2 * !B1 * !B2 * Y)	0.00716	0.00722	0.00716
	(A2 * !A3 * B2 * !Y)	-0.00583	-0.00585	-0.00583
	(A2 * !A3 * B2 * !Y)	0.00717	0.00721	0.00717
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00583	-0.00585	-0.00583
	(A2 * !A3 * B1 * !B2 * !Y)	0.00717	0.00721	0.00717
	(!A2 * A3 * B2 * !Y)	-0.00583	-0.00585	-0.00583
	(!A2 * A3 * B2 * !Y)	0.00692	0.00697	0.00693
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00583	-0.00585	-0.00583
	(!A2 * A3 * B1 * !B2 * !Y)	0.00692	0.00697	0.00693
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00582	-0.00585	-0.00583
	(!A2 * A3 * !B1 * !B2 * Y)	0.00692	0.00697	0.00693
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00514	-0.00551	-0.00550
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00738	0.00733	0.00735

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)**	0.00158	0.00161	0.00151
	(A1 * A3 * B2 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * A3 * B1 * !B2 * !Y)	0.00158	0.00161	0.00151
	(A1 * A3 * B1 * !B2 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * A3 * !B1 * !B2 * Y)	0.00145	0.00147	0.00145
	(A1 * A3 * !B1 * !B2 * Y)	-0.00135	-0.00136	-0.00135
	(A1 * !A3 * B2 * !Y)	0.00147	0.00150	0.00147
	(A1 * !A3 * B2 * !Y)	-0.00105	-0.00107	-0.00106
	(A1 * !A3 * B1 * !B2 * !Y)	0.00147	0.00150	0.00147
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00105	-0.00107	-0.00106
	(A1 * !A3 * !B1 * !B2 * Y)	0.00146	0.00144	0.00145
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00183	-0.00184	-0.00184
	(!A1 * A3 * B2 * !Y)	0.00179	0.00147	0.00146
	(!A1 * A3 * B2 * !Y)	-0.00151	-0.00182	-0.00184
	(!A1 * A3 * B1 * !B2 * !Y)	0.00179	0.00147	0.00147
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00151	-0.00182	-0.00184
	(!A1 * A3 * !B1 * !B2 * Y)	0.00146	0.00145	0.00145
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00183	-0.00185	-0.00184
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00135	0.00135	0.00136
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00187	-0.00186	-0.00187

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00306	0.00314	0.00297
	(A1 * A3 * B2 * !Y)	-0.00232	-0.00233	-0.00231
	(A1 * A3 * B1 * !B2 * !Y)	0.00306	0.00315	0.00297
	(A1 * A3 * B1 * !B2 * !Y)	-0.00232	-0.00233	-0.00231
	(A1 * A3 * !B1 * !B2 * Y)	0.00285	0.00287	0.00283
	(A1 * A3 * !B1 * !B2 * Y)	-0.00260	-0.00261	-0.00259
	(A1 * !A3 * B2 * !Y)	0.00289	0.00294	0.00288
	(A1 * !A3 * B2 * !Y)	-0.00195	-0.00198	-0.00196
	(A1 * !A3 * B1 * !B2 * !Y)	0.00289	0.00294	0.00288
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00195	-0.00198	-0.00196
	(A1 * !A3 * !B1 * !B2 * Y)	0.00282	0.00283	0.00284
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00345	-0.00353	-0.00351
	(!A1 * A3 * B2 * !Y)	0.00349	0.00290	0.00287
	(!A1 * A3 * B2 * !Y)	-0.00284	-0.00352	-0.00353
	(!A1 * A3 * B1 * !B2 * !Y)	0.00349	0.00291	0.00287
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00283	-0.00352	-0.00353
	(!A1 * A3 * !B1 * !B2 * Y)	0.00282	0.00285	0.00283
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00348	-0.00357	-0.00356
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00269	0.00272	0.00270
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00361	-0.00363	-0.00361

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00631	0.00647	0.00610
	(A1 * A3 * B2 * !Y)	-0.00469	-0.00475	-0.00470
	(A1 * A3 * B1 * !B2 * !Y)	0.00631	0.00647	0.00610
	(A1 * A3 * B1 * !B2 * !Y)	-0.00469	-0.00475	-0.00470
	(A1 * A3 * !B1 * !B2 * Y)	0.00588	0.00592	0.00584
	(A1 * A3 * !B1 * !B2 * Y)	-0.00518	-0.00520	-0.00518
	(A1 * !A3 * B2 * !Y)	0.00592	0.00602	0.00590
	(A1 * !A3 * B2 * !Y)	-0.00399	-0.00405	-0.00401
	(A1 * !A3 * B1 * !B2 * !Y)	0.00593	0.00603	0.00590
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00399	-0.00405	-0.00400
	(A1 * !A3 * !B1 * !B2 * Y)	0.00589	0.00591	0.00584
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00707	-0.00711	-0.00710
	(!A1 * A3 * B2 * !Y)	0.00729	0.00594	0.00589
	(!A1 * A3 * B2 * !Y)	-0.00580	-0.00718	-0.00720
	(!A1 * A3 * B1 * !B2 * !Y)	0.00729	0.00594	0.00589
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00580	-0.00717	-0.00720
	(!A1 * A3 * !B1 * !B2 * Y)	0.00589	0.00587	0.00584
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00713	-0.00725	-0.00722
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00553	0.00558	0.00552
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00735	-0.00738	-0.00734

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)**	-0.00146	-0.00146	-0.00146
	(A1 * A3 * B2 * !Y)	0.00124	0.00124	0.00124
	(A1 * A3 * B1 * !B2 * !Y)	-0.00146	-0.00146	-0.00146
	(A1 * A3 * B1 * !B2 * !Y)	0.00124	0.00124	0.00124
	(A1 * A3 * !B1 * !B2 * Y)	-0.00144	-0.00145	-0.00145
	(A1 * A3 * !B1 * !B2 * Y)	0.00135	0.00136	0.00135
	(A1 * !A3 * B2 * !Y)	-0.00145	-0.00146	-0.00144
	(A1 * !A3 * B2 * !Y)	0.00108	0.00109	0.00109
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00145	-0.00146	-0.00144
	(A1 * !A3 * B1 * !B2 * !Y)	0.00108	0.00109	0.00109
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00144	-0.00144	-0.00145
	(A1 * !A3 * !B1 * !B2 * Y)	0.00183	0.00185	0.00184
	(!A1 * A3 * B2 * !Y)	-0.00146	-0.00146	-0.00145
	(!A1 * A3 * B2 * !Y)	0.00183	0.00184	0.00184
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00146	-0.00146	-0.00145
	(!A1 * A3 * B1 * !B2 * !Y)	0.00183	0.00184	0.00184
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00144	-0.00145	-0.00145
	(!A1 * A3 * !B1 * !B2 * Y)	0.00184	0.00186	0.00184
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00127	-0.00135	-0.00136
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00188	0.00189	0.00188

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00289	-0.00290	-0.00289
	(A1 * A3 * B2 * !Y)	0.00232	0.00233	0.00231
	(A1 * A3 * B1 * !B2 * !Y)	-0.00289	-0.00290	-0.00289
	(A1 * A3 * B1 * !B2 * !Y)	0.00232	0.00233	0.00231
	(A1 * A3 * !B1 * !B2 * Y)	-0.00283	-0.00284	-0.00283
	(A1 * A3 * !B1 * !B2 * Y)	0.00260	0.00261	0.00259
	(A1 * !A3 * B2 * !Y)	-0.00284	-0.00285	-0.00281
	(A1 * !A3 * B2 * !Y)	0.00200	0.00201	0.00202
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00284	-0.00285	-0.00281
	(A1 * !A3 * B1 * !B2 * !Y)	0.00200	0.00201	0.00203
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00282	-0.00283	-0.00283
	(A1 * !A3 * !B1 * !B2 * Y)	0.00351	0.00353	0.00351
	(!A1 * A3 * B2 * !Y)	-0.00285	-0.00286	-0.00285
	(!A1 * A3 * B2 * !Y)	0.00350	0.00352	0.00353
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00285	-0.00286	-0.00285
	(!A1 * A3 * B1 * !B2 * !Y)	0.00350	0.00352	0.00353
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00282	-0.00283	-0.00283
	(!A1 * A3 * !B1 * !B2 * Y)	0.00354	0.00357	0.00356
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00248	-0.00269	-0.00270
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00365	0.00365	0.00362

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00590	-0.00594	-0.00591
	(A1 * A3 * B2 * !Y)	0.00469	0.00475	0.00470
	(A1 * A3 * B1 * !B2 * !Y)	-0.00590	-0.00594	-0.00591
	(A1 * A3 * B1 * !B2 * !Y)	0.00469	0.00475	0.00470
	(A1 * A3 * !B1 * !B2 * Y)	-0.00582	-0.00584	-0.00583
	(A1 * A3 * !B1 * !B2 * Y)	0.00518	0.00520	0.00518
	(A1 * !A3 * B2 * !Y)	-0.00582	-0.00585	-0.00577
	(A1 * !A3 * B2 * !Y)	0.00409	0.00411	0.00413
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00582	-0.00584	-0.00577
	(A1 * !A3 * B1 * !B2 * !Y)	0.00409	0.00411	0.00414
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00582	-0.00584	-0.00583
	(A1 * !A3 * !B1 * !B2 * Y)	0.00708	0.00711	0.00710
	(!A1 * A3 * B2 * !Y)	-0.00586	-0.00590	-0.00585
	(!A1 * A3 * B2 * !Y)	0.00716	0.00724	0.00720
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00586	-0.00589	-0.00585
	(!A1 * A3 * B1 * !B2 * !Y)	0.00716	0.00724	0.00720
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00582	-0.00585	-0.00583
	(!A1 * A3 * !B1 * !B2 * Y)	0.00720	0.00725	0.00722
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00510	-0.00554	-0.00552
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00739	0.00741	0.00735

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00156	0.00159	0.00156
	(A2 * B2 * !Y)	-0.00088	-0.00089	-0.00088
	(A2 * B1 * !B2 * !Y)	0.00156	0.00159	0.00156
	(A2 * B1 * !B2 * !Y)	-0.00088	-0.00089	-0.00088
	(A2 * !B1 * !B2 * Y)	0.00144	0.00145	0.00144
	(A2 * !B1 * !B2 * Y)	-0.00169	-0.00175	-0.00174
	(A1 * !A2 * B2 * !Y)	0.00156	0.00159	0.00156
	(A1 * !A2 * B2 * !Y)	-0.00087	-0.00089	-0.00088
	(A1 * !A2 * B1 * !B2 * !Y)	0.00156	0.00159	0.00157
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00087	-0.00089	-0.00088
	(A1 * !A2 * !B1 * !B2 * Y)	0.00143	0.00146	0.00144
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00153	-0.00165	-0.00165
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00136	0.00137	0.00136
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00176	-0.00177	-0.00176
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00343	0.00349	0.00343
	(A2 * B2 * !Y)	-0.00175	-0.00177	-0.00174
	(A2 * B1 * !B2 * !Y)	0.00343	0.00349	0.00343
	(A2 * B1 * !B2 * !Y)	-0.00175	-0.00177	-0.00174
	(A2 * !B1 * !B2 * Y)	0.00281	0.00282	0.00282
	(A2 * !B1 * !B2 * Y)	-0.00368	-0.00382	-0.00381
	(A1 * !A2 * B2 * !Y)	0.00343	0.00349	0.00343
	(A1 * !A2 * B2 * !Y)	-0.00174	-0.00177	-0.00174
	(A1 * !A2 * B1 * !B2 * !Y)	0.00343	0.00349	0.00343
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00174	-0.00177	-0.00174
	(A1 * !A2 * !B1 * !B2 * Y)	0.00281	0.00283	0.00282
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00338	-0.00360	-0.00359
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00267	0.00267	0.00268
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00387	-0.00387	-0.00387

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00650	0.00661	0.00651
	(A2 * B2 * !Y)	-0.00345	-0.00350	-0.00344
	(A2 * B1 * !B2 * !Y)	0.00650	0.00662	0.00651
	(A2 * B1 * !B2 * !Y)	-0.00345	-0.00350	-0.00344
	(A2 * !B1 * !B2 * Y)	0.00549	0.00550	0.00550
	(A2 * !B1 * !B2 * Y)	-0.00712	-0.00738	-0.00735
	(A1 * !A2 * B2 * !Y)	0.00653	0.00662	0.00651
	(A1 * !A2 * B2 * !Y)	-0.00347	-0.00349	-0.00343
	(A1 * !A2 * B1 * !B2 * !Y)	0.00653	0.00662	0.00651
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00347	-0.00349	-0.00343
	(A1 * !A2 * !B1 * !B2 * Y)	0.00549	0.00551	0.00550
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00649	-0.00692	-0.00691
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00524	0.00529	0.00525
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00748	-0.00752	-0.00749

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00150	-0.00151	-0.00156
	(A2 * B2 * !Y)	0.00094	0.00094	0.00089
	(A2 * B1 * !B2 * !Y)	-0.00150	-0.00151	-0.00156
	(A2 * B1 * !B2 * !Y)	0.00094	0.00094	0.00089
	(A2 * !B1 * !B2 * Y)	-0.00144	-0.00145	-0.00144
	(A2 * !B1 * !B2 * Y)	0.00173	0.00175	0.00174
	(A1 * !A2 * B2 * !Y)	-0.00142	-0.00143	-0.00154
	(A1 * !A2 * B2 * !Y)	0.00098	0.00098	0.00089
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00142	-0.00143	-0.00154
	(A1 * !A2 * B1 * !B2 * !Y)	0.00098	0.00098	0.00089
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00143	-0.00145	-0.00144
	(A1 * !A2 * !B1 * !B2 * Y)	0.00165	0.00165	0.00165
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00127	-0.00137	-0.00136
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00177	0.00178	0.00177
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00325	-0.00327	-0.00341
	(A2 * B2 * !Y)	0.00190	0.00190	0.00178
	(A2 * B1 * !B2 * !Y)	-0.00325	-0.00327	-0.00341
	(A2 * B1 * !B2 * !Y)	0.00190	0.00190	0.00178
	(A2 * !B1 * !B2 * Y)	-0.00281	-0.00282	-0.00281
	(A2 * !B1 * !B2 * Y)	0.00380	0.00382	0.00381
	(A1 * !A2 * B2 * !Y)	-0.00308	-0.00310	-0.00338
	(A1 * !A2 * B2 * !Y)	0.00197	0.00198	0.00178
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00308	-0.00310	-0.00338
	(A1 * !A2 * B1 * !B2 * !Y)	0.00198	0.00198	0.00178
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00281	-0.00282	-0.00281
	(A1 * !A2 * !B1 * !B2 * Y)	0.00358	0.00360	0.00359
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00248	-0.00267	-0.00268
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00390	0.00390	0.00388

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00617	-0.00624	-0.00647
	(A2 * B2 * !Y)	0.00371	0.00375	0.00352
	(A2 * B1 * !B2 * !Y)	-0.00616	-0.00619	-0.00647
	(A2 * B1 * !B2 * !Y)	0.00371	0.00371	0.00352
	(A2 * !B1 * !B2 * Y)	-0.00547	-0.00550	-0.00549
	(A2 * !B1 * !B2 * Y)	0.00732	0.00738	0.00735
	(A1 * !A2 * B2 * !Y)	-0.00582	-0.00584	-0.00640
	(A1 * !A2 * B2 * !Y)	0.00388	0.00387	0.00351
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00582	-0.00587	-0.00640
	(A1 * !A2 * B1 * !B2 * !Y)	0.00387	0.00389	0.00351
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00548	-0.00550	-0.00549
	(A1 * !A2 * !B1 * !B2 * Y)	0.00689	0.00692	0.00691
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00485	-0.00522	-0.00525
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00752	0.00753	0.00750

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00183	0.00163	0.00160
	(A3 * B2 * !Y)	-0.00150	-0.00174	-0.00175
	(A2 * !A3 * B2 * !Y)	0.00183	0.00163	0.00160
	(A2 * !A3 * B2 * !Y)	-0.00150	-0.00174	-0.00175
	(A1 * !A2 * !A3 * B2 * !Y)	0.00183	0.00163	0.00160
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00150	-0.00174	-0.00175
	(!A1 * !A2 * !A3 * B2 * Y)	0.00055	0.00055	0.00055
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00207	-0.00211	-0.00209
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00063	0.00063	0.00057
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00200	-0.00202	-0.00211

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00340	0.00295	0.00290
	(A3 * B2 * !Y)	-0.00291	-0.00345	-0.00346
	(A2 * !A3 * B2 * !Y)	0.00340	0.00295	0.00290
	(A2 * !A3 * B2 * !Y)	-0.00292	-0.00346	-0.00346
	(A1 * !A2 * !A3 * B2 * !Y)	0.00340	0.00295	0.00290
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00292	-0.00346	-0.00346
	(!A1 * !A2 * !A3 * B2 * Y)	0.00087	0.00088	0.00087
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00406	-0.00419	-0.00416
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00103	0.00103	0.00092
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00396	-0.00400	-0.00418
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00715	0.00620	0.00608
	(A3 * B2 * !Y)	-0.00583	-0.00695	-0.00694
	(A2 * !A3 * B2 * !Y)	0.00713	0.00619	0.00608
	(A2 * !A3 * B2 * !Y)	-0.00581	-0.00696	-0.00694
	(A1 * !A2 * !A3 * B2 * !Y)	0.00713	0.00619	0.00608
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00581	-0.00690	-0.00694
	(!A1 * !A2 * !A3 * B2 * Y)	0.00175	0.00176	0.00174
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00845	-0.00869	-0.00861
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00207	0.00207	0.00184
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00827	-0.00834	-0.00868

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00159	-0.00160	-0.00159
	(A3 * B2 * !Y)	0.00174	0.00175	0.00175
	(A2 * !A3 * B2 * !Y)	-0.00159	-0.00160	-0.00159
	(A2 * !A3 * B2 * !Y)	0.00174	0.00176	0.00175
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00159	-0.00159	-0.00159
	(A1 * !A2 * !A3 * B2 * !Y)	0.00174	0.00175	0.00175
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00054	-0.00055	-0.00055
	(!A1 * !A2 * !A3 * B2 * Y)	0.00210	0.00211	0.00209
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00055	-0.00056	-0.00055
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00212	0.00216	0.00212
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00290	-0.00289	-0.00289
	(A3 * B2 * !Y)	0.00345	0.00345	0.00346
	(A2 * !A3 * B2 * !Y)	-0.00290	-0.00290	-0.00289
	(A2 * !A3 * B2 * !Y)	0.00345	0.00346	0.00346
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00290	-0.00290	-0.00289
	(A1 * !A2 * !A3 * B2 * !Y)	0.00345	0.00346	0.00346
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00086	-0.00087	-0.00087
	(!A1 * !A2 * !A3 * B2 * Y)	0.00415	0.00419	0.00416
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00088	-0.00089	-0.00088
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00422	0.00427	0.00421
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00606	-0.00608	-0.00606
	(A3 * B2 * !Y)	0.00690	0.00695	0.00694
	(A2 * !A3 * B2 * !Y)	-0.00606	-0.00608	-0.00606
	(A2 * !A3 * B2 * !Y)	0.00690	0.00696	0.00694
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00606	-0.00606	-0.00606
	(A1 * !A2 * !A3 * B2 * !Y)	0.00690	0.00690	0.00694
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00173	-0.00175	-0.00174
	(!A1 * !A2 * !A3 * B2 * Y)	0.00858	0.00869	0.00861
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00176	-0.00179	-0.00176
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00870	0.00887	0.00873

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00166	0.00169	0.00167
	(A3 * B1 * !Y)	-0.00085	-0.00086	-0.00085
	(A2 * !A3 * B1 * !Y)	0.00166	0.00169	0.00167
	(A2 * !A3 * B1 * !Y)	-0.00085	-0.00087	-0.00085
	(A1 * !A2 * !A3 * B1 * !Y)	0.00166	0.00169	0.00167
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00085	-0.00087	-0.00085
	(!A1 * !A2 * !A3 * B1 * Y)	0.00047	0.00046	0.00046
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00211	-0.00212	-0.00211
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00054	0.00054	0.00049
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00204	-0.00205	-0.00214
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00326	0.00332	0.00326
	(A3 * B1 * !Y)	-0.00176	-0.00178	-0.00175
	(A2 * !A3 * B1 * !Y)	0.00326	0.00332	0.00326
	(A2 * !A3 * B1 * !Y)	-0.00176	-0.00179	-0.00175
	(A1 * !A2 * !A3 * B1 * !Y)	0.00326	0.00332	0.00326
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00175	-0.00179	-0.00175
	(!A1 * !A2 * !A3 * B1 * Y)	0.00093	0.00092	0.00092
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00417	-0.00421	-0.00421
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00108	0.00108	0.00096
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00405	-0.00409	-0.00427

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00639	0.00651	0.00640
	(A3 * B1 * !Y)	-0.00349	-0.00354	-0.00347
	(A2 * !A3 * B1 * !Y)	0.00639	0.00640	0.00640
	(A2 * !A3 * B1 * !Y)	-0.00348	-0.00347	-0.00347
	(A1 * !A2 * !A3 * B1 * !Y)	0.00639	0.00643	0.00640
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00348	-0.00350	-0.00347
	(!A1 * !A2 * !A3 * B1 * Y)	0.00178	0.00176	0.00176
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00827	-0.00836	-0.00833
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00206	0.00209	0.00186
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00800	-0.00812	-0.00847

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00161	-0.00163	-0.00166
	(A3 * B1 * !Y)	0.00090	0.00090	0.00086
	(A2 * !A3 * B1 * !Y)	-0.00161	-0.00163	-0.00166
	(A2 * !A3 * B1 * !Y)	0.00090	0.00090	0.00086
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00161	-0.00162	-0.00166
	(A1 * !A2 * !A3 * B1 * !Y)	0.00090	0.00090	0.00086
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !A3 * B1 * Y)	0.00212	0.00212	0.00211
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00047	-0.00047	-0.00047
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00215	0.00215	0.00215

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00309	-0.00310	-0.00325
	(A3 * B1 * !Y)	0.00190	0.00190	0.00179
	(A2 * !A3 * B1 * !Y)	-0.00309	-0.00311	-0.00325
	(A2 * !A3 * B1 * !Y)	0.00190	0.00190	0.00179
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00310	-0.00311	-0.00325
	(A1 * !A2 * !A3 * B1 * !Y)	0.00191	0.00191	0.00179
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00091	-0.00092	-0.00092
	(!A1 * !A2 * !A3 * B1 * Y)	0.00420	0.00421	0.00421
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00094	-0.00093	-0.00092
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00430	0.00430	0.00429
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00609	-0.00614	-0.00637
	(A3 * B1 * !Y)	0.00373	0.00374	0.00354
	(A2 * !A3 * B1 * !Y)	-0.00608	-0.00614	-0.00637
	(A2 * !A3 * B1 * !Y)	0.00372	0.00375	0.00354
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00610	-0.00614	-0.00637
	(A1 * !A2 * !A3 * B1 * !Y)	0.00375	0.00375	0.00354
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00177	-0.00176	-0.00176
	(!A1 * !A2 * !A3 * B1 * Y)	0.00836	0.00837	0.00833
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00177	-0.00179	-0.00178
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00847	0.00854	0.00851

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00261	0.00254	0.00253	0.00255	0.00259	1.05147
sky130_fd_sc_hs__o32a_2	0.00274	0.00269	0.00274	0.00294	0.00275	2.03749
sky130_fd_sc_hs__o32a_4	0.00468	0.00501	0.00469	0.00629	0.00496	4.02410

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.09184	0.27551
sky130_fd_sc_hs__o32a_2	0.00000	0.11266	0.28171
sky130_fd_sc_hs__o32a_4	0.00000	0.22817	0.56341

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)	0.10479	0.66217	6.39662
	A2->X (RR)	0.10203	0.65349	6.34021
	A3->X (RR)	0.09254	0.63272	6.31136
	B1->X (RR)	0.09434	0.65694	6.42760
	B2->X (RR)	0.08554	0.63328	6.42288
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.10692	0.57080	6.32429
	A2->X (RR)	0.10517	0.56523	6.28039
	A3->X (RR)	0.09659	0.54853	6.25184
	B1->X (RR)	0.09704	0.57479	6.38003
	B2->X (RR)	0.08824	0.55368	6.35832
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.12153	0.52484	6.57329
	A2->X (RR)	0.11425	0.50877	6.50097
	A3->X (RR)	0.10135	0.48487	6.46839
	B1->X (RR)	0.11279	0.53522	6.63935
	B2->X (RR)	0.09807	0.50611	6.59867

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.26231	0.75907	4.91817
	A2->X (FF)	0.24587	0.76782	5.08250
	A3->X (FF)	0.21132	0.74156	5.00828
	B1->X (FF)	0.13378	0.61232	4.67389
	B2->X (FF)	0.11709	0.60586	4.66509
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.32831	0.81907	5.14393
	A2->X (FF)	0.31227	0.83037	5.32374
	A3->X (FF)	0.27883	0.80385	5.25337
	B1->X (FF)	0.17452	0.64679	4.86049
	B2->X (FF)	0.15677	0.64352	4.84945
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.33102	0.79450	5.25797
	A2->X (FF)	0.31256	0.79467	5.40436
	A3->X (FF)	0.26163	0.75482	5.33776
	B1->X (FF)	0.16307	0.59667	4.94497
	B2->X (FF)	0.14105	0.58478	4.94000

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.01403	0.01383	0.02164
	A1	0.00591	0.00573	0.01370
	A2	0.01242	0.01254	0.02052
	A2	0.00522	0.00534	0.01351
	A3	0.01072	0.01088	0.02229
	A3	0.00328	0.00344	0.01569
	B1	0.01250	0.01270	0.02586
	B1	0.00587	0.00607	0.01939
	B2	0.01075	0.01101	0.02951
	B2	0.00324	0.00380	0.02490
sky130_fd_sc_hs__o32a_2	A1	0.01704	0.01708	0.02472
	A1	0.00835	0.00840	0.01646
	A2	0.01543	0.01581	0.02359
	A2	0.00764	0.00802	0.01637
	A3	0.01374	0.01416	0.02515
	A3	0.00567	0.00615	0.01824
	B1	0.01542	0.01575	0.02832
	B1	0.00817	0.00851	0.02149
	B2	0.01355	0.01396	0.03161
	B2	0.00563	0.00634	0.02695

sky130_fd_sc_hs__o32a_4	**A1**	0.03334	0.03390	0.05294
	A1	0.01739	0.01799	0.03732
	A2	0.03004	0.03065	0.04949
	A2	0.01548	0.01613	0.03543
	A3	0.02540	0.02637	0.05365
	A3	0.01083	0.01193	0.04118
	B1	0.03099	0.03196	0.05657
	B1	0.01690	0.01794	0.04279
	B2	0.02660	0.02783	0.06055
	B2	0.01076	0.01237	0.05033

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00442	0.00410	0.01344
	A1	0.01246	0.01217	0.02128
	A2	0.00443	0.00430	0.01483
	A2	0.01153	0.01143	0.02118
	A3	0.00455	0.00511	0.02137
	A3	0.01069	0.01128	0.02662
	B1	0.00293	0.00316	0.01651
	B1	0.00968	0.00987	0.02152
	B2	0.00296	0.00407	0.02412
	B2	0.00878	0.00985	0.02784

sky130_fd_sc_hs__o32a_2	**A1**	0.00804	0.00731	0.01751
	A1	0.01662	0.01594	0.02509
	A2	0.00808	0.00750	0.01786
	A2	0.01574	0.01517	0.02480
	A3	0.00810	0.00810	0.02455
	A3	0.01498	0.01503	0.03032
	B1	0.00585	0.00607	0.01822
	B1	0.01321	0.01345	0.02489
	B2	0.00595	0.00719	0.02683
	B2	0.01213	0.01320	0.03124
sky130_fd_sc_hs__o32a_4	**A1**	0.01522	0.01404	0.03307
	A1	0.03111	0.03014	0.04873
	A2	0.01518	0.01404	0.03500
	A2	0.02956	0.02864	0.04778
	A3	0.01522	0.01528	0.04855
	A3	0.02737	0.02753	0.05788
	B1	0.01088	0.01129	0.03702
	B1	0.02525	0.02564	0.04960
	B2	0.01091	0.01306	0.05190
	B2	0.02247	0.02431	0.06099

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)**	0.00144	0.00145	0.00143
	(A2 * A3 * B2 * X)	-0.00153	-0.00157	-0.00156
	(A2 * A3 * B1 * !B2 * X)	0.00144	0.00145	0.00144
	(A2 * A3 * B1 * !B2 * X)	-0.00153	-0.00157	-0.00156
	(A2 * !B1 * !B2 * !X)	0.00123	0.00124	0.00123
	(A2 * !B1 * !B2 * !X)	-0.00174	-0.00178	-0.00177
	(A2 * !A3 * B2 * X)	0.00150	0.00145	0.00144
	(A2 * !A3 * B2 * X)	-0.00146	-0.00157	-0.00156
	(A2 * !A3 * B1 * !B2 * X)	0.00150	0.00145	0.00144
	(A2 * !A3 * B1 * !B2 * X)	-0.00146	-0.00157	-0.00157
	(!A2 * A3 * B2 * X)	0.00148	0.00145	0.00144
	(!A2 * A3 * B2 * X)	-0.00137	-0.00152	-0.00151
	(!A2 * A3 * B1 * !B2 * X)	0.00148	0.00145	0.00144
	(!A2 * A3 * B1 * !B2 * X)	-0.00137	-0.00152	-0.00152
	(!A2 * A3 * !B1 * !B2 * !X)	0.00123	0.00124	0.00123
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00161	-0.00173	-0.00172
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00116	0.00117	0.00116
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00179	-0.00180	-0.00179

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00161	0.00162	0.00161
	(A2 * A3 * B2 * X)	-0.00153	-0.00157	-0.00156
	(A2 * A3 * B1 * !B2 * X)	0.00161	0.00162	0.00161
	(A2 * A3 * B1 * !B2 * X)	-0.00153	-0.00157	-0.00156
	(A2 * !B1 * !B2 * !X)	0.00141	0.00143	0.00141
	(A2 * !B1 * !B2 * !X)	-0.00173	-0.00177	-0.00176
	(A2 * !A3 * B2 * X)	0.00167	0.00162	0.00161
	(A2 * !A3 * B2 * X)	-0.00146	-0.00157	-0.00157
	(A2 * !A3 * B1 * !B2 * X)	0.00167	0.00162	0.00161
	(A2 * !A3 * B1 * !B2 * X)	-0.00146	-0.00157	-0.00157
	(!A2 * A3 * B2 * X)	0.00165	0.00162	0.00161
	(!A2 * A3 * B2 * X)	-0.00137	-0.00152	-0.00152
	(!A2 * A3 * B1 * !B2 * X)	0.00165	0.00162	0.00161
	(!A2 * A3 * B1 * !B2 * X)	-0.00137	-0.00153	-0.00152
	(!A2 * A3 * !B1 * !B2 * !X)	0.00141	0.00142	0.00141
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00160	-0.00172	-0.00171
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00134	0.00135	0.00134
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00178	-0.00179	-0.00178

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00248	0.00251	0.00248
	(A2 * A3 * B2 * X)	-0.00306	-0.00319	-0.00316
	(A2 * A3 * B1 * !B2 * X)	0.00248	0.00251	0.00248
	(A2 * A3 * B1 * !B2 * X)	-0.00306	-0.00319	-0.00316
	(A2 * !B1 * !B2 * !X)	0.00249	0.00251	0.00248
	(A2 * !B1 * !B2 * !X)	-0.00307	-0.00315	-0.00316
	(A2 * !A3 * B2 * X)	0.00257	0.00251	0.00248
	(A2 * !A3 * B2 * X)	-0.00294	-0.00319	-0.00316
	(A2 * !A3 * B1 * !B2 * X)	0.00257	0.00251	0.00248
	(A2 * !A3 * B1 * !B2 * X)	-0.00294	-0.00319	-0.00316
	(!A2 * A3 * B2 * X)	0.00258	0.00251	0.00248
	(!A2 * A3 * B2 * X)	-0.00275	-0.00308	-0.00306
	(!A2 * A3 * B1 * !B2 * X)	0.00259	0.00251	0.00248
	(!A2 * A3 * B1 * !B2 * X)	-0.00275	-0.00308	-0.00306
	(!A2 * A3 * !B1 * !B2 * !X)	0.00248	0.00251	0.00248
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00282	-0.00308	-0.00305
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00235	0.00235	0.00236
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00322	-0.00322	-0.00322

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)**	-0.00143	-0.00144	-0.00143
	(A2 * A3 * B2 * X)	0.00157	0.00158	0.00156
	(A2 * A3 * B1 * !B2 * X)	-0.00143	-0.00144	-0.00143
	(A2 * A3 * B1 * !B2 * X)	0.00157	0.00158	0.00156
	(A2 * !B1 * !B2 * !X)	-0.00123	-0.00123	-0.00123
	(A2 * !B1 * !B2 * !X)	0.00177	0.00179	0.00177
	(A2 * !A3 * B2 * X)	-0.00143	-0.00144	-0.00143
	(A2 * !A3 * B2 * X)	0.00157	0.00158	0.00156
	(A2 * !A3 * B1 * !B2 * X)	-0.00143	-0.00144	-0.00143
	(A2 * !A3 * B1 * !B2 * X)	0.00157	0.00158	0.00157
	(!A2 * A3 * B2 * X)	-0.00143	-0.00143	-0.00143
	(!A2 * A3 * B2 * X)	0.00151	0.00152	0.00151
	(!A2 * A3 * B1 * !B2 * X)	-0.00143	-0.00143	-0.00143
	(!A2 * A3 * B1 * !B2 * X)	0.00151	0.00152	0.00152
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00122	-0.00123	-0.00123
	(!A2 * A3 * !B1 * !B2 * !X)	0.00171	0.00173	0.00172
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00109	-0.00117	-0.00116
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00180	0.00181	0.00179

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00160	-0.00161	-0.00160
	(A2 * A3 * B2 * X)	0.00157	0.00158	0.00156
	(A2 * A3 * B1 * !B2 * X)	-0.00160	-0.00161	-0.00160
	(A2 * A3 * B1 * !B2 * X)	0.00157	0.00158	0.00156
	(A2 * !B1 * !B2 * !X)	-0.00141	-0.00141	-0.00140
	(A2 * !B1 * !B2 * !X)	0.00176	0.00178	0.00176
	(A2 * !A3 * B2 * X)	-0.00160	-0.00161	-0.00160
	(A2 * !A3 * B2 * X)	0.00157	0.00158	0.00157
	(A2 * !A3 * B1 * !B2 * X)	-0.00160	-0.00161	-0.00160
	(A2 * !A3 * B1 * !B2 * X)	0.00157	0.00158	0.00157
	(!A2 * A3 * B2 * X)	-0.00159	-0.00160	-0.00160
	(!A2 * A3 * B2 * X)	0.00151	0.00152	0.00152
	(!A2 * A3 * B1 * !B2 * X)	-0.00159	-0.00160	-0.00160
	(!A2 * A3 * B1 * !B2 * X)	0.00151	0.00153	0.00152
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00140	-0.00141	-0.00140
	(!A2 * A3 * !B1 * !B2 * !X)	0.00170	0.00172	0.00171
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00126	-0.00135	-0.00134
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00179	0.00180	0.00179

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00247	-0.00248	-0.00247
	(A2 * A3 * B2 * X)	0.00316	0.00319	0.00316
	(A2 * A3 * B1 * !B2 * X)	-0.00247	-0.00248	-0.00247
	(A2 * A3 * B1 * !B2 * X)	0.00316	0.00319	0.00316
	(A2 * !B1 * !B2 * !X)	-0.00247	-0.00246	-0.00247
	(A2 * !B1 * !B2 * !X)	0.00316	0.00315	0.00316
	(A2 * !A3 * B2 * X)	-0.00246	-0.00248	-0.00247
	(A2 * !A3 * B2 * X)	0.00314	0.00319	0.00316
	(A2 * !A3 * B1 * !B2 * X)	-0.00247	-0.00248	-0.00247
	(A2 * !A3 * B1 * !B2 * X)	0.00316	0.00319	0.00316
	(!A2 * A3 * B2 * X)	-0.00246	-0.00247	-0.00246
	(!A2 * A3 * B2 * X)	0.00305	0.00308	0.00306
	(!A2 * A3 * B1 * !B2 * X)	-0.00246	-0.00247	-0.00246
	(!A2 * A3 * B1 * !B2 * X)	0.00305	0.00308	0.00306
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00246	-0.00248	-0.00247
	(!A2 * A3 * !B1 * !B2 * !X)	0.00304	0.00308	0.00305
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00218	-0.00235	-0.00236
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00326	0.00326	0.00324

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)**	0.00143	0.00147	0.00138
	(A1 * A3 * B2 * X)	-0.00101	-0.00102	-0.00102
	(A1 * A3 * B1 * !B2 * X)	0.00143	0.00147	0.00138
	(A1 * A3 * B1 * !B2 * X)	-0.00101	-0.00102	-0.00102
	(A1 * A3 * !B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(A1 * A3 * !B1 * !B2 * !X)	-0.00115	-0.00116	-0.00116
	(A1 * !A3 * B2 * X)	0.00132	0.00135	0.00132
	(A1 * !A3 * B2 * X)	-0.00085	-0.00086	-0.00086
	(A1 * !A3 * B1 * !B2 * X)	0.00132	0.00135	0.00132
	(A1 * !A3 * B1 * !B2 * X)	-0.00085	-0.00086	-0.00086
	(A1 * !A3 * !B1 * !B2 * !X)	0.00127	0.00127	0.00126
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00158	-0.00159	-0.00158
	(!A1 * A3 * B2 * X)	0.00163	0.00134	0.00131
	(!A1 * A3 * B2 * X)	-0.00122	-0.00154	-0.00154
	(!A1 * A3 * B1 * !B2 * X)	0.00163	0.00134	0.00131
	(!A1 * A3 * B1 * !B2 * X)	-0.00122	-0.00154	-0.00154
	(!A1 * A3 * !B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00157	-0.00160	-0.00159
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00118	0.00118	0.00118
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00161	-0.00161	-0.00161

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00162	0.00165	0.00156
	(A1 * A3 * B2 * X)	-0.00102	-0.00103	-0.00102
	(A1 * A3 * B1 * !B2 * X)	0.00162	0.00165	0.00156
	(A1 * A3 * B1 * !B2 * X)	-0.00102	-0.00103	-0.00102
	(A1 * A3 * !B1 * !B2 * !X)	0.00143	0.00145	0.00143
	(A1 * A3 * !B1 * !B2 * !X)	-0.00116	-0.00117	-0.00117
	(A1 * !A3 * B2 * X)	0.00150	0.00153	0.00150
	(A1 * !A3 * B2 * X)	-0.00085	-0.00087	-0.00086
	(A1 * !A3 * B1 * !B2 * X)	0.00150	0.00153	0.00150
	(A1 * !A3 * B1 * !B2 * X)	-0.00085	-0.00087	-0.00086
	(A1 * !A3 * !B1 * !B2 * !X)	0.00144	0.00145	0.00143
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00158	-0.00160	-0.00159
	(!A1 * A3 * B2 * X)	0.00181	0.00153	0.00149
	(!A1 * A3 * B2 * X)	-0.00123	-0.00154	-0.00155
	(!A1 * A3 * B1 * !B2 * X)	0.00181	0.00153	0.00149
	(!A1 * A3 * B1 * !B2 * X)	-0.00123	-0.00154	-0.00155
	(!A1 * A3 * !B1 * !B2 * !X)	0.00144	0.00145	0.00143
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00158	-0.00161	-0.00160
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00135	0.00136	0.00136
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00162	-0.00162	-0.00162

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00275	0.00283	0.00264
	(A1 * A3 * B2 * X)	-0.00226	-0.00229	-0.00226
	(A1 * A3 * B1 * !B2 * X)	0.00275	0.00283	0.00264
	(A1 * A3 * B1 * !B2 * X)	-0.00226	-0.00229	-0.00226
	(A1 * A3 * !B1 * !B2 * !X)	0.00254	0.00257	0.00253
	(A1 * A3 * !B1 * !B2 * !X)	-0.00242	-0.00244	-0.00243
	(A1 * !A3 * B2 * X)	0.00257	0.00258	0.00254
	(A1 * !A3 * B2 * X)	-0.00194	-0.00195	-0.00194
	(A1 * !A3 * B1 * !B2 * X)	0.00256	0.00259	0.00254
	(A1 * !A3 * B1 * !B2 * X)	-0.00192	-0.00195	-0.00194
	(A1 * !A3 * !B1 * !B2 * !X)	0.00256	0.00256	0.00253
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00332	-0.00335	-0.00333
	(!A1 * A3 * B2 * X)	0.00319	0.00256	0.00253
	(!A1 * A3 * B2 * X)	-0.00268	-0.00334	-0.00338
	(!A1 * A3 * B1 * !B2 * X)	0.00319	0.00256	0.00254
	(!A1 * A3 * B1 * !B2 * X)	-0.00268	-0.00334	-0.00338
	(!A1 * A3 * !B1 * !B2 * !X)	0.00254	0.00254	0.00253
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00328	-0.00337	-0.00335
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00239	0.00243	0.00240
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00341	-0.00344	-0.00342

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)**	-0.00132	-0.00132	-0.00132
	(A1 * A3 * B2 * X)	0.00101	0.00102	0.00102
	(A1 * A3 * B1 * !B2 * X)	-0.00131	-0.00132	-0.00132
	(A1 * A3 * B1 * !B2 * X)	0.00101	0.00102	0.00102
	(A1 * A3 * !B1 * !B2 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * A3 * !B1 * !B2 * !X)	0.00115	0.00116	0.00116
	(A1 * !A3 * B2 * X)	-0.00130	-0.00131	-0.00129
	(A1 * !A3 * B2 * X)	0.00088	0.00088	0.00088
	(A1 * !A3 * B1 * !B2 * X)	-0.00130	-0.00131	-0.00129
	(A1 * !A3 * B1 * !B2 * X)	0.00088	0.00088	0.00088
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * !B1 * !B2 * !X)	0.00158	0.00159	0.00158
	(!A1 * A3 * B2 * X)	-0.00130	-0.00131	-0.00130
	(!A1 * A3 * B2 * X)	0.00153	0.00154	0.00154
	(!A1 * A3 * B1 * !B2 * X)	-0.00131	-0.00130	-0.00130
	(!A1 * A3 * B1 * !B2 * X)	0.00154	0.00154	0.00154
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00125	-0.00126	-0.00125
	(!A1 * A3 * !B1 * !B2 * !X)	0.00159	0.00160	0.00159
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00111	-0.00118	-0.00118
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00162	0.00163	0.00161

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00150	-0.00150	-0.00150
	(A1 * A3 * B2 * X)	0.00102	0.00103	0.00102
	(A1 * A3 * B1 * !B2 * X)	-0.00150	-0.00150	-0.00150
	(A1 * A3 * B1 * !B2 * X)	0.00102	0.00103	0.00102
	(A1 * A3 * !B1 * !B2 * !X)	-0.00143	-0.00143	-0.00143
	(A1 * A3 * !B1 * !B2 * !X)	0.00116	0.00117	0.00117
	(A1 * !A3 * B2 * X)	-0.00148	-0.00149	-0.00147
	(A1 * !A3 * B2 * X)	0.00088	0.00089	0.00089
	(A1 * !A3 * B1 * !B2 * X)	-0.00148	-0.00149	-0.00147
	(A1 * !A3 * B1 * !B2 * X)	0.00088	0.00089	0.00089
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00143	-0.00143	-0.00143
	(A1 * !A3 * !B1 * !B2 * !X)	0.00159	0.00160	0.00159
	(!A1 * A3 * B2 * X)	-0.00149	-0.00149	-0.00148
	(!A1 * A3 * B2 * X)	0.00154	0.00155	0.00155
	(!A1 * A3 * B1 * !B2 * X)	-0.00149	-0.00149	-0.00148
	(!A1 * A3 * B1 * !B2 * X)	0.00154	0.00155	0.00155
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00143	-0.00143	-0.00143
	(!A1 * A3 * !B1 * !B2 * !X)	0.00160	0.00161	0.00160
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00126	-0.00136	-0.00136
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00163	0.00164	0.00163

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00252	-0.00254	-0.00253
	(A1 * A3 * B2 * X)	0.00226	0.00229	0.00226
	(A1 * A3 * B1 * !B2 * X)	-0.00252	-0.00254	-0.00253
	(A1 * A3 * B1 * !B2 * X)	0.00226	0.00229	0.00226
	(A1 * A3 * !B1 * !B2 * !X)	-0.00252	-0.00253	-0.00252
	(A1 * A3 * !B1 * !B2 * !X)	0.00242	0.00244	0.00243
	(A1 * !A3 * B2 * X)	-0.00250	-0.00252	-0.00247
	(A1 * !A3 * B2 * X)	0.00198	0.00200	0.00201
	(A1 * !A3 * B1 * !B2 * X)	-0.00251	-0.00251	-0.00247
	(A1 * !A3 * B1 * !B2 * X)	0.00199	0.00200	0.00201
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00253	-0.00254	-0.00252
	(A1 * !A3 * !B1 * !B2 * !X)	0.00336	0.00335	0.00333
	(!A1 * A3 * B2 * X)	-0.00252	-0.00252	-0.00250
	(!A1 * A3 * B2 * X)	0.00337	0.00338	0.00338
	(!A1 * A3 * B1 * !B2 * X)	-0.00253	-0.00252	-0.00250
	(!A1 * A3 * B1 * !B2 * X)	0.00339	0.00338	0.00338
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00254	-0.00254	-0.00252
	(!A1 * A3 * !B1 * !B2 * !X)	0.00337	0.00338	0.00335
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00222	-0.00242	-0.00240
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00345	0.00346	0.00343

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00141	0.00144	0.00142
	(A2 * B2 * X)	-0.00079	-0.00080	-0.00079
	(A2 * B1 * !B2 * X)	0.00141	0.00144	0.00142
	(A2 * B1 * !B2 * X)	-0.00078	-0.00080	-0.00079
	(A2 * !B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(A2 * !B1 * !B2 * !X)	-0.00155	-0.00160	-0.00159
	(A1 * !A2 * B2 * X)	0.00141	0.00144	0.00142
	(A1 * !A2 * B2 * X)	-0.00078	-0.00080	-0.00079
	(A1 * !A2 * B1 * !B2 * X)	0.00141	0.00144	0.00142
	(A1 * !A2 * B1 * !B2 * X)	-0.00078	-0.00080	-0.00078
	(A1 * !A2 * !B1 * !B2 * !X)	0.00125	0.00128	0.00126
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00141	-0.00153	-0.00151
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00161	-0.00161	-0.00161
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00163	0.00166	0.00163
	(A2 * B2 * X)	-0.00079	-0.00080	-0.00079
	(A2 * B1 * !B2 * X)	0.00163	0.00166	0.00163
	(A2 * B1 * !B2 * X)	-0.00079	-0.00080	-0.00079
	(A2 * !B1 * !B2 * !X)	0.00144	0.00144	0.00144
	(A2 * !B1 * !B2 * !X)	-0.00159	-0.00163	-0.00163
	(A1 * !A2 * B2 * X)	0.00163	0.00166	0.00163
	(A1 * !A2 * B2 * X)	-0.00078	-0.00080	-0.00079
	(A1 * !A2 * B1 * !B2 * X)	0.00163	0.00166	0.00163
	(A1 * !A2 * B1 * !B2 * X)	-0.00078	-0.00080	-0.00078
	(A1 * !A2 * !B1 * !B2 * !X)	0.00143	0.00145	0.00144
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00146	-0.00156	-0.00155
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00135	0.00136	0.00135
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00166	-0.00165	-0.00165

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00265	0.00270	0.00266
	(A2 * B2 * X)	-0.00158	-0.00161	-0.00158
	(A2 * B1 * !B2 * X)	0.00265	0.00270	0.00266
	(A2 * B1 * !B2 * X)	-0.00158	-0.00161	-0.00158
	(A2 * !B1 * !B2 * !X)	0.00244	0.00247	0.00245
	(A2 * !B1 * !B2 * !X)	-0.00296	-0.00309	-0.00307
	(A1 * !A2 * B2 * X)	0.00265	0.00270	0.00266
	(A1 * !A2 * B2 * X)	-0.00157	-0.00161	-0.00158
	(A1 * !A2 * B1 * !B2 * X)	0.00265	0.00270	0.00266
	(A1 * !A2 * B1 * !B2 * X)	-0.00157	-0.00160	-0.00158
	(A1 * !A2 * !B1 * !B2 * !X)	0.00245	0.00248	0.00245
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00272	-0.00292	-0.00290
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00232	0.00231	0.00231
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00315	-0.00314	-0.00314

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00136	-0.00137	-0.00141
	(A2 * B2 * X)	0.00084	0.00084	0.00080
	(A2 * B1 * !B2 * X)	-0.00136	-0.00137	-0.00141
	(A2 * B1 * !B2 * X)	0.00084	0.00084	0.00080
	(A2 * !B1 * !B2 * !X)	-0.00125	-0.00127	-0.00126
	(A2 * !B1 * !B2 * !X)	0.00158	0.00160	0.00159
	(A1 * !A2 * B2 * X)	-0.00130	-0.00131	-0.00140
	(A1 * !A2 * B2 * X)	0.00087	0.00087	0.00080
	(A1 * !A2 * B1 * !B2 * X)	-0.00130	-0.00131	-0.00140
	(A1 * !A2 * B1 * !B2 * X)	0.00087	0.00087	0.00080
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00125	-0.00127	-0.00126
	(A1 * !A2 * !B1 * !B2 * !X)	0.00151	0.00153	0.00151
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00111	-0.00119	-0.00118
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00162	0.00163	0.00162
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00158	-0.00159	-0.00162
	(A2 * B2 * X)	0.00084	0.00084	0.00080
	(A2 * B1 * !B2 * X)	-0.00158	-0.00159	-0.00162
	(A2 * B1 * !B2 * X)	0.00084	0.00084	0.00080
	(A2 * !B1 * !B2 * !X)	-0.00144	-0.00144	-0.00143
	(A2 * !B1 * !B2 * !X)	0.00163	0.00163	0.00163
	(A1 * !A2 * B2 * X)	-0.00151	-0.00152	-0.00161
	(A1 * !A2 * B2 * X)	0.00087	0.00087	0.00080
	(A1 * !A2 * B1 * !B2 * X)	-0.00151	-0.00152	-0.00161
	(A1 * !A2 * B1 * !B2 * X)	0.00087	0.00087	0.00080
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00143	-0.00145	-0.00143
	(A1 * !A2 * !B1 * !B2 * !X)	0.00155	0.00156	0.00155
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00127	-0.00136	-0.00135
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00166	0.00167	0.00166

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00249	-0.00251	-0.00264
	(A2 * B2 * X)	0.00173	0.00173	0.00162
	(A2 * B1 * !B2 * X)	-0.00249	-0.00251	-0.00264
	(A2 * B1 * !B2 * X)	0.00173	0.00173	0.00162
	(A2 * !B1 * !B2 * !X)	-0.00244	-0.00246	-0.00244
	(A2 * !B1 * !B2 * !X)	0.00306	0.00309	0.00307
	(A1 * !A2 * B2 * X)	-0.00234	-0.00236	-0.00261
	(A1 * !A2 * B2 * X)	0.00180	0.00180	0.00162
	(A1 * !A2 * B1 * !B2 * X)	-0.00235	-0.00236	-0.00261
	(A1 * !A2 * B1 * !B2 * X)	0.00180	0.00181	0.00162
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00245	-0.00246	-0.00244
	(A1 * !A2 * !B1 * !B2 * !X)	0.00291	0.00292	0.00290
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00215	-0.00231	-0.00231
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00317	0.00318	0.00315

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00167	0.00148	0.00144
	(A3 * B2 * X)	-0.00137	-0.00160	-0.00161
	(A2 * !A3 * B2 * X)	0.00167	0.00148	0.00144
	(A2 * !A3 * B2 * X)	-0.00137	-0.00160	-0.00161
	(A1 * !A2 * !A3 * B2 * X)	0.00167	0.00148	0.00144
	(A1 * !A2 * !A3 * B2 * X)	-0.00137	-0.00160	-0.00161
	(!A1 * !A2 * !A3 * B2 * !X)	0.00050	0.00051	0.00050
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00194	-0.00197	-0.00196
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00057	0.00057	0.00052
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00187	-0.00189	-0.00197

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00199	0.00179	0.00175
	(A3 * B2 * X)	-0.00152	-0.00175	-0.00175
	(A2 * !A3 * B2 * X)	0.00199	0.00179	0.00175
	(A2 * !A3 * B2 * X)	-0.00151	-0.00175	-0.00175
	(A1 * !A2 * !A3 * B2 * X)	0.00199	0.00179	0.00175
	(A1 * !A2 * !A3 * B2 * X)	-0.00151	-0.00175	-0.00175
	(!A1 * !A2 * !A3 * B2 * !X)	0.00061	0.00061	0.00060
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00219	-0.00223	-0.00222
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00069	0.00069	0.00063
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00212	-0.00214	-0.00223
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00361	0.00315	0.00307
	(A3 * B2 * X)	-0.00314	-0.00371	-0.00373
	(A2 * !A3 * B2 * X)	0.00361	0.00315	0.00307
	(A2 * !A3 * B2 * X)	-0.00313	-0.00371	-0.00373
	(A1 * !A2 * !A3 * B2 * X)	0.00362	0.00315	0.00307
	(A1 * !A2 * !A3 * B2 * X)	-0.00312	-0.00370	-0.00372
	(!A1 * !A2 * !A3 * B2 * !X)	0.00088	0.00089	0.00088
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00472	-0.00481	-0.00478
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00103	0.00103	0.00092
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00466	-0.00469	-0.00484

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00144	-0.00144	-0.00143
	(A3 * B2 * X)	0.00161	0.00162	0.00161
	(A2 * !A3 * B2 * X)	-0.00143	-0.00144	-0.00143
	(A2 * !A3 * B2 * X)	0.00160	0.00161	0.00161
	(A1 * !A2 * !A3 * B2 * X)	-0.00143	-0.00143	-0.00143
	(A1 * !A2 * !A3 * B2 * X)	0.00161	0.00161	0.00161
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * !A3 * B2 * !X)	0.00196	0.00198	0.00196
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00051	-0.00052	-0.00051
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00199	0.00202	0.00199
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00175	-0.00175	-0.00174
	(A3 * B2 * X)	0.00175	0.00177	0.00176
	(A2 * !A3 * B2 * X)	-0.00175	-0.00174	-0.00174
	(A2 * !A3 * B2 * X)	0.00175	0.00175	0.00176
	(A1 * !A2 * !A3 * B2 * X)	-0.00175	-0.00174	-0.00174
	(A1 * !A2 * !A3 * B2 * X)	0.00176	0.00175	0.00176
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * !A3 * B2 * !X)	0.00222	0.00224	0.00222
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00061	-0.00062	-0.00061
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00224	0.00227	0.00224
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00305	-0.00305	-0.00304
	(A3 * B2 * X)	0.00373	0.00373	0.00374
	(A2 * !A3 * B2 * X)	-0.00305	-0.00306	-0.00304
	(A2 * !A3 * B2 * X)	0.00372	0.00375	0.00373
	(A1 * !A2 * !A3 * B2 * X)	-0.00305	-0.00305	-0.00304
	(A1 * !A2 * !A3 * B2 * X)	0.00372	0.00372	0.00373
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00087	-0.00088	-0.00088
	(!A1 * !A2 * !A3 * B2 * !X)	0.00479	0.00481	0.00478
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00485	0.00489	0.00486

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00147	0.00150	0.00148
	(A3 * B1 * X)	-0.00079	-0.00081	-0.00079
	(A2 * !A3 * B1 * X)	0.00147	0.00150	0.00148
	(A2 * !A3 * B1 * X)	-0.00079	-0.00081	-0.00079
	(A1 * !A2 * !A3 * B1 * X)	0.00147	0.00150	0.00148
	(A1 * !A2 * !A3 * B1 * X)	-0.00079	-0.00081	-0.00079
	(!A1 * !A2 * !A3 * B1 * !X)	0.00042	0.00042	0.00041
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00192	-0.00194	-0.00193
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00048	0.00049	0.00043
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00186	-0.00187	-0.00195
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00165	0.00168	0.00166
	(A3 * B1 * X)	-0.00080	-0.00081	-0.00080
	(A2 * !A3 * B1 * X)	0.00165	0.00168	0.00166
	(A2 * !A3 * B1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * !A2 * !A3 * B1 * X)	0.00165	0.00168	0.00166
	(A1 * !A2 * !A3 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * !A2 * !A3 * B1 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00193	-0.00196	-0.00196
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00055	0.00055	0.00049
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00188	-0.00189	-0.00198

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00284	0.00290	0.00285
	(A3 * B1 * X)	-0.00160	-0.00164	-0.00161
	(A2 * !A3 * B1 * X)	0.00284	0.00290	0.00285
	(A2 * !A3 * B1 * X)	-0.00160	-0.00164	-0.00161
	(A1 * !A2 * !A3 * B1 * X)	0.00286	0.00285	0.00285
	(A1 * !A2 * !A3 * B1 * X)	-0.00163	-0.00161	-0.00161
	(!A1 * !A2 * !A3 * B1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00372	-0.00377	-0.00375
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00099	0.00099	0.00089
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00364	-0.00367	-0.00382

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00142	-0.00143	-0.00147
	(A3 * B1 * X)	0.00085	0.00085	0.00081
	(A2 * !A3 * B1 * X)	-0.00142	-0.00143	-0.00147
	(A2 * !A3 * B1 * X)	0.00085	0.00085	0.00081
	(A1 * !A2 * !A3 * B1 * X)	-0.00142	-0.00142	-0.00147
	(A1 * !A2 * !A3 * B1 * X)	0.00085	0.00085	0.00081
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * B1 * !X)	0.00193	0.00195	0.00193
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00196	0.00198	0.00196

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00160	-0.00161	-0.00165
	(A3 * B1 * X)	0.00085	0.00085	0.00081
	(A2 * !A3 * B1 * X)	-0.00160	-0.00161	-0.00165
	(A2 * !A3 * B1 * X)	0.00085	0.00085	0.00081
	(A1 * !A2 * !A3 * B1 * X)	-0.00160	-0.00160	-0.00165
	(A1 * !A2 * !A3 * B1 * X)	0.00085	0.00085	0.00081
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00046	-0.00047	-0.00047
	(!A1 * !A2 * !A3 * B1 * !X)	0.00195	0.00196	0.00196
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00048	-0.00048	-0.00047
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00200	0.00202	0.00199
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00272	-0.00273	-0.00284
	(A3 * B1 * X)	0.00171	0.00172	0.00164
	(A2 * !A3 * B1 * X)	-0.00271	-0.00273	-0.00284
	(A2 * !A3 * B1 * X)	0.00171	0.00172	0.00164
	(A1 * !A2 * !A3 * B1 * X)	-0.00271	-0.00274	-0.00283
	(A1 * !A2 * !A3 * B1 * X)	0.00171	0.00172	0.00164
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00085	-0.00085	-0.00084
	(!A1 * !A2 * !A3 * B1 * !X)	0.00377	0.00377	0.00375
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00085	-0.00086	-0.00085
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00383	0.00385	0.00385

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00269	0.00275	0.00285	0.00284	0.00287	0.26208
sky130_fd_sc_hs__o41ai_2	0.00529	0.00539	0.00518	0.00529	0.00558	0.46300
sky130_fd_sc_hs__o41ai_4	0.01028	0.01023	0.01039	0.01060	0.00774	0.86990

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.03238	0.10576
sky130_fd_sc_hs__o41ai_2	0.00000	0.06477	0.21153
sky130_fd_sc_hs__o41ai_4	0.00000	0.07995	0.31729

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)	0.27715	1.31448	10.05190
	A2->Y (FR)	0.26253	1.31033	10.45730
	A3->Y (FR)	0.22924	1.29711	10.86510
	A4->Y (FR)	0.17472	1.23228	10.71870
	B1->Y (FR)	0.03418	0.55622	5.75296
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.29487	1.17721	9.97233
	A2->Y (FR)	0.27682	1.16209	10.36440
	A3->Y (FR)	0.23810	1.15194	10.89780
	A4->Y (FR)	0.15988	1.06901	10.73930
	B1->Y (FR)	0.02613	0.47976	5.47323
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.27904	1.01704	9.87569
	A2->Y (FR)	0.26126	1.00692	10.32710
	A3->Y (FR)	0.22310	0.99350	10.85940
	A4->Y (FR)	0.14710	0.91586	10.75680
	B1->Y (FR)	0.03448	0.57553	7.30476

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.04024	0.33881	2.70155
	A2->Y (RF)	0.04125	0.33228	2.68480
	A3->Y (RF)	0.04063	0.32392	2.67086
	A4->Y (RF)	0.03371	0.31002	2.63859
	B1->Y (RF)	0.03088	0.37256	3.13073
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.03874	0.29785	2.59827
	A2->Y (RF)	0.03972	0.29076	2.58228
	A3->Y (RF)	0.03954	0.27992	2.55291
	A4->Y (RF)	0.03204	0.26325	2.52376
	B1->Y (RF)	0.02785	0.33352	3.12241
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.04253	0.26257	2.55620
	A2->Y (RF)	0.04160	0.25121	2.51013
	A3->Y (RF)	0.03938	0.23747	2.46811
	A4->Y (RF)	0.02927	0.21414	2.37885
	B1->Y (RF)	0.03073	0.34204	3.65128

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00128	0.00108	0.00329
	A1	0.00979	0.00959	0.01180
	A2	0.00133	0.00112	0.00354
	A2	0.00885	0.00865	0.01106
	A3	0.00131	0.00111	0.00390
	A3	0.00797	0.00776	0.01055
	A4	0.00128	0.00135	0.00706
	A4	0.00700	0.00705	0.01278
	B1	-0.00057	0.00024	0.00899
	B1	0.00645	0.00716	0.01547
sky130_fd_sc_hs__o41ai_2	A1	0.00190	0.00146	0.00557
	A1	0.01906	0.01864	0.02271
	A2	0.00197	0.00151	0.00609
	A2	0.01712	0.01665	0.02123
	A3	0.00203	0.00163	0.00690
	A3	0.01511	0.01468	0.01995
	A4	0.00193	0.00223	0.01303
	A4	0.01306	0.01338	0.02417
	B1	-0.00218	-0.00031	0.01752
	B1	0.01204	0.01366	0.03023

sky130_fd_sc_hs__o41ai_4	**A1**	0.00322	0.00246	0.01075
	A1	0.03692	0.03623	0.04438
	A2	0.00332	0.00252	0.01153
	A2	0.03295	0.03220	0.04113
	A3	0.00332	0.00251	0.01294
	A3	0.02911	0.02835	0.03873
	A4	0.00309	0.00398	0.02439
	A4	0.02497	0.02552	0.04630
	B1	-0.00338	-0.00159	0.01901
	B1	0.02045	0.02184	0.03979

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01133	0.01113	0.01340
	A1	0.00282	0.00265	0.00493
	A2	0.00958	0.00943	0.01168
	A2	0.00199	0.00184	0.00413
	A3	0.00773	0.00770	0.00995
	A3	0.00097	0.00092	0.00320
	A4	0.00581	0.00587	0.00817
	A4	-0.00006	0.00000	0.00230
	B1	0.00965	0.00966	0.01329
	B1	-0.00027	-0.00017	0.00408

sky130_fd_sc_hs__o41ai_2	**A1**	0.02378	0.02329	0.02773
	A1	0.00673	0.00627	0.01079
	A2	0.01975	0.01946	0.02399
	A2	0.00452	0.00421	0.00878
	A3	0.01603	0.01586	0.02038
	A3	0.00278	0.00260	0.00713
	A4	0.01124	0.01144	0.01613
	A4	-0.00020	-0.00001	0.00467
	B1	0.02024	0.02037	0.02780
	B1	-0.00051	-0.00028	0.00872
sky130_fd_sc_hs__o41ai_4	**A1**	0.04485	0.04394	0.05320
	A1	0.01141	0.01050	0.01985
	A2	0.03715	0.03649	0.04576
	A2	0.00736	0.00667	0.01608
	A3	0.02981	0.02944	0.03879
	A3	0.00358	0.00321	0.01256
	A4	0.02090	0.02133	0.03106
	A4	-0.00159	-0.00121	0.00858
	B1	0.03637	0.03652	0.04383
	B1	0.00041	0.00074	0.01019

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)**	0.00149	0.00151	0.00149
	(A2 * A4 * B1 * !Y)	-0.00175	-0.00180	-0.00179
	(A2 * A3 * !A4 * B1 * !Y)	0.00149	0.00151	0.00149
	(A2 * A3 * !A4 * B1 * !Y)	-0.00175	-0.00180	-0.00179
	(A2 * !B1 * Y)	0.00149	0.00151	0.00149
	(A2 * !B1 * Y)	-0.00175	-0.00180	-0.00179
	(A2 * !A3 * !A4 * B1 * !Y)	0.00149	0.00151	0.00149
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00173	-0.00180	-0.00179
	(!A2 * A3 * A4 * B1 * !Y)	0.00149	0.00150	0.00149
	(!A2 * A3 * A4 * B1 * !Y)	-0.00162	-0.00174	-0.00173
	(!A2 * A3 * !B1 * Y)	0.00149	0.00150	0.00149
	(!A2 * A3 * !B1 * Y)	-0.00162	-0.00174	-0.00173
	(!A2 * A3 * !A4 * B1 * !Y)	0.00149	0.00150	0.00149
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00162	-0.00174	-0.00173
	(!A2 * !A3 * A4 * B1 * !Y)	0.00150	0.00151	0.00149
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00159	-0.00171	-0.00171
	(!A2 * !A3 * A4 * !B1 * Y)	0.00149	0.00150	0.00149
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00160	-0.00171	-0.00171
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00142	0.00143	0.00142
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00182	-0.00182	-0.00181

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00296	0.00300	0.00296
	(A2 * A4 * B1 * !Y)	-0.00344	-0.00359	-0.00356
	(A2 * A3 * !A4 * B1 * !Y)	0.00296	0.00300	0.00296
	(A2 * A3 * !A4 * B1 * !Y)	-0.00344	-0.00359	-0.00356
	(A2 * !B1 * Y)	0.00296	0.00300	0.00296
	(A2 * !B1 * Y)	-0.00344	-0.00360	-0.00356
	(A2 * !A3 * !A4 * B1 * !Y)	0.00296	0.00300	0.00296
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00339	-0.00359	-0.00356
	(!A2 * A3 * A4 * B1 * !Y)	0.00296	0.00299	0.00296
	(!A2 * A3 * A4 * B1 * !Y)	-0.00318	-0.00346	-0.00344
	(!A2 * A3 * !B1 * Y)	0.00295	0.00299	0.00296
	(!A2 * A3 * !B1 * Y)	-0.00318	-0.00346	-0.00344
	(!A2 * A3 * !A4 * B1 * !Y)	0.00296	0.00299	0.00296
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00318	-0.00346	-0.00344
	(!A2 * !A3 * A4 * B1 * !Y)	0.00298	0.00299	0.00296
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00313	-0.00339	-0.00338
	(!A2 * !A3 * A4 * !B1 * Y)	0.00297	0.00299	0.00296
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00316	-0.00339	-0.00338
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00280	0.00281	0.00279
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00365	-0.00365	-0.00364

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00571	0.00578	0.00571
	(A2 * A4 * B1 * !Y)	-0.00688	-0.00714	-0.00711
	(A2 * A3 * !A4 * B1 * !Y)	0.00571	0.00578	0.00571
	(A2 * A3 * !A4 * B1 * !Y)	-0.00686	-0.00713	-0.00711
	(A2 * !B1 * Y)	0.00571	0.00578	0.00571
	(A2 * !B1 * Y)	-0.00688	-0.00714	-0.00711
	(A2 * !A3 * !A4 * B1 * !Y)	0.00572	0.00578	0.00571
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00673	-0.00712	-0.00712
	(!A2 * A3 * A4 * B1 * !Y)	0.00572	0.00578	0.00571
	(!A2 * A3 * A4 * B1 * !Y)	-0.00632	-0.00688	-0.00683
	(!A2 * A3 * !B1 * Y)	0.00572	0.00577	0.00571
	(!A2 * A3 * !B1 * Y)	-0.00633	-0.00688	-0.00683
	(!A2 * A3 * !A4 * B1 * !Y)	0.00572	0.00578	0.00571
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00633	-0.00688	-0.00683
	(!A2 * !A3 * A4 * B1 * !Y)	0.00578	0.00577	0.00571
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00626	-0.00676	-0.00673
	(!A2 * !A3 * A4 * !B1 * Y)	0.00567	0.00576	0.00571
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00622	-0.00674	-0.00672
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00533	0.00535	0.00534
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00725	-0.00727	-0.00725

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)**	-0.00149	-0.00150	-0.00149
	(A2 * A4 * B1 * !Y)	0.00180	0.00181	0.00179
	(A2 * A3 * !A4 * B1 * !Y)	-0.00149	-0.00150	-0.00149
	(A2 * A3 * !A4 * B1 * !Y)	0.00180	0.00181	0.00179
	(A2 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(A2 * !B1 * Y)	0.00180	0.00181	0.00179
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00149	-0.00149	-0.00149
	(A2 * !A3 * !A4 * B1 * !Y)	0.00180	0.00180	0.00179
	(!A2 * A3 * A4 * B1 * !Y)	-0.00149	-0.00150	-0.00149
	(!A2 * A3 * A4 * B1 * !Y)	0.00173	0.00174	0.00173
	(!A2 * A3 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(!A2 * A3 * !B1 * Y)	0.00173	0.00174	0.00173
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00149	-0.00149	-0.00149
	(!A2 * A3 * !A4 * B1 * !Y)	0.00173	0.00174	0.00173
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00148	-0.00149	-0.00149
	(!A2 * !A3 * A4 * B1 * !Y)	0.00170	0.00171	0.00171
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00149	-0.00149	-0.00149
	(!A2 * !A3 * A4 * !B1 * Y)	0.00170	0.00171	0.00171
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00131	-0.00142	-0.00142
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00182	0.00184	0.00182

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00296	-0.00297	-0.00295
	(A2 * A4 * B1 * !Y)	0.00357	0.00360	0.00356
	(A2 * A3 * !A4 * B1 * !Y)	-0.00296	-0.00297	-0.00295
	(A2 * A3 * !A4 * B1 * !Y)	0.00357	0.00360	0.00356
	(A2 * !B1 * Y)	-0.00296	-0.00297	-0.00295
	(A2 * !B1 * Y)	0.00357	0.00360	0.00356
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00296	-0.00297	-0.00295
	(A2 * !A3 * !A4 * B1 * !Y)	0.00357	0.00360	0.00356
	(!A2 * A3 * A4 * B1 * !Y)	-0.00296	-0.00297	-0.00295
	(!A2 * A3 * A4 * B1 * !Y)	0.00344	0.00346	0.00344
	(!A2 * A3 * !B1 * Y)	-0.00295	-0.00297	-0.00295
	(!A2 * A3 * !B1 * Y)	0.00344	0.00346	0.00344
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00296	-0.00297	-0.00295
	(!A2 * A3 * !A4 * B1 * !Y)	0.00344	0.00346	0.00344
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00295	-0.00296	-0.00295
	(!A2 * !A3 * A4 * B1 * !Y)	0.00336	0.00339	0.00338
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00295	-0.00296	-0.00295
	(!A2 * !A3 * A4 * !B1 * Y)	0.00336	0.00339	0.00338
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00260	-0.00281	-0.00279
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00366	0.00368	0.00365

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00568	-0.00571	-0.00569
	(A2 * A4 * B1 * !Y)	0.00708	0.00714	0.00711
	(A2 * A3 * !A4 * B1 * !Y)	-0.00568	-0.00571	-0.00569
	(A2 * A3 * !A4 * B1 * !Y)	0.00708	0.00713	0.00711
	(A2 * !B1 * Y)	-0.00568	-0.00571	-0.00569
	(A2 * !B1 * Y)	0.00708	0.00714	0.00711
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00568	-0.00570	-0.00569
	(A2 * !A3 * !A4 * B1 * !Y)	0.00709	0.00712	0.00712
	(!A2 * A3 * A4 * B1 * !Y)	-0.00569	-0.00572	-0.00569
	(!A2 * A3 * A4 * B1 * !Y)	0.00682	0.00688	0.00683
	(!A2 * A3 * !B1 * Y)	-0.00569	-0.00572	-0.00569
	(!A2 * A3 * !B1 * Y)	0.00683	0.00688	0.00683
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00568	-0.00572	-0.00569
	(!A2 * A3 * !A4 * B1 * !Y)	0.00681	0.00688	0.00683
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00569	-0.00571	-0.00569
	(!A2 * !A3 * A4 * B1 * !Y)	0.00672	0.00676	0.00673
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00567	-0.00571	-0.00570
	(!A2 * !A3 * A4 * !B1 * Y)	0.00671	0.00674	0.00672
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00500	-0.00535	-0.00534
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00729	0.00734	0.00728

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)**	0.00145	0.00146	0.00145
	(A1 * A3 * A4 * B1 * !Y)	-0.00125	-0.00124	-0.00124
	(A1 * A3 * !B1 * Y)	0.00144	0.00146	0.00144
	(A1 * A3 * !B1 * Y)	-0.00126	-0.00127	-0.00126
	(A1 * A3 * !A4 * B1 * !Y)	0.00150	0.00152	0.00146
	(A1 * A3 * !A4 * B1 * !Y)	-0.00118	-0.00119	-0.00119
	(A1 * !A3 * A4 * B1 * !Y)	0.00144	0.00146	0.00144
	(A1 * !A3 * A4 * B1 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * !A3 * A4 * !B1 * Y)	0.00144	0.00147	0.00144
	(A1 * !A3 * A4 * !B1 * Y)	-0.00123	-0.00125	-0.00124
	(A1 * !A3 * !A4 * B1 * !Y)	0.00144	0.00147	0.00144
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00098	-0.00100	-0.00098
	(A1 * !A3 * !A4 * !B1 * Y)	0.00146	0.00144	0.00144
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00173	-0.00174	-0.00174
	(!A1 * A3 * A4 * B1 * !Y)	0.00144	0.00144	0.00144
	(!A1 * A3 * A4 * B1 * !Y)	-0.00168	-0.00175	-0.00174
	(!A1 * A3 * !B1 * Y)	0.00144	0.00144	0.00144
	(!A1 * A3 * !B1 * Y)	-0.00169	-0.00175	-0.00174
	(!A1 * A3 * !A4 * B1 * !Y)	0.00153	0.00144	0.00145
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00158	-0.00175	-0.00175
	(!A1 * !A3 * A4 * B1 * !Y)	0.00150	0.00147	0.00145
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00149	-0.00168	-0.00167
	(!A1 * !A3 * A4 * !B1 * Y)	0.00144	0.00146	0.00144
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00153	-0.00168	-0.00167
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00135	0.00137	0.00135
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00298	0.00301	0.00297
	(A1 * A3 * A4 * B1 * !Y)	-0.00259	-0.00259	-0.00258
	(A1 * A3 * !B1 * Y)	0.00297	0.00300	0.00297
	(A1 * A3 * !B1 * Y)	-0.00262	-0.00263	-0.00262
	(A1 * A3 * !A4 * B1 * !Y)	0.00300	0.00305	0.00298
	(A1 * A3 * !A4 * B1 * !Y)	-0.00247	-0.00248	-0.00247
	(A1 * !A3 * A4 * B1 * !Y)	0.00298	0.00301	0.00298
	(A1 * !A3 * A4 * B1 * !Y)	-0.00243	-0.00244	-0.00243
	(A1 * !A3 * A4 * !B1 * Y)	0.00296	0.00298	0.00297
	(A1 * !A3 * A4 * !B1 * Y)	-0.00260	-0.00263	-0.00260
	(A1 * !A3 * !A4 * B1 * !Y)	0.00297	0.00302	0.00297
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00206	-0.00209	-0.00206
	(A1 * !A3 * !A4 * !B1 * Y)	0.00295	0.00296	0.00297
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00350	-0.00359	-0.00358
	(!A1 * A3 * A4 * B1 * !Y)	0.00296	0.00298	0.00297
	(!A1 * A3 * A4 * B1 * !Y)	-0.00350	-0.00364	-0.00363
	(!A1 * A3 * !B1 * Y)	0.00295	0.00298	0.00297
	(!A1 * A3 * !B1 * Y)	-0.00352	-0.00364	-0.00363
	(!A1 * A3 * !A4 * B1 * !Y)	0.00302	0.00298	0.00297
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00340	-0.00364	-0.00363
	(!A1 * !A3 * A4 * B1 * !Y)	0.00303	0.00298	0.00297
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00319	-0.00350	-0.00348
	(!A1 * !A3 * A4 * !B1 * Y)	0.00296	0.00297	0.00297
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00325	-0.00350	-0.00348
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00279	0.00279	0.00278
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00370	-0.00369	-0.00369

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00568	0.00573	0.00566
	(A1 * A3 * A4 * B1 * !Y)	-0.00487	-0.00489	-0.00487
	(A1 * A3 * !B1 * Y)	0.00569	0.00572	0.00566
	(A1 * A3 * !B1 * Y)	-0.00494	-0.00498	-0.00496
	(A1 * A3 * !A4 * B1 * !Y)	0.00579	0.00585	0.00568
	(A1 * A3 * !A4 * B1 * !Y)	-0.00467	-0.00470	-0.00468
	(A1 * !A3 * A4 * B1 * !Y)	0.00567	0.00572	0.00567
	(A1 * !A3 * A4 * B1 * !Y)	-0.00464	-0.00465	-0.00463
	(A1 * !A3 * A4 * !B1 * Y)	0.00564	0.00568	0.00566
	(A1 * !A3 * A4 * !B1 * Y)	-0.00494	-0.00500	-0.00495
	(A1 * !A3 * !A4 * B1 * !Y)	0.00565	0.00575	0.00565
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00392	-0.00399	-0.00392
	(A1 * !A3 * !A4 * !B1 * Y)	0.00561	0.00571	0.00565
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00688	-0.00705	-0.00703
	(!A1 * A3 * A4 * B1 * !Y)	0.00565	0.00569	0.00565
	(!A1 * A3 * A4 * B1 * !Y)	-0.00680	-0.00709	-0.00705
	(!A1 * A3 * !B1 * Y)	0.00563	0.00569	0.00565
	(!A1 * A3 * !B1 * Y)	-0.00683	-0.00709	-0.00705
	(!A1 * A3 * !A4 * B1 * !Y)	0.00594	0.00569	0.00565
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00645	-0.00709	-0.00706
	(!A1 * !A3 * A4 * B1 * !Y)	0.00584	0.00568	0.00565
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00608	-0.00679	-0.00676
	(!A1 * !A3 * A4 * !B1 * Y)	0.00564	0.00567	0.00565
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00623	-0.00679	-0.00675
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00529	0.00533	0.00528
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00724	-0.00726	-0.00723

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)**	-0.00144	-0.00144	-0.00144
	(A1 * A3 * A4 * B1 * !Y)	0.00125	0.00124	0.00124
	(A1 * A3 * !B1 * Y)	-0.00144	-0.00144	-0.00144
	(A1 * A3 * !B1 * Y)	0.00126	0.00127	0.00126
	(A1 * A3 * !A4 * B1 * !Y)	-0.00144	-0.00144	-0.00144
	(A1 * A3 * !A4 * B1 * !Y)	0.00118	0.00119	0.00119
	(A1 * !A3 * A4 * B1 * !Y)	-0.00144	-0.00144	-0.00144
	(A1 * !A3 * A4 * B1 * !Y)	0.00116	0.00116	0.00116
	(A1 * !A3 * A4 * !B1 * Y)	-0.00144	-0.00145	-0.00144
	(A1 * !A3 * A4 * !B1 * Y)	0.00123	0.00125	0.00124
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(A1 * !A3 * !A4 * B1 * !Y)	0.00102	0.00104	0.00104
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00144	-0.00144	-0.00144
	(A1 * !A3 * !A4 * !B1 * Y)	0.00174	0.00174	0.00174
	(!A1 * A3 * A4 * B1 * !Y)	-0.00144	-0.00144	-0.00144
	(!A1 * A3 * A4 * B1 * !Y)	0.00174	0.00176	0.00174
	(!A1 * A3 * !B1 * Y)	-0.00144	-0.00144	-0.00144
	(!A1 * A3 * !B1 * Y)	0.00174	0.00176	0.00174
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00144	-0.00144	-0.00144
	(!A1 * A3 * !A4 * B1 * !Y)	0.00174	0.00176	0.00175
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00144	-0.00144	-0.00144
	(!A1 * !A3 * A4 * B1 * !Y)	0.00168	0.00168	0.00167
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00143	-0.00145	-0.00144
	(!A1 * !A3 * A4 * !B1 * Y)	0.00165	0.00168	0.00167
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00127	-0.00137	-0.00135
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00178	0.00179	0.00178

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00297	-0.00297	-0.00296
	(A1 * A3 * A4 * B1 * !Y)	0.00259	0.00259	0.00258
	(A1 * A3 * !B1 * Y)	-0.00296	-0.00297	-0.00296
	(A1 * A3 * !B1 * Y)	0.00262	0.00263	0.00262
	(A1 * A3 * !A4 * B1 * !Y)	-0.00296	-0.00297	-0.00296
	(A1 * A3 * !A4 * B1 * !Y)	0.00247	0.00248	0.00247
	(A1 * !A3 * A4 * B1 * !Y)	-0.00297	-0.00298	-0.00297
	(A1 * !A3 * A4 * B1 * !Y)	0.00243	0.00244	0.00243
	(A1 * !A3 * A4 * !B1 * Y)	-0.00295	-0.00298	-0.00296
	(A1 * !A3 * A4 * !B1 * Y)	0.00260	0.00263	0.00260
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00287	-0.00288	-0.00285
	(A1 * !A3 * !A4 * B1 * !Y)	0.00216	0.00217	0.00217
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00295	-0.00296	-0.00296
	(A1 * !A3 * !A4 * !B1 * Y)	0.00357	0.00359	0.00358
	(!A1 * A3 * A4 * B1 * !Y)	-0.00295	-0.00296	-0.00296
	(!A1 * A3 * A4 * B1 * !Y)	0.00361	0.00364	0.00363
	(!A1 * A3 * !B1 * Y)	-0.00295	-0.00296	-0.00296
	(!A1 * A3 * !B1 * Y)	0.00361	0.00364	0.00363
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00295	-0.00297	-0.00296
	(!A1 * A3 * !A4 * B1 * !Y)	0.00361	0.00364	0.00363
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00296	-0.00297	-0.00296
	(!A1 * !A3 * A4 * B1 * !Y)	0.00347	0.00350	0.00348
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00295	-0.00297	-0.00296
	(!A1 * !A3 * A4 * !B1 * Y)	0.00346	0.00350	0.00348
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00258	-0.00279	-0.00278
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00370	0.00372	0.00370

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00563	-0.00565	-0.00564
	(A1 * A3 * A4 * B1 * !Y)	0.00487	0.00489	0.00487
	(A1 * A3 * !B1 * Y)	-0.00562	-0.00566	-0.00564
	(A1 * A3 * !B1 * Y)	0.00494	0.00498	0.00496
	(A1 * A3 * !A4 * B1 * !Y)	-0.00563	-0.00565	-0.00564
	(A1 * A3 * !A4 * B1 * !Y)	0.00467	0.00470	0.00468
	(A1 * !A3 * A4 * B1 * !Y)	-0.00565	-0.00567	-0.00565
	(A1 * !A3 * A4 * B1 * !Y)	0.00464	0.00465	0.00463
	(A1 * !A3 * A4 * !B1 * Y)	-0.00563	-0.00567	-0.00564
	(A1 * !A3 * A4 * !B1 * Y)	0.00494	0.00500	0.00495
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00544	-0.00546	-0.00539
	(A1 * !A3 * !A4 * B1 * !Y)	0.00415	0.00417	0.00416
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00561	-0.00565	-0.00564
	(A1 * !A3 * !A4 * !B1 * Y)	0.00701	0.00705	0.00703
	(!A1 * A3 * A4 * B1 * !Y)	-0.00562	-0.00566	-0.00564
	(!A1 * A3 * A4 * B1 * !Y)	0.00701	0.00709	0.00705
	(!A1 * A3 * !B1 * Y)	-0.00562	-0.00566	-0.00564
	(!A1 * A3 * !B1 * Y)	0.00702	0.00709	0.00705
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00562	-0.00565	-0.00564
	(!A1 * A3 * !A4 * B1 * !Y)	0.00702	0.00709	0.00706
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00563	-0.00566	-0.00563
	(!A1 * !A3 * A4 * B1 * !Y)	0.00674	0.00679	0.00676
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00563	-0.00566	-0.00564
	(!A1 * !A3 * A4 * !B1 * Y)	0.00673	0.00679	0.00675
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00493	-0.00533	-0.00528
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00725	0.00730	0.00725

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)**	0.00158	0.00160	0.00152
	(A2 * A4 * B1 * !Y)	-0.00114	-0.00114	-0.00114
	(A2 * A4 * !B1 * Y)	0.00144	0.00146	0.00145
	(A2 * A4 * !B1 * Y)	-0.00129	-0.00130	-0.00129
	(A2 * !A4 * B1 * !Y)	0.00151	0.00154	0.00150
	(A2 * !A4 * B1 * !Y)	-0.00096	-0.00098	-0.00097
	(A2 * !A4 * !B1 * Y)	0.00146	0.00146	0.00145
	(A2 * !A4 * !B1 * Y)	-0.00175	-0.00180	-0.00179
	(A1 * !A2 * A4 * B1 * !Y)	0.00164	0.00153	0.00150
	(A1 * !A2 * A4 * B1 * !Y)	-0.00116	-0.00119	-0.00118
	(A1 * !A2 * A4 * !B1 * Y)	0.00144	0.00144	0.00145
	(A1 * !A2 * A4 * !B1 * Y)	-0.00128	-0.00130	-0.00128
	(A1 * !A2 * !A4 * B1 * !Y)	0.00151	0.00154	0.00150
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00095	-0.00097	-0.00096
	(A1 * !A2 * !A4 * !B1 * Y)	0.00144	0.00145	0.00145
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00157	-0.00171	-0.00170
	(!A1 * !A2 * A4 * B1 * !Y)	0.00182	0.00153	0.00150
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00138	-0.00173	-0.00174
	(!A1 * !A2 * A4 * !B1 * Y)	0.00144	0.00146	0.00145
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00175	-0.00179	-0.00178
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00136	0.00136	0.00137
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00181	-0.00181	-0.00182

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00290	0.00296	0.00285
	(A2 * A4 * B1 * !Y)	-0.00234	-0.00234	-0.00233
	(A2 * A4 * !B1 * Y)	0.00281	0.00284	0.00280
	(A2 * A4 * !B1 * Y)	-0.00261	-0.00262	-0.00260
	(A2 * !A4 * B1 * !Y)	0.00283	0.00287	0.00282
	(A2 * !A4 * B1 * !Y)	-0.00198	-0.00201	-0.00199
	(A2 * !A4 * !B1 * Y)	0.00279	0.00280	0.00280
	(A2 * !A4 * !B1 * Y)	-0.00343	-0.00355	-0.00354
	(A1 * !A2 * A4 * B1 * !Y)	0.00302	0.00287	0.00282
	(A1 * !A2 * A4 * B1 * !Y)	-0.00242	-0.00243	-0.00241
	(A1 * !A2 * A4 * !B1 * Y)	0.00279	0.00282	0.00280
	(A1 * !A2 * A4 * !B1 * Y)	-0.00255	-0.00257	-0.00254
	(A1 * !A2 * !A4 * B1 * !Y)	0.00284	0.00288	0.00282
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00196	-0.00199	-0.00197
	(A1 * !A2 * !A4 * !B1 * Y)	0.00279	0.00281	0.00280
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00314	-0.00335	-0.00334
	(!A1 * !A2 * A4 * B1 * !Y)	0.00348	0.00282	0.00281
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00279	-0.00350	-0.00353
	(!A1 * !A2 * A4 * !B1 * Y)	0.00279	0.00279	0.00280
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00344	-0.00353	-0.00352
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00266	0.00270	0.00267
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00360	-0.00362	-0.00360

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00598	0.00615	0.00586
	(A2 * A4 * B1 * !Y)	-0.00462	-0.00463	-0.00464
	(A2 * A4 * !B1 * Y)	0.00577	0.00583	0.00576
	(A2 * A4 * !B1 * Y)	-0.00509	-0.00511	-0.00508
	(A2 * !A4 * B1 * !Y)	0.00579	0.00588	0.00576
	(A2 * !A4 * B1 * !Y)	-0.00400	-0.00406	-0.00401
	(A2 * !A4 * !B1 * Y)	0.00574	0.00582	0.00575
	(A2 * !A4 * !B1 * Y)	-0.00692	-0.00713	-0.00712
	(A1 * !A2 * A4 * B1 * !Y)	0.00633	0.00589	0.00577
	(A1 * !A2 * A4 * B1 * !Y)	-0.00484	-0.00486	-0.00483
	(A1 * !A2 * A4 * !B1 * Y)	0.00574	0.00579	0.00575
	(A1 * !A2 * A4 * !B1 * Y)	-0.00505	-0.00509	-0.00504
	(A1 * !A2 * !A4 * B1 * !Y)	0.00585	0.00590	0.00577
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00400	-0.00403	-0.00398
	(A1 * !A2 * !A4 * !B1 * Y)	0.00577	0.00575	0.00574
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00629	-0.00668	-0.00666
	(!A1 * !A2 * A4 * B1 * !Y)	0.00721	0.00581	0.00575
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00569	-0.00717	-0.00723
	(!A1 * !A2 * A4 * !B1 * Y)	0.00574	0.00575	0.00575
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00707	-0.00720	-0.00719
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00539	0.00544	0.00542
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00731	-0.00735	-0.00734

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)**	-0.00149	-0.00150	-0.00150
	(A2 * A4 * B1 * !Y)	0.00114	0.00114	0.00114
	(A2 * A4 * !B1 * Y)	-0.00144	-0.00145	-0.00144
	(A2 * A4 * !B1 * Y)	0.00129	0.00130	0.00129
	(A2 * !A4 * B1 * !Y)	-0.00149	-0.00150	-0.00148
	(A2 * !A4 * B1 * !Y)	0.00099	0.00099	0.00100
	(A2 * !A4 * !B1 * Y)	-0.00144	-0.00145	-0.00144
	(A2 * !A4 * !B1 * Y)	0.00178	0.00180	0.00179
	(A1 * !A2 * A4 * B1 * !Y)	-0.00150	-0.00150	-0.00150
	(A1 * !A2 * A4 * B1 * !Y)	0.00119	0.00119	0.00118
	(A1 * !A2 * A4 * !B1 * Y)	-0.00144	-0.00144	-0.00144
	(A1 * !A2 * A4 * !B1 * Y)	0.00128	0.00130	0.00128
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00145	-0.00146	-0.00148
	(A1 * !A2 * !A4 * B1 * !Y)	0.00100	0.00101	0.00098
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00144	-0.00145	-0.00144
	(A1 * !A2 * !A4 * !B1 * Y)	0.00170	0.00171	0.00170
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00149	-0.00150	-0.00149
	(!A1 * !A2 * A4 * B1 * !Y)	0.00173	0.00174	0.00174
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00144	-0.00145	-0.00144
	(!A1 * !A2 * A4 * !B1 * Y)	0.00178	0.00179	0.00178
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00127	-0.00136	-0.00137
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00182	0.00184	0.00182

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00282	-0.00283	-0.00282
	(A2 * A4 * B1 * !Y)	0.00234	0.00234	0.00233
	(A2 * A4 * !B1 * Y)	-0.00280	-0.00281	-0.00280
	(A2 * A4 * !B1 * Y)	0.00261	0.00262	0.00260
	(A2 * !A4 * B1 * !Y)	-0.00277	-0.00280	-0.00276
	(A2 * !A4 * B1 * !Y)	0.00201	0.00205	0.00205
	(A2 * !A4 * !B1 * Y)	-0.00279	-0.00280	-0.00280
	(A2 * !A4 * !B1 * Y)	0.00352	0.00355	0.00354
	(A1 * !A2 * A4 * B1 * !Y)	-0.00282	-0.00283	-0.00282
	(A1 * !A2 * A4 * B1 * !Y)	0.00242	0.00243	0.00241
	(A1 * !A2 * A4 * !B1 * Y)	-0.00279	-0.00281	-0.00280
	(A1 * !A2 * A4 * !B1 * Y)	0.00255	0.00257	0.00254
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00269	-0.00272	-0.00274
	(A1 * !A2 * !A4 * B1 * !Y)	0.00202	0.00205	0.00203
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00279	-0.00280	-0.00280
	(A1 * !A2 * !A4 * !B1 * Y)	0.00333	0.00335	0.00334
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00279	-0.00280	-0.00279
	(!A1 * !A2 * A4 * B1 * !Y)	0.00351	0.00353	0.00353
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00279	-0.00279	-0.00280
	(!A1 * !A2 * A4 * !B1 * Y)	0.00351	0.00354	0.00352
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00246	-0.00266	-0.00267
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00362	0.00364	0.00361

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00575	-0.00576	-0.00576
	(A2 * A4 * B1 * !Y)	0.00462	0.00463	0.00464
	(A2 * A4 * !B1 * Y)	-0.00574	-0.00576	-0.00574
	(A2 * A4 * !B1 * Y)	0.00509	0.00511	0.00508
	(A2 * !A4 * B1 * !Y)	-0.00572	-0.00574	-0.00566
	(A2 * !A4 * B1 * !Y)	0.00408	0.00410	0.00412
	(A2 * !A4 * !B1 * Y)	-0.00574	-0.00575	-0.00573
	(A2 * !A4 * !B1 * Y)	0.00712	0.00713	0.00712
	(A1 * !A2 * A4 * B1 * !Y)	-0.00576	-0.00578	-0.00575
	(A1 * !A2 * A4 * B1 * !Y)	0.00484	0.00486	0.00483
	(A1 * !A2 * A4 * !B1 * Y)	-0.00574	-0.00577	-0.00574
	(A1 * !A2 * A4 * !B1 * Y)	0.00505	0.00509	0.00504
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00553	-0.00553	-0.00564
	(A1 * !A2 * !A4 * B1 * !Y)	0.00411	0.00409	0.00408
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00573	-0.00574	-0.00573
	(A1 * !A2 * !A4 * !B1 * Y)	0.00665	0.00668	0.00666
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00571	-0.00574	-0.00570
	(!A1 * !A2 * A4 * B1 * !Y)	0.00718	0.00723	0.00723
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00572	-0.00575	-0.00573
	(!A1 * !A2 * A4 * !B1 * Y)	0.00717	0.00720	0.00719
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00501	-0.00544	-0.00542
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00737	0.00741	0.00735

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00163	0.00166	0.00164
	(A3 * B1 * !Y)	-0.00086	-0.00087	-0.00086
	(A3 * !B1 * Y)	0.00143	0.00144	0.00144
	(A3 * !B1 * Y)	-0.00174	-0.00180	-0.00179
	(A2 * !A3 * B1 * !Y)	0.00163	0.00166	0.00164
	(A2 * !A3 * B1 * !Y)	-0.00086	-0.00087	-0.00086
	(A2 * !A3 * !B1 * Y)	0.00143	0.00146	0.00144
	(A2 * !A3 * !B1 * Y)	-0.00158	-0.00173	-0.00172
	(A1 * !A2 * !A3 * B1 * !Y)	0.00163	0.00166	0.00164
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00085	-0.00087	-0.00086
	(A1 * !A2 * !A3 * !B1 * Y)	0.00145	0.00146	0.00144
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00157	-0.00168	-0.00168
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00137	0.00139	0.00137
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00182	-0.00183	-0.00182
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00318	0.00323	0.00318
	(A3 * B1 * !Y)	-0.00177	-0.00180	-0.00177
	(A3 * !B1 * Y)	0.00286	0.00286	0.00284
	(A3 * !B1 * Y)	-0.00347	-0.00358	-0.00357
	(A2 * !A3 * B1 * !Y)	0.00318	0.00323	0.00318
	(A2 * !A3 * B1 * !Y)	-0.00177	-0.00179	-0.00176
	(A2 * !A3 * !B1 * Y)	0.00283	0.00285	0.00284
	(A2 * !A3 * !B1 * Y)	-0.00315	-0.00340	-0.00341
	(A1 * !A2 * !A3 * B1 * !Y)	0.00318	0.00323	0.00318
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00177	-0.00179	-0.00176
	(A1 * !A2 * !A3 * !B1 * Y)	0.00283	0.00284	0.00284
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00309	-0.00334	-0.00332
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00270	0.00272	0.00270
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00364	-0.00366	-0.00364

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00655	0.00663	0.00653
	(A3 * B1 * !Y)	-0.00346	-0.00348	-0.00343
	(A3 * !B1 * Y)	0.00579	0.00582	0.00576
	(A3 * !B1 * Y)	-0.00689	-0.00712	-0.00711
	(A2 * !A3 * B1 * !Y)	0.00655	0.00664	0.00653
	(A2 * !A3 * B1 * !Y)	-0.00345	-0.00348	-0.00342
	(A2 * !A3 * !B1 * Y)	0.00574	0.00579	0.00576
	(A2 * !A3 * !B1 * Y)	-0.00617	-0.00673	-0.00670
	(A1 * !A2 * !A3 * B1 * !Y)	0.00649	0.00664	0.00653
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00339	-0.00348	-0.00342
	(A1 * !A2 * !A3 * !B1 * Y)	0.00574	0.00576	0.00575
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00608	-0.00653	-0.00650
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00546	0.00548	0.00545
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00726	-0.00726	-0.00724

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00158	-0.00159	-0.00163
	(A3 * B1 * !Y)	0.00092	0.00092	0.00087
	(A3 * !B1 * Y)	-0.00143	-0.00144	-0.00144
	(A3 * !B1 * Y)	0.00179	0.00180	0.00179
	(A2 * !A3 * B1 * !Y)	-0.00150	-0.00151	-0.00162
	(A2 * !A3 * B1 * !Y)	0.00096	0.00096	0.00088
	(A2 * !A3 * !B1 * Y)	-0.00143	-0.00144	-0.00143
	(A2 * !A3 * !B1 * Y)	0.00172	0.00173	0.00172
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00138	-0.00140	-0.00159
	(A1 * !A2 * !A3 * B1 * !Y)	0.00102	0.00103	0.00089
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00144	-0.00144	-0.00144
	(A1 * !A2 * !A3 * !B1 * Y)	0.00168	0.00168	0.00168
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00127	-0.00137	-0.00137
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00183	0.00184	0.00182
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00298	-0.00299	-0.00315
	(A3 * B1 * !Y)	0.00193	0.00192	0.00181
	(A3 * !B1 * Y)	-0.00283	-0.00284	-0.00283
	(A3 * !B1 * Y)	0.00355	0.00358	0.00357
	(A2 * !A3 * B1 * !Y)	-0.00282	-0.00283	-0.00312
	(A2 * !A3 * B1 * !Y)	0.00201	0.00201	0.00181
	(A2 * !A3 * !B1 * Y)	-0.00283	-0.00283	-0.00283
	(A2 * !A3 * !B1 * Y)	0.00340	0.00340	0.00341
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00255	-0.00257	-0.00305
	(A1 * !A2 * !A3 * B1 * !Y)	0.00217	0.00216	0.00185
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00283	-0.00284	-0.00283
	(A1 * !A2 * !A3 * !B1 * Y)	0.00331	0.00334	0.00332
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00249	-0.00270	-0.00270
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00366	0.00368	0.00365

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00620	-0.00627	-0.00649
	(A3 * B1 * !Y)	0.00370	0.00373	0.00350
	(A3 * !B1 * Y)	-0.00576	-0.00576	-0.00574
	(A3 * !B1 * Y)	0.00711	0.00712	0.00711
	(A2 * !A3 * B1 * !Y)	-0.00587	-0.00594	-0.00643
	(A2 * !A3 * B1 * !Y)	0.00384	0.00387	0.00349
	(A2 * !A3 * !B1 * Y)	-0.00574	-0.00577	-0.00574
	(A2 * !A3 * !B1 * Y)	0.00668	0.00673	0.00670
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00536	-0.00537	-0.00629
	(A1 * !A2 * !A3 * B1 * !Y)	0.00415	0.00413	0.00358
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00574	-0.00576	-0.00574
	(A1 * !A2 * !A3 * !B1 * Y)	0.00651	0.00653	0.00650
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00505	-0.00545	-0.00545
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00729	0.00731	0.00726

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)	0.00061	0.00062	0.00056
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00211	-0.00212	-0.00221
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00142	0.00143	0.00132
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00401	-0.00405	-0.00424
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00207	0.00207	0.00188
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00440	-0.00444	-0.00481

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)	-0.00055	-0.00054	-0.00054
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00223	0.00223	0.00223
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00128	-0.00130	-0.00128
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00425	0.00433	0.00426
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00181	-0.00185	-0.00181
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00484	0.00493	0.00485

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00256	0.00265	0.00266	0.00269	0.00246	1.06267
sky130_fd_sc_hs__o41a_2	0.00271	0.00284	0.00291	0.00278	0.00280	2.15613
sky130_fd_sc_hs__o41a_4	0.00491	0.00529	0.00533	0.00499	0.00459	3.85997

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.17719	0.35208
sky130_fd_sc_hs__o41a_2	0.00000	0.13271	0.19993
sky130_fd_sc_hs__o41a_4	0.00000	0.41637	0.71654

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)	0.09751	0.66403	6.47549
	A2->X (RR)	0.09542	0.64967	6.39086
	A3->X (RR)	0.08991	0.62928	6.30387
	A4->X (RR)	0.07919	0.60434	6.26590
	B1->X (RR)	0.08748	0.65875	6.61582
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.09740	0.56173	6.39210
	A2->X (RR)	0.09590	0.55031	6.32484
	A3->X (RR)	0.09173	0.53530	6.25356
	A4->X (RR)	0.08004	0.51256	6.21151
	B1->X (RR)	0.08799	0.56436	6.55398
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.10742	0.50553	6.42330
	A2->X (RR)	0.10593	0.49373	6.35424
	A3->X (RR)	0.09569	0.47285	6.26595
	A4->X (RR)	0.08685	0.44873	6.22612
	B1->X (RR)	0.09713	0.51943	6.65421

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.32925	0.81296	4.93723
	A2->X (FF)	0.31332	0.80439	5.07473
	A3->X (FF)	0.27828	0.78576	5.15613
	A4->X (FF)	0.22727	0.74500	5.03425
	B1->X (FF)	0.07582	0.53912	4.57935
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.39886	0.88023	5.27479
	A2->X (FF)	0.38535	0.87688	5.43764
	A3->X (FF)	0.35275	0.86249	5.54795
	A4->X (FF)	0.29479	0.81576	5.44521
	B1->X (FF)	0.08160	0.52911	4.74487
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.41009	0.85706	5.16711
	A2->X (FF)	0.39193	0.84429	5.31664
	A3->X (FF)	0.34557	0.81435	5.41610
	A4->X (FF)	0.28065	0.76038	5.29126
	B1->X (FF)	0.09031	0.49964	4.68504

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.01404	0.01413	0.02357
	A1	0.00605	0.00616	0.01572
	A2	0.01221	0.01228	0.02141
	A2	0.00517	0.00531	0.01454
	A3	0.01027	0.01040	0.01952
	A3	0.00416	0.00429	0.01359
	A4	0.00849	0.00867	0.02167
	A4	0.00321	0.00340	0.01663
	B1	0.01252	0.01301	0.03152
	B1	0.00334	0.00417	0.02596
sky130_fd_sc_hs__o41a_2	A1	0.01704	0.01742	0.02666
	A1	0.00846	0.00886	0.01851
	A2	0.01536	0.01571	0.02461
	A2	0.00769	0.00805	0.01738
	A3	0.01347	0.01389	0.02271
	A3	0.00664	0.00708	0.01646
	A4	0.01144	0.01192	0.02445
	A4	0.00557	0.00609	0.01922
	B1	0.01534	0.01594	0.03489
	B1	0.00553	0.00650	0.02924

sky130_fd_sc_hs__o41a_4	**A1**	0.03325	0.03375	0.05185
	A1	0.01737	0.01789	0.03669
	A2	0.03026	0.03086	0.04831
	A2	0.01559	0.01624	0.03444
	A3	0.02580	0.02660	0.04401
	A3	0.01310	0.01403	0.03238
	A4	0.02124	0.02222	0.04667
	A4	0.01083	0.01188	0.03743
	B1	0.02992	0.03130	0.07014
	B1	0.01116	0.01316	0.06007

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00446	0.00446	0.01357
	A1	0.01243	0.01243	0.02095
	A2	0.00451	0.00448	0.01363
	A2	0.01146	0.01148	0.02008
	A3	0.00452	0.00443	0.01360
	A3	0.01052	0.01056	0.01951
	A4	0.00448	0.00507	0.01938
	A4	0.00961	0.01020	0.02375
	B1	0.00286	0.00436	0.03039
	B1	0.00916	0.01050	0.03448

sky130_fd_sc_hs__o41a_2	**A1**	0.00759	0.00702	0.01546
	A1	0.01610	0.01553	0.02394
	A2	0.00763	0.00691	0.01683
	A2	0.01519	0.01462	0.02311
	A3	0.00763	0.00695	0.01687
	A3	0.01431	0.01375	0.02254
	A4	0.00761	0.00743	0.02251
	A4	0.01329	0.01325	0.02683
	B1	0.00509	0.00667	0.03318
	B1	0.01197	0.01338	0.03620
sky130_fd_sc_hs__o41a_4	**A1**	0.01514	0.01384	0.02959
	A1	0.03103	0.02983	0.04530
	A2	0.01459	0.01275	0.03266
	A2	0.02913	0.02792	0.04379
	A3	0.01478	0.01340	0.03287
	A3	0.02722	0.02583	0.04277
	A4	0.01511	0.01478	0.04665
	A4	0.02522	0.02487	0.05085
	B1	0.01035	0.01377	0.06430
	B1	0.02292	0.02586	0.07278

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)**	0.00131	0.00132	0.00131
	(A2 * A4 * B1 * X)	-0.00177	-0.00182	-0.00182
	(A2 * A3 * !A4 * B1 * X)	0.00131	0.00132	0.00131
	(A2 * A3 * !A4 * B1 * X)	-0.00177	-0.00182	-0.00182
	(A2 * !B1 * !X)	0.00131	0.00132	0.00131
	(A2 * !B1 * !X)	-0.00177	-0.00183	-0.00182
	(A2 * !A3 * !A4 * B1 * X)	0.00131	0.00132	0.00131
	(A2 * !A3 * !A4 * B1 * X)	-0.00175	-0.00182	-0.00182
	(!A2 * A3 * A4 * B1 * X)	0.00130	0.00132	0.00131
	(!A2 * A3 * A4 * B1 * X)	-0.00163	-0.00177	-0.00176
	(!A2 * A3 * !B1 * !X)	0.00130	0.00132	0.00131
	(!A2 * A3 * !B1 * !X)	-0.00164	-0.00177	-0.00176
	(!A2 * A3 * !A4 * B1 * X)	0.00131	0.00132	0.00131
	(!A2 * A3 * !A4 * B1 * X)	-0.00164	-0.00177	-0.00176
	(!A2 * !A3 * A4 * B1 * X)	0.00131	0.00132	0.00131
	(!A2 * !A3 * A4 * B1 * X)	-0.00161	-0.00174	-0.00173
	(!A2 * !A3 * A4 * !B1 * !X)	0.00131	0.00132	0.00131
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00161	-0.00173	-0.00173
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00184	-0.00184	-0.00184

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00150	0.00151	0.00149
	(A2 * A4 * B1 * X)	-0.00174	-0.00179	-0.00178
	(A2 * A3 * !A4 * B1 * X)	0.00150	0.00151	0.00149
	(A2 * A3 * !A4 * B1 * X)	-0.00174	-0.00179	-0.00178
	(A2 * !B1 * !X)	0.00150	0.00151	0.00149
	(A2 * !B1 * !X)	-0.00174	-0.00179	-0.00178
	(A2 * !A3 * !A4 * B1 * X)	0.00150	0.00151	0.00149
	(A2 * !A3 * !A4 * B1 * X)	-0.00171	-0.00179	-0.00178
	(!A2 * A3 * A4 * B1 * X)	0.00149	0.00151	0.00149
	(!A2 * A3 * A4 * B1 * X)	-0.00160	-0.00173	-0.00172
	(!A2 * A3 * !B1 * !X)	0.00149	0.00151	0.00149
	(!A2 * A3 * !B1 * !X)	-0.00160	-0.00173	-0.00172
	(!A2 * A3 * !A4 * B1 * X)	0.00149	0.00151	0.00149
	(!A2 * A3 * !A4 * B1 * X)	-0.00160	-0.00173	-0.00172
	(!A2 * !A3 * A4 * B1 * X)	0.00150	0.00151	0.00149
	(!A2 * !A3 * A4 * B1 * X)	-0.00158	-0.00170	-0.00170
	(!A2 * !A3 * A4 * !B1 * !X)	0.00149	0.00151	0.00149
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00158	-0.00170	-0.00169
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00139	0.00141	0.00140
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00179	-0.00181	-0.00180

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00243	0.00244	0.00241
	(A2 * A4 * B1 * X)	-0.00344	-0.00355	-0.00355
	(A2 * A3 * !A4 * B1 * X)	0.00243	0.00244	0.00241
	(A2 * A3 * !A4 * B1 * X)	-0.00344	-0.00354	-0.00355
	(A2 * !B1 * !X)	0.00242	0.00244	0.00241
	(A2 * !B1 * !X)	-0.00346	-0.00355	-0.00355
	(A2 * !A3 * !A4 * B1 * X)	0.00244	0.00244	0.00241
	(A2 * !A3 * !A4 * B1 * X)	-0.00337	-0.00356	-0.00355
	(!A2 * A3 * A4 * B1 * X)	0.00243	0.00244	0.00241
	(!A2 * A3 * A4 * B1 * X)	-0.00314	-0.00344	-0.00341
	(!A2 * A3 * !B1 * !X)	0.00242	0.00244	0.00241
	(!A2 * A3 * !B1 * !X)	-0.00316	-0.00344	-0.00342
	(!A2 * A3 * !A4 * B1 * X)	0.00243	0.00244	0.00241
	(!A2 * A3 * !A4 * B1 * X)	-0.00314	-0.00344	-0.00342
	(!A2 * !A3 * A4 * B1 * X)	0.00244	0.00244	0.00241
	(!A2 * !A3 * A4 * B1 * X)	-0.00308	-0.00336	-0.00335
	(!A2 * !A3 * A4 * !B1 * !X)	0.00241	0.00243	0.00241
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00310	-0.00336	-0.00335
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00225	0.00226	0.00226
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00361	-0.00362	-0.00362

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)**	-0.00130	-0.00131	-0.00130
	(A2 * A4 * B1 * X)	0.00182	0.00183	0.00182
	(A2 * A3 * !A4 * B1 * X)	-0.00130	-0.00131	-0.00130
	(A2 * A3 * !A4 * B1 * X)	0.00182	0.00183	0.00182
	(A2 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(A2 * !B1 * !X)	0.00182	0.00183	0.00182
	(A2 * !A3 * !A4 * B1 * X)	-0.00130	-0.00130	-0.00130
	(A2 * !A3 * !A4 * B1 * X)	0.00182	0.00183	0.00182
	(!A2 * A3 * A4 * B1 * X)	-0.00130	-0.00131	-0.00130
	(!A2 * A3 * A4 * B1 * X)	0.00175	0.00177	0.00176
	(!A2 * A3 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(!A2 * A3 * !B1 * !X)	0.00175	0.00177	0.00176
	(!A2 * A3 * !A4 * B1 * X)	-0.00130	-0.00131	-0.00130
	(!A2 * A3 * !A4 * B1 * X)	0.00175	0.00177	0.00176
	(!A2 * !A3 * A4 * B1 * X)	-0.00130	-0.00130	-0.00130
	(!A2 * !A3 * A4 * B1 * X)	0.00172	0.00174	0.00173
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(!A2 * !A3 * A4 * !B1 * !X)	0.00172	0.00173	0.00173
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00116	-0.00124	-0.00123
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00185	0.00186	0.00184

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00149	-0.00149	-0.00149
	(A2 * A4 * B1 * X)	0.00178	0.00179	0.00178
	(A2 * A3 * !A4 * B1 * X)	-0.00149	-0.00149	-0.00149
	(A2 * A3 * !A4 * B1 * X)	0.00178	0.00179	0.00178
	(A2 * !B1 * !X)	-0.00149	-0.00149	-0.00149
	(A2 * !B1 * !X)	0.00178	0.00179	0.00178
	(A2 * !A3 * !A4 * B1 * X)	-0.00149	-0.00149	-0.00149
	(A2 * !A3 * !A4 * B1 * X)	0.00179	0.00179	0.00178
	(!A2 * A3 * A4 * B1 * X)	-0.00148	-0.00149	-0.00149
	(!A2 * A3 * A4 * B1 * X)	0.00171	0.00173	0.00172
	(!A2 * A3 * !B1 * !X)	-0.00148	-0.00150	-0.00149
	(!A2 * A3 * !B1 * !X)	0.00171	0.00173	0.00172
	(!A2 * A3 * !A4 * B1 * X)	-0.00148	-0.00149	-0.00149
	(!A2 * A3 * !A4 * B1 * X)	0.00171	0.00173	0.00172
	(!A2 * !A3 * A4 * B1 * X)	-0.00148	-0.00149	-0.00149
	(!A2 * !A3 * A4 * B1 * X)	0.00169	0.00170	0.00170
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00149	-0.00149	-0.00149
	(!A2 * !A3 * A4 * !B1 * !X)	0.00169	0.00170	0.00169
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00131	-0.00141	-0.00140
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00181	0.00183	0.00181

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00240	-0.00239	-0.00240
	(A2 * A4 * B1 * X)	0.00355	0.00355	0.00355
	(A2 * A3 * !A4 * B1 * X)	-0.00240	-0.00239	-0.00240
	(A2 * A3 * !A4 * B1 * X)	0.00355	0.00354	0.00355
	(A2 * !B1 * !X)	-0.00240	-0.00240	-0.00240
	(A2 * !B1 * !X)	0.00355	0.00355	0.00355
	(A2 * !A3 * !A4 * B1 * X)	-0.00240	-0.00241	-0.00240
	(A2 * !A3 * !A4 * B1 * X)	0.00354	0.00358	0.00355
	(!A2 * A3 * A4 * B1 * X)	-0.00240	-0.00241	-0.00240
	(!A2 * A3 * A4 * B1 * X)	0.00342	0.00344	0.00341
	(!A2 * A3 * !B1 * !X)	-0.00240	-0.00241	-0.00240
	(!A2 * A3 * !B1 * !X)	0.00342	0.00344	0.00342
	(!A2 * A3 * !A4 * B1 * X)	-0.00240	-0.00241	-0.00240
	(!A2 * A3 * !A4 * B1 * X)	0.00342	0.00344	0.00342
	(!A2 * !A3 * A4 * B1 * X)	-0.00239	-0.00240	-0.00239
	(!A2 * !A3 * A4 * B1 * X)	0.00334	0.00336	0.00335
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00240	-0.00240	-0.00240
	(!A2 * !A3 * A4 * !B1 * !X)	0.00335	0.00336	0.00335
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00210	-0.00226	-0.00226
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00364	0.00367	0.00363

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)**	0.00126	0.00128	0.00126
	(A1 * A3 * A4 * B1 * X)	-0.00127	-0.00127	-0.00127
	(A1 * A3 * !B1 * !X)	0.00126	0.00128	0.00126
	(A1 * A3 * !B1 * !X)	-0.00129	-0.00129	-0.00129
	(A1 * A3 * !A4 * B1 * X)	0.00131	0.00134	0.00127
	(A1 * A3 * !A4 * B1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A3 * A4 * B1 * X)	0.00126	0.00127	0.00126
	(A1 * !A3 * A4 * B1 * X)	-0.00119	-0.00119	-0.00118
	(A1 * !A3 * A4 * !B1 * !X)	0.00126	0.00129	0.00126
	(A1 * !A3 * A4 * !B1 * !X)	-0.00127	-0.00127	-0.00126
	(A1 * !A3 * !A4 * B1 * X)	0.00126	0.00128	0.00126
	(A1 * !A3 * !A4 * B1 * X)	-0.00100	-0.00102	-0.00101
	(A1 * !A3 * !A4 * !B1 * !X)	0.00125	0.00127	0.00126
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00173	-0.00177	-0.00176
	(!A1 * A3 * A4 * B1 * X)	0.00127	0.00126	0.00126
	(!A1 * A3 * A4 * B1 * X)	-0.00173	-0.00177	-0.00178
	(!A1 * A3 * !B1 * !X)	0.00127	0.00126	0.00126
	(!A1 * A3 * !B1 * !X)	-0.00173	-0.00178	-0.00177
	(!A1 * A3 * !A4 * B1 * X)	0.00137	0.00126	0.00126
	(!A1 * A3 * !A4 * B1 * X)	-0.00162	-0.00177	-0.00178
	(!A1 * !A3 * A4 * B1 * X)	0.00131	0.00128	0.00126
	(!A1 * !A3 * A4 * B1 * X)	-0.00152	-0.00171	-0.00170
	(!A1 * !A3 * A4 * !B1 * !X)	0.00126	0.00128	0.00126
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00156	-0.00171	-0.00170
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00118	0.00120	0.00119
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00179	-0.00181	-0.00180

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00144	0.00145	0.00144
	(A1 * A3 * A4 * B1 * X)	-0.00124	-0.00124	-0.00124
	(A1 * A3 * !B1 * !X)	0.00143	0.00145	0.00143
	(A1 * A3 * !B1 * !X)	-0.00126	-0.00127	-0.00126
	(A1 * A3 * !A4 * B1 * X)	0.00150	0.00152	0.00145
	(A1 * A3 * !A4 * B1 * X)	-0.00118	-0.00119	-0.00118
	(A1 * !A3 * A4 * B1 * X)	0.00143	0.00144	0.00143
	(A1 * !A3 * A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(A1 * !A3 * A4 * !B1 * !X)	0.00143	0.00143	0.00143
	(A1 * !A3 * A4 * !B1 * !X)	-0.00125	-0.00127	-0.00125
	(A1 * !A3 * !A4 * B1 * X)	0.00143	0.00146	0.00143
	(A1 * !A3 * !A4 * B1 * X)	-0.00100	-0.00102	-0.00100
	(A1 * !A3 * !A4 * !B1 * !X)	0.00143	0.00143	0.00144
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00174	-0.00177	-0.00177
	(!A1 * A3 * A4 * B1 * X)	0.00143	0.00143	0.00143
	(!A1 * A3 * A4 * B1 * X)	-0.00171	-0.00177	-0.00177
	(!A1 * A3 * !B1 * !X)	0.00143	0.00143	0.00143
	(!A1 * A3 * !B1 * !X)	-0.00171	-0.00177	-0.00177
	(!A1 * A3 * !A4 * B1 * X)	0.00152	0.00143	0.00143
	(!A1 * A3 * !A4 * B1 * X)	-0.00160	-0.00177	-0.00177
	(!A1 * !A3 * A4 * B1 * X)	0.00149	0.00146	0.00143
	(!A1 * !A3 * A4 * B1 * X)	-0.00151	-0.00171	-0.00170
	(!A1 * !A3 * A4 * !B1 * !X)	0.00143	0.00145	0.00143
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00155	-0.00170	-0.00169
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00135	0.00136	0.00136
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00180	-0.00180	-0.00180

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00302	0.00306	0.00303
	(A1 * A3 * A4 * B1 * X)	-0.00247	-0.00246	-0.00246
	(A1 * A3 * !B1 * !X)	0.00301	0.00302	0.00300
	(A1 * A3 * !B1 * !X)	-0.00254	-0.00255	-0.00254
	(A1 * A3 * !A4 * B1 * X)	0.00304	0.00308	0.00304
	(A1 * A3 * !A4 * B1 * X)	-0.00234	-0.00236	-0.00234
	(A1 * !A3 * A4 * B1 * X)	0.00301	0.00305	0.00302
	(A1 * !A3 * A4 * B1 * X)	-0.00229	-0.00232	-0.00229
	(A1 * !A3 * A4 * !B1 * !X)	0.00299	0.00302	0.00300
	(A1 * !A3 * A4 * !B1 * !X)	-0.00247	-0.00248	-0.00247
	(A1 * !A3 * !A4 * B1 * X)	0.00300	0.00302	0.00301
	(A1 * !A3 * !A4 * B1 * X)	-0.00193	-0.00195	-0.00194
	(A1 * !A3 * !A4 * !B1 * !X)	0.00298	0.00303	0.00299
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00342	-0.00347	-0.00348
	(!A1 * A3 * A4 * B1 * X)	0.00301	0.00304	0.00300
	(!A1 * A3 * A4 * B1 * X)	-0.00332	-0.00349	-0.00348
	(!A1 * A3 * !B1 * !X)	0.00299	0.00303	0.00299
	(!A1 * A3 * !B1 * !X)	-0.00335	-0.00350	-0.00349
	(!A1 * A3 * !A4 * B1 * X)	0.00311	0.00304	0.00300
	(!A1 * A3 * !A4 * B1 * X)	-0.00318	-0.00349	-0.00348
	(!A1 * !A3 * A4 * B1 * X)	0.00309	0.00303	0.00300
	(!A1 * !A3 * A4 * B1 * X)	-0.00298	-0.00333	-0.00333
	(!A1 * !A3 * A4 * !B1 * !X)	0.00298	0.00302	0.00299
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00306	-0.00333	-0.00333
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00285	0.00286	0.00285
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00355	-0.00356	-0.00355

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)**	-0.00125	-0.00126	-0.00125
	(A1 * A3 * A4 * B1 * X)	0.00127	0.00127	0.00127
	(A1 * A3 * !B1 * !X)	-0.00125	-0.00126	-0.00126
	(A1 * A3 * !B1 * !X)	0.00129	0.00129	0.00129
	(A1 * A3 * !A4 * B1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * A3 * !A4 * B1 * X)	0.00121	0.00122	0.00121
	(A1 * !A3 * A4 * B1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * !A3 * A4 * B1 * X)	0.00119	0.00119	0.00118
	(A1 * !A3 * A4 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(A1 * !A3 * A4 * !B1 * !X)	0.00127	0.00127	0.00126
	(A1 * !A3 * !A4 * B1 * X)	-0.00120	-0.00121	-0.00120
	(A1 * !A3 * !A4 * B1 * X)	0.00105	0.00106	0.00106
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00125	-0.00126	-0.00126
	(A1 * !A3 * !A4 * !B1 * !X)	0.00176	0.00177	0.00176
	(!A1 * A3 * A4 * B1 * X)	-0.00126	-0.00126	-0.00125
	(!A1 * A3 * A4 * B1 * X)	0.00178	0.00179	0.00178
	(!A1 * A3 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * A3 * !B1 * !X)	0.00178	0.00179	0.00177
	(!A1 * A3 * !A4 * B1 * X)	-0.00126	-0.00126	-0.00125
	(!A1 * A3 * !A4 * B1 * X)	0.00178	0.00179	0.00178
	(!A1 * !A3 * A4 * B1 * X)	-0.00125	-0.00126	-0.00125
	(!A1 * !A3 * A4 * B1 * X)	0.00170	0.00171	0.00170
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * !A3 * A4 * !B1 * !X)	0.00170	0.00171	0.00170
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00112	-0.00120	-0.00119
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00180	0.00182	0.00180

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00143	-0.00143	-0.00143
	(A1 * A3 * A4 * B1 * X)	0.00124	0.00124	0.00124
	(A1 * A3 * !B1 * !X)	-0.00143	-0.00143	-0.00143
	(A1 * A3 * !B1 * !X)	0.00126	0.00127	0.00126
	(A1 * A3 * !A4 * B1 * X)	-0.00143	-0.00143	-0.00143
	(A1 * A3 * !A4 * B1 * X)	0.00118	0.00119	0.00118
	(A1 * !A3 * A4 * B1 * X)	-0.00143	-0.00143	-0.00143
	(A1 * !A3 * A4 * B1 * X)	0.00117	0.00117	0.00117
	(A1 * !A3 * A4 * !B1 * !X)	-0.00143	-0.00143	-0.00143
	(A1 * !A3 * A4 * !B1 * !X)	0.00125	0.00127	0.00125
	(A1 * !A3 * !A4 * B1 * X)	-0.00141	-0.00141	-0.00140
	(A1 * !A3 * !A4 * B1 * X)	0.00103	0.00104	0.00104
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00143	-0.00143	-0.00143
	(A1 * !A3 * !A4 * !B1 * !X)	0.00176	0.00178	0.00177
	(!A1 * A3 * A4 * B1 * X)	-0.00143	-0.00143	-0.00143
	(!A1 * A3 * A4 * B1 * X)	0.00177	0.00178	0.00177
	(!A1 * A3 * !B1 * !X)	-0.00142	-0.00143	-0.00143
	(!A1 * A3 * !B1 * !X)	0.00176	0.00178	0.00177
	(!A1 * A3 * !A4 * B1 * X)	-0.00143	-0.00143	-0.00143
	(!A1 * A3 * !A4 * B1 * X)	0.00177	0.00178	0.00177
	(!A1 * !A3 * A4 * B1 * X)	-0.00143	-0.00143	-0.00143
	(!A1 * !A3 * A4 * B1 * X)	0.00170	0.00171	0.00170
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00143	-0.00144	-0.00143
	(!A1 * !A3 * A4 * !B1 * !X)	0.00170	0.00170	0.00169
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00126	-0.00136	-0.00136
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00181	0.00182	0.00180

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00301	-0.00300	-0.00301
	(A1 * A3 * A4 * B1 * X)	0.00247	0.00246	0.00246
	(A1 * A3 * !B1 * !X)	-0.00299	-0.00299	-0.00299
	(A1 * A3 * !B1 * !X)	0.00254	0.00255	0.00254
	(A1 * A3 * !A4 * B1 * X)	-0.00301	-0.00302	-0.00301
	(A1 * A3 * !A4 * B1 * X)	0.00234	0.00236	0.00234
	(A1 * !A3 * A4 * B1 * X)	-0.00300	-0.00301	-0.00299
	(A1 * !A3 * A4 * B1 * X)	0.00229	0.00232	0.00229
	(A1 * !A3 * A4 * !B1 * !X)	-0.00299	-0.00299	-0.00298
	(A1 * !A3 * A4 * !B1 * !X)	0.00247	0.00248	0.00247
	(A1 * !A3 * !A4 * B1 * X)	-0.00295	-0.00297	-0.00295
	(A1 * !A3 * !A4 * B1 * X)	0.00199	0.00200	0.00200
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00298	-0.00297	-0.00298
	(A1 * !A3 * !A4 * !B1 * !X)	0.00347	0.00347	0.00348
	(!A1 * A3 * A4 * B1 * X)	-0.00298	-0.00300	-0.00299
	(!A1 * A3 * A4 * B1 * X)	0.00346	0.00349	0.00348
	(!A1 * A3 * !B1 * !X)	-0.00298	-0.00299	-0.00299
	(!A1 * A3 * !B1 * !X)	0.00347	0.00350	0.00349
	(!A1 * A3 * !A4 * B1 * X)	-0.00298	-0.00300	-0.00299
	(!A1 * A3 * !A4 * B1 * X)	0.00346	0.00349	0.00348
	(!A1 * !A3 * A4 * B1 * X)	-0.00298	-0.00299	-0.00298
	(!A1 * !A3 * A4 * B1 * X)	0.00331	0.00333	0.00333
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00298	-0.00299	-0.00298
	(!A1 * !A3 * A4 * !B1 * !X)	0.00331	0.00333	0.00333
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00270	-0.00286	-0.00285
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00357	0.00359	0.00357

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)**	0.00134	0.00135	0.00128
	(A2 * A4 * B1 * X)	-0.00113	-0.00114	-0.00114
	(A2 * A4 * !B1 * !X)	0.00125	0.00127	0.00125
	(A2 * A4 * !B1 * !X)	-0.00123	-0.00123	-0.00123
	(A2 * !A4 * B1 * X)	0.00127	0.00128	0.00125
	(A2 * !A4 * B1 * X)	-0.00096	-0.00097	-0.00096
	(A2 * !A4 * !B1 * !X)	0.00126	0.00127	0.00125
	(A2 * !A4 * !B1 * !X)	-0.00169	-0.00173	-0.00172
	(A1 * !A2 * A4 * B1 * X)	0.00140	0.00129	0.00126
	(A1 * !A2 * A4 * B1 * X)	-0.00114	-0.00118	-0.00117
	(A1 * !A2 * A4 * !B1 * !X)	0.00125	0.00125	0.00125
	(A1 * !A2 * A4 * !B1 * !X)	-0.00122	-0.00124	-0.00121
	(A1 * !A2 * !A4 * B1 * X)	0.00126	0.00129	0.00126
	(A1 * !A2 * !A4 * B1 * X)	-0.00094	-0.00096	-0.00095
	(A1 * !A2 * !A4 * !B1 * !X)	0.00125	0.00125	0.00125
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00151	-0.00164	-0.00163
	(!A1 * !A2 * A4 * B1 * X)	0.00157	0.00128	0.00125
	(!A1 * !A2 * A4 * B1 * X)	-0.00139	-0.00172	-0.00174
	(!A1 * !A2 * A4 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00170	-0.00173	-0.00172
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00175	-0.00176	-0.00175

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00158	0.00160	0.00153
	(A2 * A4 * B1 * X)	-0.00115	-0.00115	-0.00115
	(A2 * A4 * !B1 * !X)	0.00145	0.00147	0.00145
	(A2 * A4 * !B1 * !X)	-0.00132	-0.00132	-0.00132
	(A2 * !A4 * B1 * X)	0.00152	0.00155	0.00151
	(A2 * !A4 * B1 * X)	-0.00097	-0.00099	-0.00098
	(A2 * !A4 * !B1 * !X)	0.00146	0.00147	0.00145
	(A2 * !A4 * !B1 * !X)	-0.00176	-0.00182	-0.00180
	(A1 * !A2 * A4 * B1 * X)	0.00165	0.00155	0.00152
	(A1 * !A2 * A4 * B1 * X)	-0.00117	-0.00119	-0.00118
	(A1 * !A2 * A4 * !B1 * !X)	0.00145	0.00148	0.00145
	(A1 * !A2 * A4 * !B1 * !X)	-0.00129	-0.00131	-0.00129
	(A1 * !A2 * !A4 * B1 * X)	0.00153	0.00155	0.00152
	(A1 * !A2 * !A4 * B1 * X)	-0.00096	-0.00098	-0.00097
	(A1 * !A2 * !A4 * !B1 * !X)	0.00145	0.00145	0.00145
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00159	-0.00173	-0.00171
	(!A1 * !A2 * A4 * B1 * X)	0.00183	0.00154	0.00151
	(!A1 * !A2 * A4 * B1 * X)	-0.00140	-0.00174	-0.00175
	(!A1 * !A2 * A4 * !B1 * !X)	0.00144	0.00146	0.00145
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00177	-0.00182	-0.00180
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00136	0.00136	0.00136
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00183	-0.00183	-0.00183

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00312	0.00310	0.00302
	(A2 * A4 * B1 * X)	-0.00229	-0.00233	-0.00231
	(A2 * A4 * !B1 * !X)	0.00296	0.00297	0.00295
	(A2 * A4 * !B1 * !X)	-0.00254	-0.00255	-0.00254
	(A2 * !A4 * B1 * X)	0.00298	0.00301	0.00298
	(A2 * !A4 * B1 * X)	-0.00189	-0.00191	-0.00190
	(A2 * !A4 * !B1 * !X)	0.00293	0.00298	0.00294
	(A2 * !A4 * !B1 * !X)	-0.00333	-0.00347	-0.00345
	(A1 * !A2 * A4 * B1 * X)	0.00324	0.00305	0.00299
	(A1 * !A2 * A4 * B1 * X)	-0.00231	-0.00236	-0.00235
	(A1 * !A2 * A4 * !B1 * !X)	0.00294	0.00297	0.00295
	(A1 * !A2 * A4 * !B1 * !X)	-0.00247	-0.00248	-0.00247
	(A1 * !A2 * !A4 * B1 * X)	0.00299	0.00302	0.00299
	(A1 * !A2 * !A4 * B1 * X)	-0.00187	-0.00190	-0.00190
	(A1 * !A2 * !A4 * !B1 * !X)	0.00293	0.00297	0.00294
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00305	-0.00327	-0.00326
	(!A1 * !A2 * A4 * B1 * X)	0.00358	0.00299	0.00297
	(!A1 * !A2 * A4 * B1 * X)	-0.00280	-0.00344	-0.00348
	(!A1 * !A2 * A4 * !B1 * !X)	0.00294	0.00294	0.00294
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00342	-0.00349	-0.00348
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00279	0.00281	0.00279
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00354	-0.00356	-0.00354

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)**	-0.00124	-0.00125	-0.00125
	(A2 * A4 * B1 * X)	0.00113	0.00114	0.00114
	(A2 * A4 * !B1 * !X)	-0.00124	-0.00125	-0.00125
	(A2 * A4 * !B1 * !X)	0.00123	0.00123	0.00123
	(A2 * !A4 * B1 * X)	-0.00124	-0.00124	-0.00123
	(A2 * !A4 * B1 * X)	0.00099	0.00099	0.00099
	(A2 * !A4 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(A2 * !A4 * !B1 * !X)	0.00173	0.00173	0.00172
	(A1 * !A2 * A4 * B1 * X)	-0.00125	-0.00125	-0.00124
	(A1 * !A2 * A4 * B1 * X)	0.00118	0.00118	0.00117
	(A1 * !A2 * A4 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * A4 * !B1 * !X)	0.00122	0.00124	0.00121
	(A1 * !A2 * !A4 * B1 * X)	-0.00118	-0.00119	-0.00123
	(A1 * !A2 * !A4 * B1 * X)	0.00100	0.00101	0.00098
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * !A4 * !B1 * !X)	0.00163	0.00164	0.00163
	(!A1 * !A2 * A4 * B1 * X)	-0.00124	-0.00124	-0.00124
	(!A1 * !A2 * A4 * B1 * X)	0.00172	0.00174	0.00174
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00124	-0.00125	-0.00125
	(!A1 * !A2 * A4 * !B1 * !X)	0.00172	0.00173	0.00172
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00111	-0.00119	-0.00118
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00176	0.00177	0.00176

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00150	-0.00150	-0.00151
	(A2 * A4 * B1 * X)	0.00115	0.00115	0.00115
	(A2 * A4 * !B1 * !X)	-0.00144	-0.00145	-0.00145
	(A2 * A4 * !B1 * !X)	0.00132	0.00132	0.00132
	(A2 * !A4 * B1 * X)	-0.00150	-0.00151	-0.00149
	(A2 * !A4 * B1 * X)	0.00100	0.00101	0.00101
	(A2 * !A4 * !B1 * !X)	-0.00144	-0.00146	-0.00145
	(A2 * !A4 * !B1 * !X)	0.00179	0.00182	0.00180
	(A1 * !A2 * A4 * B1 * X)	-0.00151	-0.00151	-0.00151
	(A1 * !A2 * A4 * B1 * X)	0.00119	0.00119	0.00118
	(A1 * !A2 * A4 * !B1 * !X)	-0.00144	-0.00146	-0.00145
	(A1 * !A2 * A4 * !B1 * !X)	0.00129	0.00131	0.00129
	(A1 * !A2 * !A4 * B1 * X)	-0.00146	-0.00147	-0.00149
	(A1 * !A2 * !A4 * B1 * X)	0.00100	0.00101	0.00099
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00145	-0.00145	-0.00145
	(A1 * !A2 * !A4 * !B1 * !X)	0.00172	0.00173	0.00171
	(!A1 * !A2 * A4 * B1 * X)	-0.00150	-0.00151	-0.00150
	(!A1 * !A2 * A4 * B1 * X)	0.00174	0.00176	0.00175
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00144	-0.00145	-0.00145
	(!A1 * !A2 * A4 * !B1 * !X)	0.00180	0.00182	0.00180
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00127	-0.00136	-0.00136
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00184	0.00185	0.00184

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00297	-0.00300	-0.00298
	(A2 * A4 * B1 * X)	0.00229	0.00233	0.00231
	(A2 * A4 * !B1 * !X)	-0.00294	-0.00295	-0.00294
	(A2 * A4 * !B1 * !X)	0.00254	0.00255	0.00254
	(A2 * !A4 * B1 * X)	-0.00293	-0.00295	-0.00292
	(A2 * !A4 * B1 * X)	0.00196	0.00198	0.00198
	(A2 * !A4 * !B1 * !X)	-0.00293	-0.00295	-0.00294
	(A2 * !A4 * !B1 * !X)	0.00344	0.00347	0.00345
	(A1 * !A2 * A4 * B1 * X)	-0.00297	-0.00298	-0.00297
	(A1 * !A2 * A4 * B1 * X)	0.00235	0.00236	0.00235
	(A1 * !A2 * A4 * !B1 * !X)	-0.00294	-0.00294	-0.00294
	(A1 * !A2 * A4 * !B1 * !X)	0.00247	0.00248	0.00247
	(A1 * !A2 * !A4 * B1 * X)	-0.00282	-0.00284	-0.00292
	(A1 * !A2 * !A4 * B1 * X)	0.00200	0.00201	0.00195
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00293	-0.00295	-0.00294
	(A1 * !A2 * !A4 * !B1 * !X)	0.00325	0.00327	0.00326
	(!A1 * !A2 * A4 * B1 * X)	-0.00294	-0.00296	-0.00293
	(!A1 * !A2 * A4 * B1 * X)	0.00346	0.00350	0.00349
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00293	-0.00294	-0.00293
	(!A1 * !A2 * A4 * !B1 * !X)	0.00347	0.00349	0.00348
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00264	-0.00281	-0.00279
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00356	0.00357	0.00355

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00143	0.00146	0.00144
	(A3 * B1 * X)	-0.00085	-0.00087	-0.00086
	(A3 * !B1 * !X)	0.00127	0.00128	0.00127
	(A3 * !B1 * !X)	-0.00171	-0.00176	-0.00176
	(A2 * !A3 * B1 * X)	0.00143	0.00146	0.00144
	(A2 * !A3 * B1 * X)	-0.00085	-0.00087	-0.00085
	(A2 * !A3 * !B1 * !X)	0.00127	0.00129	0.00127
	(A2 * !A3 * !B1 * !X)	-0.00156	-0.00169	-0.00168
	(A1 * !A2 * !A3 * B1 * X)	0.00143	0.00146	0.00144
	(A1 * !A2 * !A3 * B1 * X)	-0.00085	-0.00087	-0.00085
	(A1 * !A2 * !A3 * !B1 * !X)	0.00127	0.00129	0.00127
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00153	-0.00164	-0.00163
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00179	-0.00179	-0.00178
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00159	0.00162	0.00160
	(A3 * B1 * X)	-0.00086	-0.00088	-0.00086
	(A3 * !B1 * !X)	0.00144	0.00145	0.00145
	(A3 * !B1 * !X)	-0.00170	-0.00176	-0.00175
	(A2 * !A3 * B1 * X)	0.00159	0.00162	0.00160
	(A2 * !A3 * B1 * X)	-0.00086	-0.00088	-0.00086
	(A2 * !A3 * !B1 * !X)	0.00144	0.00146	0.00145
	(A2 * !A3 * !B1 * !X)	-0.00156	-0.00168	-0.00167
	(A1 * !A2 * !A3 * B1 * X)	0.00159	0.00162	0.00160
	(A1 * !A2 * !A3 * B1 * X)	-0.00086	-0.00088	-0.00086
	(A1 * !A2 * !A3 * !B1 * !X)	0.00144	0.00146	0.00145
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00153	-0.00164	-0.00163
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00136	0.00136	0.00136
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00178	-0.00178	-0.00177

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00271	0.00276	0.00271
	(A3 * B1 * X)	-0.00174	-0.00177	-0.00174
	(A3 * !B1 * !X)	0.00242	0.00244	0.00242
	(A3 * !B1 * !X)	-0.00342	-0.00353	-0.00351
	(A2 * !A3 * B1 * X)	0.00271	0.00276	0.00271
	(A2 * !A3 * B1 * X)	-0.00173	-0.00176	-0.00173
	(A2 * !A3 * !B1 * !X)	0.00241	0.00245	0.00242
	(A2 * !A3 * !B1 * !X)	-0.00309	-0.00334	-0.00332
	(A1 * !A2 * !A3 * B1 * X)	0.00271	0.00276	0.00271
	(A1 * !A2 * !A3 * B1 * X)	-0.00173	-0.00176	-0.00173
	(A1 * !A2 * !A3 * !B1 * !X)	0.00241	0.00245	0.00241
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00303	-0.00324	-0.00323
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00226	0.00227	0.00226
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00358	-0.00359	-0.00358

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00137	-0.00139	-0.00142
	(A3 * B1 * X)	0.00091	0.00091	0.00088
	(A3 * !B1 * !X)	-0.00126	-0.00127	-0.00127
	(A3 * !B1 * !X)	0.00175	0.00176	0.00176
	(A2 * !A3 * B1 * X)	-0.00130	-0.00131	-0.00141
	(A2 * !A3 * B1 * X)	0.00096	0.00096	0.00088
	(A2 * !A3 * !B1 * !X)	-0.00127	-0.00128	-0.00127
	(A2 * !A3 * !B1 * !X)	0.00168	0.00169	0.00168
	(A1 * !A2 * !A3 * B1 * X)	-0.00119	-0.00120	-0.00138
	(A1 * !A2 * !A3 * B1 * X)	0.00102	0.00103	0.00089
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00126	-0.00127	-0.00127
	(A1 * !A2 * !A3 * !B1 * !X)	0.00162	0.00164	0.00163
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00112	-0.00121	-0.00120
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00179	0.00180	0.00179
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00153	-0.00154	-0.00159
	(A3 * B1 * X)	0.00093	0.00093	0.00088
	(A3 * !B1 * !X)	-0.00144	-0.00145	-0.00144
	(A3 * !B1 * !X)	0.00174	0.00176	0.00175
	(A2 * !A3 * B1 * X)	-0.00145	-0.00146	-0.00157
	(A2 * !A3 * B1 * X)	0.00097	0.00097	0.00088
	(A2 * !A3 * !B1 * !X)	-0.00144	-0.00145	-0.00144
	(A2 * !A3 * !B1 * !X)	0.00168	0.00168	0.00167
	(A1 * !A2 * !A3 * B1 * X)	-0.00135	-0.00136	-0.00155
	(A1 * !A2 * !A3 * B1 * X)	0.00103	0.00103	0.00090
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00144	-0.00145	-0.00144
	(A1 * !A2 * !A3 * !B1 * !X)	0.00163	0.00164	0.00163
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00127	-0.00136	-0.00136
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00178	0.00179	0.00178

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00257	-0.00259	-0.00269
	(A3 * B1 * X)	0.00187	0.00188	0.00178
	(A3 * !B1 * !X)	-0.00241	-0.00243	-0.00241
	(A3 * !B1 * !X)	0.00352	0.00353	0.00351
	(A2 * !A3 * B1 * X)	-0.00237	-0.00239	-0.00265
	(A2 * !A3 * B1 * X)	0.00198	0.00199	0.00179
	(A2 * !A3 * !B1 * !X)	-0.00241	-0.00242	-0.00241
	(A2 * !A3 * !B1 * !X)	0.00333	0.00334	0.00332
	(A1 * !A2 * !A3 * B1 * X)	-0.00215	-0.00218	-0.00259
	(A1 * !A2 * !A3 * B1 * X)	0.00211	0.00211	0.00182
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00240	-0.00242	-0.00241
	(A1 * !A2 * !A3 * !B1 * !X)	0.00322	0.00324	0.00323
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00210	-0.00227	-0.00226
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00359	0.00362	0.00359

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)**	0.00050	0.00050	0.00045
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00172	-0.00172	-0.00181
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00055	0.00055	0.00050
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00197	-0.00198	-0.00207
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00093	0.00092	0.00083
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00326	-0.00328	-0.00344

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)	-0.00043	-0.00044	-0.00043
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00182	0.00185	0.00182
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00048	-0.00049	-0.00048
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00208	0.00212	0.00209
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00081	-0.00081	-0.00079
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00347	0.00351	0.00346

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00250	0.00234	1.07911
sky130_fd_sc_hs__or2b_2	0.00260	0.00226	1.81378
sky130_fd_sc_hs__or2b_4	0.00494	0.00281	3.95450

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.21524	0.35299
sky130_fd_sc_hs__or2b_2	0.00000	0.23554	0.41565
sky130_fd_sc_hs__or2b_4	0.00000	0.24609	0.37996

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)	0.06455	0.58326	6.26561
	B_N->X (FR)	0.11714	0.76467	8.12182
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.06368	0.49822	5.97007
	B_N->X (FR)	0.12753	0.69284	7.96941
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.05885	0.40504	6.15070
	B_N->X (FR)	0.13356	0.64321	8.27476

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.12189	0.56026	4.59684
	B_N->X (RF)	0.12734	0.38140	2.37839
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.16130	0.58790	4.42146
	B_N->X (RF)	0.17315	0.39397	1.99957
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.15839	0.55601	4.74023
	B_N->X (RF)	0.16454	0.37845	2.27875

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00719	0.00731	0.01767
	A	0.00368	0.00381	0.01441
	B_N	0.00644	0.00795	0.03317
	B_N	0.00944	0.01095	0.03627
sky130_fd_sc_hs__or2b_2	A	0.01001	0.01064	0.02138
	A	0.00628	0.00695	0.01834
	B_N	0.00923	0.01097	0.03439
	B_N	0.01220	0.01398	0.03767
sky130_fd_sc_hs__or2b_4	A	0.01911	0.02051	0.04842
	A	0.01219	0.01362	0.04278
	B_N	0.01742	0.01964	0.04680
	B_N	0.02075	0.02297	0.05025

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00410	0.00425	0.01452
	A	0.00762	0.00776	0.01761
	B_N	0.00936	0.01018	0.03528
	B_N	0.00637	0.00715	0.03205
sky130_fd_sc_hs__or2b_2	A	0.00653	0.00677	0.01779
	A	0.01025	0.01049	0.02129
	B_N	0.01253	0.01297	0.03474
	B_N	0.00955	0.01000	0.03165
sky130_fd_sc_hs__or2b_4	A	0.01309	0.01384	0.04004
	A	0.02004	0.02076	0.04551
	B_N	0.02082	0.02227	0.04937
	B_N	0.01749	0.01888	0.04558

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00151	0.00131	0.00128
	(!B_N * X)	-0.00149	-0.00172	-0.00173
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00162	0.00142	0.00138
	(!B_N * X)	-0.00157	-0.00181	-0.00182
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00313	0.00272	0.00266
	(!B_N * X)	-0.00285	-0.00333	-0.00334

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00127	-0.00127	-0.00126
	(!B_N * X)	0.00173	0.00174	0.00174
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00137	-0.00138	-0.00136
	(!B_N * X)	0.00183	0.00184	0.00183
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00264	-0.00266	-0.00264
	(!B_N * X)	0.00333	0.00338	0.00336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00407	0.00473	0.02890
	(A * X)	0.00061	0.00127	0.02544
sky130_fd_sc_hs__or2b_2	(A * X)	0.00431	0.00492	0.02855
	(A * X)	0.00086	0.00145	0.02510
sky130_fd_sc_hs__or2b_4	(A * X)	0.00553	0.00602	0.03055
	(A * X)	0.00147	0.00196	0.02648

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00114	0.00250	0.02697
	(A * X)	0.00458	0.00596	0.03042
sky130_fd_sc_hs__or2b_2	(A * X)	0.00113	0.00244	0.02648
	(A * X)	0.00458	0.00591	0.02993
sky130_fd_sc_hs__or2b_4	(A * X)	0.00305	0.00414	0.02897
	(A * X)	0.00709	0.00820	0.03301

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00228	0.00218	1.07432
sky130_fd_sc_hs__or2_2	0.00281	0.00247	1.84973
sky130_fd_sc_hs__or2_4	0.00448	0.00389	3.93855

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.11744	0.29919
sky130_fd_sc_hs__or2_2	0.00000	0.08727	0.14705
sky130_fd_sc_hs__or2_4	0.00000	0.16919	0.29410

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)	0.06200	0.57527	6.21171
	B->X (RR)	0.05771	0.55903	6.24002
sky130_fd_sc_hs__or2_2	A->X (RR)	0.06480	0.50223	6.07063
	B->X (RR)	0.05953	0.48575	6.03956
sky130_fd_sc_hs__or2_4	A->X (RR)	0.08394	0.48654	6.65840
	B->X (RR)	0.07121	0.45318	6.60368

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.13070	0.57154	4.60347
	B->X (FF)	0.11352	0.55703	4.62333
sky130_fd_sc_hs__or2_2	A->X (FF)	0.15935	0.58657	4.44404
	B->X (FF)	0.13879	0.57665	4.46535
sky130_fd_sc_hs__or2_4	A->X (FF)	0.14661	0.54437	4.53836
	B->X (FF)	0.12593	0.52722	4.51646

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00768	0.00787	0.01876
	A	0.00364	0.00384	0.01502
	B	0.00646	0.00703	0.02423
	B	0.00311	0.00369	0.02118
sky130_fd_sc_hs__or2_2	A	0.01102	0.01143	0.02183
	A	0.00617	0.00660	0.01763
	B	0.00934	0.01013	0.02414
	B	0.00547	0.00628	0.02095
sky130_fd_sc_hs__or2_4	A	0.01992	0.02056	0.03992
	A	0.01199	0.01271	0.03218
	B	0.01597	0.01728	0.04573
	B	0.01015	0.01155	0.04015

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00306	0.00332	0.01428
	A	0.00710	0.00735	0.01789
	B	0.00287	0.00403	0.02391
	B	0.00622	0.00737	0.02686
sky130_fd_sc_hs__or2_2	A	0.00513	0.00526	0.01662
	A	0.01000	0.01012	0.02042
	B	0.00504	0.00614	0.02555
	B	0.00891	0.00995	0.02832
sky130_fd_sc_hs__or2_4	A	0.01127	0.01228	0.03067
	A	0.01926	0.01992	0.03715
	B	0.01127	0.01399	0.04531
	B	0.01707	0.01914	0.05080

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00149	0.00131	0.00126
	(B * X)	-0.00108	-0.00129	-0.00131
sky130_fd_sc_hs__or2_2	(B * X)	0.00180	0.00159	0.00155
	(B * X)	-0.00129	-0.00154	-0.00155
sky130_fd_sc_hs__or2_4	(B * X)	0.00237	0.00193	0.00186
	(B * X)	-0.00265	-0.00316	-0.00320

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00125	-0.00126	-0.00125
	(B * X)	0.00131	0.00133	0.00132
sky130_fd_sc_hs__or2_2	(B * X)	-0.00154	-0.00154	-0.00153
	(B * X)	0.00156	0.00156	0.00156
sky130_fd_sc_hs__or2_4	(B * X)	-0.00185	-0.00186	-0.00184
	(B * X)	0.00319	0.00322	0.00320

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00135	0.00137	0.00135
	(A * X)	-0.00064	-0.00064	-0.00064
sky130_fd_sc_hs__or2_2	(A * X)	0.00145	0.00148	0.00146
	(A * X)	-0.00078	-0.00080	-0.00078
sky130_fd_sc_hs__or2_4	(A * X)	0.00170	0.00173	0.00170
	(A * X)	-0.00158	-0.00160	-0.00158

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00131	-0.00132	-0.00135
	(A * X)	0.00067	0.00068	0.00065
sky130_fd_sc_hs__or2_2	(A * X)	-0.00141	-0.00142	-0.00145
	(A * X)	0.00083	0.00083	0.00080
sky130_fd_sc_hs__or2_4	(A * X)	-0.00157	-0.00159	-0.00169
	(A * X)	0.00169	0.00170	0.00161

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00245	0.00268	0.00227	1.07928
sky130_fd_sc_hs__or3b_2	0.00261	0.00253	0.00226	1.83816
sky130_fd_sc_hs__or3b_4	0.00461	0.00421	0.00263	3.93358

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.19177	0.35654
sky130_fd_sc_hs__or3b_2	0.00000	0.20564	0.42409
sky130_fd_sc_hs__or3b_4	0.00000	0.18226	0.36477

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)	0.07087	0.61311	6.33642
	B->X (RR)	0.06925	0.59995	6.26434
	C_N->X (FR)	0.12057	0.77003	8.15258
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.06895	0.52261	6.08365
	B->X (RR)	0.06708	0.51152	6.01855
	C_N->X (FR)	0.12858	0.69653	8.03144
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.08971	0.50771	6.65038
	B->X (RR)	0.08491	0.48910	6.56007
	C_N->X (FR)	0.14746	0.65406	8.31501

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.20062	0.65946	4.76723
	B->X (FF)	0.18840	0.66462	4.92319
	C_N->X (RF)	0.17991	0.45334	2.45477
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.25746	0.70066	4.68541
	B->X (FF)	0.23962	0.70591	4.86488
	C_N->X (RF)	0.23365	0.48623	2.20746
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.22519	0.63065	4.67687
	B->X (FF)	0.20778	0.63181	4.82841
	C_N->X (RF)	0.20047	0.42282	2.35280

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00886	0.00888	0.01814
	A	0.00442	0.00443	0.01389
	B	0.00763	0.00789	0.01763
	B	0.00371	0.00398	0.01397
	C_N	0.00665	0.00823	0.03333
	C_N	0.00920	0.01077	0.03596
sky130_fd_sc_hs__or3b_2	A	0.01171	0.01197	0.02157
	A	0.00712	0.00742	0.01766
	B	0.01021	0.01095	0.02071
	B	0.00641	0.00718	0.01758
	C_N	0.00922	0.01106	0.03422
	C_N	0.01196	0.01384	0.03722
sky130_fd_sc_hs__or3b_4	A	0.02170	0.02220	0.03973
	A	0.01370	0.01420	0.03206
	B	0.01831	0.01933	0.03773
	B	0.01212	0.01323	0.03193
	C_N	0.01592	0.01849	0.04439
	C_N	0.01904	0.02159	0.04751

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00486	0.00482	0.01349
	A	0.00933	0.00930	0.01787
	B	0.00470	0.00480	0.01529
	B	0.00861	0.00872	0.01868
	C_N	0.01011	0.01091	0.03566
	C_N	0.00755	0.00827	0.03290
sky130_fd_sc_hs__or3b_2	A	0.00726	0.00686	0.01606
	A	0.01188	0.01150	0.02035
	B	0.00711	0.00692	0.01762
	B	0.01093	0.01079	0.02086
	C_N	0.01311	0.01341	0.03520
	C_N	0.01037	0.01060	0.03224
sky130_fd_sc_hs__or3b_4	A	0.01377	0.01381	0.02906
	A	0.02187	0.02188	0.03659
	B	0.01376	0.01408	0.03333
	B	0.01995	0.02025	0.03758
	C_N	0.02107	0.02199	0.04820
	C_N	0.01795	0.01875	0.04467

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)	0.00131	0.00123	0.00122
	(B * C_N * X)	-0.00147	-0.00159	-0.00159
	(B * !C_N * X)	0.00122	0.00123	0.00122
	(B * !C_N * X)	-0.00156	-0.00159	-0.00158
	(!B * !C_N * X)	0.00127	0.00123	0.00122
	(!B * !C_N * X)	-0.00141	-0.00155	-0.00154
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00151	0.00144	0.00142
	(B * C_N * X)	-0.00148	-0.00160	-0.00160
	(B * !C_N * X)	0.00136	0.00138	0.00137
	(B * !C_N * X)	-0.00162	-0.00166	-0.00165
	(!B * !C_N * X)	0.00141	0.00138	0.00137
	(!B * !C_N * X)	-0.00147	-0.00161	-0.00161
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00223	0.00210	0.00207
	(B * C_N * X)	-0.00293	-0.00316	-0.00314
	(B * !C_N * X)	0.00186	0.00187	0.00185
	(B * !C_N * X)	-0.00328	-0.00337	-0.00336
	(!B * !C_N * X)	0.00194	0.00187	0.00185
	(!B * !C_N * X)	-0.00301	-0.00330	-0.00328

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)	-0.00121	-0.00121	-0.00121
	(B * C_N * X)	0.00158	0.00159	0.00159
	(B * !C_N * X)	-0.00121	-0.00122	-0.00121
	(B * !C_N * X)	0.00158	0.00160	0.00158
	(!B * !C_N * X)	-0.00121	-0.00122	-0.00121
	(!B * !C_N * X)	0.00153	0.00155	0.00154
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00141	-0.00142	-0.00141
	(B * C_N * X)	0.00159	0.00161	0.00160
	(B * !C_N * X)	-0.00136	-0.00137	-0.00136
	(B * !C_N * X)	0.00164	0.00166	0.00165
	(!B * !C_N * X)	-0.00136	-0.00136	-0.00136
	(!B * !C_N * X)	0.00160	0.00161	0.00161
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00206	-0.00208	-0.00207
	(B * C_N * X)	0.00313	0.00317	0.00314
	(B * !C_N * X)	-0.00185	-0.00186	-0.00185
	(B * !C_N * X)	0.00334	0.00337	0.00336
	(!B * !C_N * X)	-0.00184	-0.00185	-0.00184
	(!B * !C_N * X)	0.00326	0.00330	0.00328

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)	0.00146	0.00148	0.00146
	(A * C_N * X)	-0.00090	-0.00092	-0.00092
	(A * !C_N * X)	0.00141	0.00144	0.00135
	(A * !C_N * X)	-0.00124	-0.00124	-0.00124
	(!A * !C_N * X)	0.00160	0.00133	0.00129
	(!A * !C_N * X)	-0.00143	-0.00175	-0.00176
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00150	0.00153	0.00150
	(A * C_N * X)	-0.00084	-0.00086	-0.00085
	(A * !C_N * X)	0.00136	0.00139	0.00131
	(A * !C_N * X)	-0.00127	-0.00128	-0.00127
	(!A * !C_N * X)	0.00156	0.00126	0.00125
	(!A * !C_N * X)	-0.00147	-0.00175	-0.00177
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00188	0.00190	0.00186
	(A * C_N * X)	-0.00179	-0.00180	-0.00179
	(A * !C_N * X)	0.00181	0.00184	0.00168
	(A * !C_N * X)	-0.00245	-0.00247	-0.00245
	(!A * !C_N * X)	0.00214	0.00158	0.00153
	(!A * !C_N * X)	-0.00291	-0.00349	-0.00349

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)	-0.00143	-0.00144	-0.00143
	(A * C_N * X)	0.00095	0.00095	0.00095
	(A * !C_N * X)	-0.00128	-0.00129	-0.00129
	(A * !C_N * X)	0.00124	0.00124	0.00124
	(!A * !C_N * X)	-0.00128	-0.00129	-0.00128
	(!A * !C_N * X)	0.00176	0.00178	0.00177
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00147	-0.00148	-0.00147
	(A * C_N * X)	0.00088	0.00088	0.00089
	(A * !C_N * X)	-0.00124	-0.00125	-0.00125
	(A * !C_N * X)	0.00127	0.00128	0.00127
	(!A * !C_N * X)	-0.00124	-0.00124	-0.00123
	(!A * !C_N * X)	0.00177	0.00178	0.00178
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00183	-0.00184	-0.00182
	(A * C_N * X)	0.00184	0.00185	0.00185
	(A * !C_N * X)	-0.00155	-0.00156	-0.00155
	(A * !C_N * X)	0.00245	0.00247	0.00245
	(!A * !C_N * X)	-0.00152	-0.00152	-0.00150
	(!A * !C_N * X)	0.00351	0.00353	0.00351

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00396	0.00466	0.02876
	(B * X)	0.00060	0.00130	0.02541
	(A * !B * X)	0.00403	0.00473	0.02881
	(A * !B * X)	0.00063	0.00133	0.02543
sky130_fd_sc_hs__or3b_2	(B * X)	0.00443	0.00505	0.02866
	(B * X)	0.00096	0.00155	0.02520
	(A * !B * X)	0.00450	0.00511	0.02871
	(A * !B * X)	0.00099	0.00157	0.02520
sky130_fd_sc_hs__or3b_4	(B * X)	0.00562	0.00621	0.03090
	(B * X)	0.00146	0.00204	0.02673
	(A * !B * X)	0.00577	0.00636	0.03101
	(A * !B * X)	0.00151	0.00209	0.02676

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00095	0.00232	0.02676
	(B * X)	0.00429	0.00567	0.03011
	(A * !B * X)	0.00095	0.00232	0.02676
	(A * !B * X)	0.00429	0.00568	0.03011
sky130_fd_sc_hs__or3b_2	(B * X)	0.00102	0.00232	0.02634
	(B * X)	0.00447	0.00580	0.02981
	(A * !B * X)	0.00102	0.00232	0.02634
	(A * !B * X)	0.00448	0.00581	0.02982
sky130_fd_sc_hs__or3b_4	(B * X)	0.00131	0.00250	0.02740
	(B * X)	0.00548	0.00667	0.03156
	(A * !B * X)	0.00131	0.00250	0.02740
	(A * !B * X)	0.00549	0.00668	0.03157

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00254	0.00251	0.00246	1.09724
sky130_fd_sc_hs__or3_2	0.00258	0.00261	0.00268	2.10555
sky130_fd_sc_hs__or3_4	0.00481	0.00428	0.00418	3.92512

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	0.04350	0.14086
sky130_fd_sc_hs__or3_2	0.00000	0.05736	0.14705
sky130_fd_sc_hs__or3_4	0.00000	0.11071	0.29409

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)	0.07068	0.61057	6.32389
	B->X (RR)	0.06884	0.59637	6.25119
	C->X (RR)	0.06350	0.57532	6.23808
sky130_fd_sc_hs__or3_2	A->X (RR)	0.06783	0.51414	6.30459
	B->X (RR)	0.06579	0.50136	6.23490
	C->X (RR)	0.06161	0.48515	6.22122
sky130_fd_sc_hs__or3_4	A->X (RR)	0.09005	0.50829	6.63801
	B->X (RR)	0.08519	0.48958	6.54710
	C->X (RR)	0.07639	0.46396	6.52112

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.20494	0.66867	4.81322
	B->X (FF)	0.18859	0.67014	4.97408
	C->X (FF)	0.15587	0.64239	4.88465
sky130_fd_sc_hs__or3_2	A->X (FF)	0.24993	0.70196	5.00582
	B->X (FF)	0.23198	0.70747	5.18049
	C->X (FF)	0.20220	0.68553	5.10885
sky130_fd_sc_hs__or3_4	A->X (FF)	0.22515	0.63197	4.67010
	B->X (FF)	0.20728	0.63224	4.81938
	C->X (FF)	0.17161	0.59978	4.70894

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01034	0.01031	0.01990
	A	0.00464	0.00462	0.01440
	B	0.00871	0.00900	0.01908
	B	0.00391	0.00420	0.01456
	C	0.00711	0.00755	0.02174
	C	0.00304	0.00348	0.01795
sky130_fd_sc_hs__or3_2	A	0.01286	0.01316	0.02437
	A	0.00713	0.00746	0.01905
	B	0.01113	0.01189	0.02333
	B	0.00625	0.00704	0.01902
	C	0.00965	0.01050	0.02577
	C	0.00546	0.00632	0.02217
sky130_fd_sc_hs__or3_4	A	0.02388	0.02436	0.04189
	A	0.01371	0.01422	0.03195
	B	0.02002	0.02104	0.03943
	B	0.01209	0.01318	0.03191
	C	0.01650	0.01773	0.04323
	C	0.01004	0.01132	0.03723

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00367	0.00362	0.01306
	A	0.00941	0.00938	0.01798
	B	0.00371	0.00383	0.01425
	B	0.00853	0.00866	0.01867
	C	0.00363	0.00443	0.02058
	C	0.00769	0.00850	0.02410
sky130_fd_sc_hs__or3_2	A	0.00635	0.00623	0.01683
	A	0.01214	0.01201	0.02148
	B	0.00639	0.00644	0.01721
	B	0.01130	0.01139	0.02208
	C	0.00628	0.00678	0.02377
	C	0.01048	0.01118	0.02770
sky130_fd_sc_hs__or3_4	A	0.01167	0.01174	0.02759
	A	0.02196	0.02200	0.03668
	B	0.01212	0.01244	0.03136
	B	0.02009	0.02040	0.03766
	C	0.01186	0.01331	0.04343
	C	0.01832	0.01958	0.04736

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00132	0.00133	0.00132
	(B * C * X)	-0.00153	-0.00158	-0.00157
	(B * !C * X)	0.00137	0.00133	0.00132
	(B * !C * X)	-0.00147	-0.00157	-0.00157
	(!B * C * X)	0.00136	0.00133	0.00132
	(!B * C * X)	-0.00138	-0.00153	-0.00152
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00139	0.00140	0.00138
	(B * C * X)	-0.00156	-0.00160	-0.00159
	(B * !C * X)	0.00145	0.00140	0.00139
	(B * !C * X)	-0.00149	-0.00160	-0.00159
	(!B * C * X)	0.00143	0.00140	0.00139
	(!B * C * X)	-0.00140	-0.00155	-0.00154
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00220	0.00221	0.00218
	(B * C * X)	-0.00306	-0.00314	-0.00314
	(B * !C * X)	0.00228	0.00221	0.00218
	(B * !C * X)	-0.00294	-0.00316	-0.00314
	(!B * C * X)	0.00227	0.00221	0.00218
	(!B * C * X)	-0.00277	-0.00308	-0.00305

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00132	-0.00132	-0.00132
	(B * C * X)	0.00158	0.00158	0.00157
	(B * !C * X)	-0.00132	-0.00131	-0.00132
	(B * !C * X)	0.00158	0.00157	0.00157
	(!B * C * X)	-0.00131	-0.00132	-0.00131
	(!B * C * X)	0.00151	0.00153	0.00152
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00138	-0.00139	-0.00138
	(B * C * X)	0.00158	0.00160	0.00159
	(B * !C * X)	-0.00138	-0.00139	-0.00138
	(B * !C * X)	0.00159	0.00161	0.00159
	(!B * C * X)	-0.00138	-0.00138	-0.00138
	(!B * C * X)	0.00153	0.00155	0.00154
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00218	-0.00218	-0.00218
	(B * C * X)	0.00313	0.00314	0.00314
	(B * !C * X)	-0.00217	-0.00219	-0.00218
	(B * !C * X)	0.00313	0.00317	0.00314
	(!B * C * X)	-0.00218	-0.00218	-0.00217
	(!B * C * X)	0.00306	0.00308	0.00305

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00135	0.00137	0.00129
	(A * C * X)	-0.00103	-0.00104	-0.00103
	(A * !C * X)	0.00123	0.00125	0.00122
	(A * !C * X)	-0.00085	-0.00087	-0.00086
	(!A * C * X)	0.00153	0.00125	0.00122
	(!A * C * X)	-0.00123	-0.00154	-0.00155
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00138	0.00139	0.00131
	(A * C * X)	-0.00114	-0.00114	-0.00113
	(A * !C * X)	0.00127	0.00128	0.00125
	(A * !C * X)	-0.00097	-0.00097	-0.00097
	(!A * C * X)	0.00157	0.00128	0.00125
	(!A * C * X)	-0.00134	-0.00165	-0.00165
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00182	0.00184	0.00168
	(A * C * X)	-0.00214	-0.00215	-0.00214
	(A * !C * X)	0.00157	0.00158	0.00155
	(A * !C * X)	-0.00180	-0.00182	-0.00181
	(!A * C * X)	0.00215	0.00158	0.00153
	(!A * C * X)	-0.00259	-0.00321	-0.00322

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00122	-0.00123	-0.00122
	(A * C * X)	0.00103	0.00104	0.00103
	(A * !C * X)	-0.00121	-0.00121	-0.00120
	(A * !C * X)	0.00089	0.00089	0.00089
	(!A * C * X)	-0.00120	-0.00121	-0.00120
	(!A * C * X)	0.00154	0.00156	0.00155
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00125	-0.00125	-0.00125
	(A * C * X)	0.00114	0.00114	0.00113
	(A * !C * X)	-0.00123	-0.00124	-0.00123
	(A * !C * X)	0.00098	0.00100	0.00099
	(!A * C * X)	-0.00124	-0.00125	-0.00123
	(!A * C * X)	0.00164	0.00166	0.00166
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00155	-0.00156	-0.00155
	(A * C * X)	0.00214	0.00215	0.00214
	(A * !C * X)	-0.00152	-0.00153	-0.00150
	(A * !C * X)	0.00185	0.00186	0.00187
	(!A * C * X)	-0.00152	-0.00152	-0.00151
	(!A * C * X)	0.00322	0.00323	0.00322

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00135	0.00138	0.00136
	(B * X)	-0.00080	-0.00081	-0.00080
	(A * !B * X)	0.00135	0.00138	0.00136
	(A * !B * X)	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__or3_2	(B * X)	0.00152	0.00154	0.00152
	(B * X)	-0.00081	-0.00082	-0.00081
	(A * !B * X)	0.00152	0.00154	0.00152
	(A * !B * X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__or3_4	(B * X)	0.00193	0.00196	0.00193
	(B * X)	-0.00161	-0.00164	-0.00161
	(A * !B * X)	0.00193	0.00196	0.00193
	(A * !B * X)	-0.00161	-0.00163	-0.00160

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00131	-0.00132	-0.00135
	(B * X)	0.00085	0.00085	0.00081
	(A * !B * X)	-0.00124	-0.00125	-0.00134
	(A * !B * X)	0.00089	0.00089	0.00082
sky130_fd_sc_hs__or3_2	(B * X)	-0.00147	-0.00149	-0.00152
	(B * X)	0.00086	0.00086	0.00083
	(A * !B * X)	-0.00140	-0.00141	-0.00151
	(A * !B * X)	0.00090	0.00090	0.00083
sky130_fd_sc_hs__or3_4	(B * X)	-0.00181	-0.00183	-0.00192
	(B * X)	0.00172	0.00173	0.00164
	(A * !B * X)	-0.00167	-0.00168	-0.00189
	(A * !B * X)	0.00179	0.00180	0.00164

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00249	0.00246	0.00232	0.00235	1.07367
sky130_fd_sc_hs__or4bb_2	0.00248	0.00262	0.00228	0.00226	1.81731
sky130_fd_sc_hs__or4bb_4	0.00392	0.00400	0.00253	0.00251	3.43364

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	0.32502	0.65309
sky130_fd_sc_hs__or4bb_2	0.00000	0.33535	0.72553
sky130_fd_sc_hs__or4bb_4	0.00000	0.21803	0.50563

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)	0.07203	0.62762	6.34957
	B->X (RR)	0.07201	0.61831	6.27732
	C_N->X (FR)	0.13859	0.79866	8.18916
	D_N->X (FR)	0.12516	0.77503	8.14279
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.06989	0.53456	6.10071
	B->X (RR)	0.07102	0.52831	6.04262
	C_N->X (FR)	0.12714	0.68886	7.94833
	D_N->X (FR)	0.12799	0.69380	7.98534
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.09719	0.54585	6.58028
	B->X (RR)	0.09954	0.53718	6.51545
	C_N->X (FR)	0.17636	0.70241	8.30075
	D_N->X (FR)	0.17587	0.70836	8.31530

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.29022	0.77046	4.89495
	B->X (FF)	0.27029	0.75839	5.06136
	C_N->X (RF)	0.27087	0.57785	2.57991
	D_N->X (RF)	0.21250	0.51099	2.50303
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.35270	0.81126	4.81368
	B->X (FF)	0.34052	0.80822	4.96130
	C_N->X (RF)	0.33406	0.60951	2.27267
	D_N->X (RF)	0.28893	0.56158	2.25569
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.38578	0.81738	4.61504
	B->X (FF)	0.37011	0.80326	4.77115
	C_N->X (RF)	0.36658	0.61489	2.21438
	D_N->X (RF)	0.29363	0.54539	2.16599

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00964	0.00948	0.01788
	A	0.00533	0.00517	0.01376
	B	0.00820	0.00847	0.01723
	B	0.00454	0.00481	0.01382
	C_N	0.00751	0.00900	0.03338
	C_N	0.01042	0.01194	0.03637
	D_N	0.00650	0.00808	0.03274
	D_N	0.00908	0.01065	0.03541
sky130_fd_sc_hs__or4bb_2	A	0.01202	0.01267	0.02518
	A	0.00767	0.00834	0.02150
	B	0.01082	0.01145	0.02331
	B	0.00697	0.00762	0.02014
	C_N	0.00962	0.01163	0.03662
	C_N	0.01243	0.01446	0.03983
	D_N	0.00927	0.01072	0.03409
	D_N	0.01184	0.01334	0.03699
sky130_fd_sc_hs__or4bb_4	A	0.02439	0.02500	0.04341
	A	0.01667	0.01729	0.03607
	B	0.02064	0.02142	0.03914
	B	0.01460	0.01540	0.03359
	C_N	0.01999	0.02209	0.04573
	C_N	0.02264	0.02473	0.04840
	D_N	0.01750	0.01951	0.04384
	D_N	0.02017	0.02218	0.04652

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00617	0.00591	0.01425
	A	0.01052	0.01032	0.01769
	B	0.00594	0.00587	0.01451
	B	0.00962	0.00954	0.01806
	C_N	0.01190	0.01242	0.03608
	C_N	0.00898	0.00949	0.03293
	D_N	0.01048	0.01112	0.03559
	D_N	0.00790	0.00854	0.03279
sky130_fd_sc_hs__or4bb_2	A	0.00891	0.00835	0.01816
	A	0.01330	0.01286	0.02246
	B	0.00859	0.00800	0.01793
	B	0.01245	0.01204	0.02145
	C_N	0.01442	0.01466	0.03853
	C_N	0.01161	0.01181	0.03553
	D_N	0.01368	0.01374	0.03587
	D_N	0.01110	0.01112	0.03310
sky130_fd_sc_hs__or4bb_4	A	0.01900	0.01807	0.03258
	A	0.02685	0.02592	0.03934
	B	0.01915	0.01796	0.03206
	B	0.02524	0.02424	0.03811
	C_N	0.02616	0.02541	0.04791
	C_N	0.02353	0.02293	0.04512
	D_N	0.02499	0.02431	0.04800
	D_N	0.02231	0.02164	0.04505

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)**	0.00129	0.00127	0.00126
	(B * C_N * D_N * X)	-0.00151	-0.00159	-0.00159
	(B * !D_N * X)	0.00128	0.00127	0.00125
	(B * !D_N * X)	-0.00153	-0.00159	-0.00159
	(B * !C_N * D_N * X)	0.00125	0.00127	0.00125
	(B * !C_N * D_N * X)	-0.00155	-0.00159	-0.00159
	(!B * C_N * !D_N * X)	0.00135	0.00130	0.00127
	(!B * C_N * !D_N * X)	-0.00140	-0.00152	-0.00152
	(!B * !C_N * D_N * X)	0.00125	0.00126	0.00125
	(!B * !C_N * D_N * X)	-0.00144	-0.00155	-0.00154
	(!B * !C_N * !D_N * X)	0.00125	0.00126	0.00125
	(!B * !C_N * !D_N * X)	-0.00144	-0.00155	-0.00154
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00138	0.00135	0.00134
	(B * C_N * D_N * X)	-0.00151	-0.00158	-0.00158
	(B * !D_N * X)	0.00137	0.00135	0.00133
	(B * !D_N * X)	-0.00152	-0.00158	-0.00158
	(B * !C_N * D_N * X)	0.00120	0.00121	0.00119
	(B * !C_N * D_N * X)	-0.00169	-0.00172	-0.00172
	(!B * C_N * !D_N * X)	0.00143	0.00138	0.00135
	(!B * C_N * !D_N * X)	-0.00139	-0.00151	-0.00151
	(!B * !C_N * D_N * X)	0.00120	0.00120	0.00119
	(!B * !C_N * D_N * X)	-0.00157	-0.00168	-0.00167
	(!B * !C_N * !D_N * X)	0.00119	0.00120	0.00119
	(!B * !C_N * !D_N * X)	-0.00157	-0.00167	-0.00166

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00172	0.00166	0.00163
	(B * C_N * D_N * X)	-0.00306	-0.00326	-0.00325
	(B * !D_N * X)	0.00169	0.00165	0.00163
	(B * !D_N * X)	-0.00310	-0.00326	-0.00324
	(B * !C_N * D_N * X)	0.00163	0.00165	0.00163
	(B * !C_N * D_N * X)	-0.00314	-0.00326	-0.00324
	(!B * C_N * !D_N * X)	0.00185	0.00173	0.00168
	(!B * C_N * !D_N * X)	-0.00286	-0.00310	-0.00309
	(!B * !C_N * D_N * X)	0.00165	0.00165	0.00163
	(!B * !C_N * D_N * X)	-0.00293	-0.00315	-0.00314
	(!B * !C_N * !D_N * X)	0.00164	0.00165	0.00163
	(!B * !C_N * !D_N * X)	-0.00292	-0.00314	-0.00313

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)**	-0.00124	-0.00125	-0.00124
	(B * C_N * D_N * X)	0.00159	0.00161	0.00159
	(B * !D_N * X)	-0.00125	-0.00125	-0.00125
	(B * !D_N * X)	0.00159	0.00160	0.00159
	(B * !C_N * D_N * X)	-0.00124	-0.00125	-0.00125
	(B * !C_N * D_N * X)	0.00158	0.00160	0.00159
	(!B * C_N * !D_N * X)	-0.00129	-0.00129	-0.00127
	(!B * C_N * !D_N * X)	0.00151	0.00152	0.00152
	(!B * !C_N * D_N * X)	-0.00124	-0.00125	-0.00125
	(!B * !C_N * D_N * X)	0.00154	0.00155	0.00154
	(!B * !C_N * !D_N * X)	-0.00124	-0.00125	-0.00125
	(!B * !C_N * !D_N * X)	0.00153	0.00155	0.00154

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00132	-0.00132	-0.00132
	(B * C_N * D_N * X)	0.00157	0.00158	0.00158
	(B * !D_N * X)	-0.00132	-0.00133	-0.00133
	(B * !D_N * X)	0.00157	0.00159	0.00158
	(B * !C_N * D_N * X)	-0.00118	-0.00119	-0.00119
	(B * !C_N * D_N * X)	0.00171	0.00173	0.00172
	(!B * C_N * !D_N * X)	-0.00137	-0.00137	-0.00135
	(!B * C_N * !D_N * X)	0.00150	0.00151	0.00151
	(!B * !C_N * D_N * X)	-0.00118	-0.00119	-0.00119
	(!B * !C_N * D_N * X)	0.00166	0.00168	0.00167
	(!B * !C_N * !D_N * X)	-0.00119	-0.00119	-0.00119
	(!B * !C_N * !D_N * X)	0.00166	0.00167	0.00166
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00162	-0.00163	-0.00162
	(B * C_N * D_N * X)	0.00324	0.00327	0.00325
	(B * !D_N * X)	-0.00163	-0.00163	-0.00163
	(B * !D_N * X)	0.00323	0.00326	0.00324
	(B * !C_N * D_N * X)	-0.00162	-0.00163	-0.00162
	(B * !C_N * D_N * X)	0.00323	0.00326	0.00324
	(!B * C_N * !D_N * X)	-0.00172	-0.00173	-0.00168
	(!B * C_N * !D_N * X)	0.00306	0.00310	0.00309
	(!B * !C_N * D_N * X)	-0.00163	-0.00163	-0.00163
	(!B * !C_N * D_N * X)	0.00314	0.00315	0.00314
	(!B * !C_N * !D_N * X)	-0.00163	-0.00163	-0.00163
	(!B * !C_N * !D_N * X)	0.00313	0.00314	0.00313

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)**	0.00134	0.00137	0.00135
	(A * C_N * D_N * X)	-0.00095	-0.00097	-0.00096
	(A * C_N * !D_N * X)	0.00153	0.00158	0.00158
	(A * C_N * !D_N * X)	-0.00113	-0.00113	-0.00113
	(A * !C_N * D_N * X)	0.00117	0.00119	0.00111
	(A * !C_N * D_N * X)	-0.00141	-0.00142	-0.00141
	(A * !C_N * !D_N * X)	0.00108	0.00110	0.00108
	(A * !C_N * !D_N * X)	-0.00145	-0.00146	-0.00145
	(!A * C_N * !D_N * X)	0.00157	0.00140	0.00136
	(!A * C_N * !D_N * X)	-0.00142	-0.00160	-0.00159
	(!A * !C_N * D_N * X)	0.00124	0.00110	0.00108
	(!A * !C_N * D_N * X)	-0.00175	-0.00191	-0.00190
	(!A * !C_N * !D_N * X)	0.00109	0.00110	0.00108
	(!A * !C_N * !D_N * X)	-0.00190	-0.00191	-0.00190
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00165	0.00167	0.00164
	(A * C_N * D_N * X)	-0.00087	-0.00088	-0.00086
	(A * C_N * !D_N * X)	0.00185	0.00189	0.00188
	(A * C_N * !D_N * X)	-0.00102	-0.00103	-0.00103
	(A * !C_N * D_N * X)	0.00155	0.00157	0.00150
	(A * !C_N * D_N * X)	-0.00122	-0.00123	-0.00122
	(A * !C_N * !D_N * X)	0.00146	0.00148	0.00146
	(A * !C_N * !D_N * X)	-0.00127	-0.00128	-0.00127
	(!A * C_N * !D_N * X)	0.00186	0.00169	0.00165
	(!A * C_N * !D_N * X)	-0.00132	-0.00149	-0.00149
	(!A * !C_N * D_N * X)	0.00162	0.00148	0.00147
	(!A * !C_N * D_N * X)	-0.00156	-0.00172	-0.00171
	(!A * !C_N * !D_N * X)	0.00147	0.00148	0.00146
	(!A * !C_N * !D_N * X)	-0.00170	-0.00172	-0.00171

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00168	0.00170	0.00168
	(A * C_N * D_N * X)	-0.00186	-0.00188	-0.00185
	(A * C_N * !D_N * X)	0.00198	0.00209	0.00209
	(A * C_N * !D_N * X)	-0.00223	-0.00224	-0.00222
	(A * !C_N * D_N * X)	0.00172	0.00171	0.00163
	(A * !C_N * D_N * X)	-0.00234	-0.00234	-0.00233
	(A * !C_N * !D_N * X)	0.00160	0.00162	0.00160
	(A * !C_N * !D_N * X)	-0.00242	-0.00243	-0.00241
	(!A * C_N * !D_N * X)	0.00204	0.00175	0.00168
	(!A * C_N * !D_N * X)	-0.00283	-0.00314	-0.00313
	(!A * !C_N * D_N * X)	0.00179	0.00159	0.00158
	(!A * !C_N * D_N * X)	-0.00305	-0.00330	-0.00330
	(!A * !C_N * !D_N * X)	0.00158	0.00159	0.00158
	(!A * !C_N * !D_N * X)	-0.00324	-0.00330	-0.00329

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)**	-0.00129	-0.00130	-0.00130
	(A * C_N * D_N * X)	0.00101	0.00102	0.00102
	(A * C_N * !D_N * X)	-0.00149	-0.00149	-0.00149
	(A * C_N * !D_N * X)	0.00113	0.00113	0.00113
	(A * !C_N * D_N * X)	-0.00107	-0.00108	-0.00108
	(A * !C_N * D_N * X)	0.00141	0.00142	0.00141
	(A * !C_N * !D_N * X)	-0.00108	-0.00108	-0.00108
	(A * !C_N * !D_N * X)	0.00145	0.00146	0.00145
	(!A * C_N * !D_N * X)	-0.00140	-0.00140	-0.00136
	(!A * C_N * !D_N * X)	0.00159	0.00160	0.00159
	(!A * !C_N * D_N * X)	-0.00107	-0.00108	-0.00107
	(!A * !C_N * D_N * X)	0.00190	0.00191	0.00190
	(!A * !C_N * !D_N * X)	-0.00108	-0.00108	-0.00108
	(!A * !C_N * !D_N * X)	0.00190	0.00191	0.00190
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00160	-0.00160	-0.00160
	(A * C_N * D_N * X)	0.00090	0.00091	0.00091
	(A * C_N * !D_N * X)	-0.00177	-0.00179	-0.00178
	(A * C_N * !D_N * X)	0.00102	0.00103	0.00103
	(A * !C_N * D_N * X)	-0.00146	-0.00147	-0.00146
	(A * !C_N * D_N * X)	0.00122	0.00123	0.00122
	(A * !C_N * !D_N * X)	-0.00146	-0.00147	-0.00146
	(A * !C_N * !D_N * X)	0.00127	0.00128	0.00127
	(!A * C_N * !D_N * X)	-0.00169	-0.00169	-0.00165
	(!A * C_N * !D_N * X)	0.00148	0.00149	0.00149
	(!A * !C_N * D_N * X)	-0.00146	-0.00146	-0.00146
	(!A * !C_N * D_N * X)	0.00172	0.00172	0.00172
	(!A * !C_N * !D_N * X)	-0.00146	-0.00147	-0.00146
	(!A * !C_N * !D_N * X)	0.00171	0.00173	0.00171

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00154	-0.00156	-0.00156
	(A * C_N * D_N * X)	0.00198	0.00200	0.00199
	(A * C_N * !D_N * X)	-0.00194	-0.00195	-0.00194
	(A * C_N * !D_N * X)	0.00223	0.00224	0.00222
	(A * !C_N * D_N * X)	-0.00160	-0.00160	-0.00159
	(A * !C_N * D_N * X)	0.00234	0.00234	0.00233
	(A * !C_N * !D_N * X)	-0.00159	-0.00160	-0.00159
	(A * !C_N * !D_N * X)	0.00242	0.00243	0.00241
	(!A * C_N * !D_N * X)	-0.00177	-0.00175	-0.00168
	(!A * C_N * !D_N * X)	0.00311	0.00314	0.00313
	(!A * !C_N * D_N * X)	-0.00157	-0.00158	-0.00158
	(!A * !C_N * D_N * X)	0.00329	0.00333	0.00330
	(!A * !C_N * !D_N * X)	-0.00158	-0.00158	-0.00158
	(!A * !C_N * !D_N * X)	0.00328	0.00330	0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00455	0.00513	0.02870
	(B * X)	0.00099	0.00156	0.02515
	(A * !B * X) + (!A * !B * !D_N * X)	0.00462	0.00520	0.02873
	(A * !B * X) + (!A * !B * !D_N * X)	0.00099	0.00156	0.02513
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00415	0.00482	0.02889
	(B * X)	0.00071	0.00137	0.02545
	(A * !B * X) + (!A * !B * !D_N * X)	0.00422	0.00488	0.02891
	(A * !B * X) + (!A * !B * !D_N * X)	0.00071	0.00137	0.02541
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00505	0.00570	0.03008
	(B * X)	0.00139	0.00203	0.02642
	(A * !B * X) + (!A * !B * !D_N * X)	0.00521	0.00585	0.03016
	(A * !B * X) + (!A * !B * !D_N * X)	0.00143	0.00207	0.02640

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00112	0.00241	0.02635
	(B * X)	0.00467	0.00597	0.02990
	(A * !B * X) + (!A * !B * !D_N * X)	0.00113	0.00241	0.02635
	(A * !B * X) + (!A * !B * !D_N * X)	0.00468	0.00598	0.02991
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00099	0.00235	0.02675
	(B * X)	0.00442	0.00579	0.03019
	(A * !B * X) + (!A * !B * !D_N * X)	0.00100	0.00235	0.02674
	(A * !B * X) + (!A * !B * !D_N * X)	0.00443	0.00580	0.03018
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00185	0.00302	0.02756
	(B * X)	0.00549	0.00667	0.03120
	(A * !B * X) + (!A * !B * !D_N * X)	0.00186	0.00303	0.02756
	(A * !B * X) + (!A * !B * !D_N * X)	0.00551	0.00670	0.03122

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)	0.00398	0.00463	0.02835
	(B * C_N * X)	0.00076	0.00140	0.02514
	(A * !B * C_N * X)	0.00407	0.00472	0.02842
	(A * !B * C_N * X)	0.00082	0.00146	0.02518
	(!C_N * X)	0.00407	0.00472	0.02846
	(!C_N * X)	0.00087	0.00150	0.02525
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00405	0.00465	0.02832
	(B * C_N * X)	0.00085	0.00147	0.02513
	(A * !B * C_N * X)	0.00413	0.00476	0.02839
	(A * !B * C_N * X)	0.00090	0.00151	0.02517
	(!C_N * X)	0.00415	0.00476	0.02845
	(!C_N * X)	0.00096	0.00158	0.02526
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00577	0.00634	0.03053
	(B * C_N * X)	0.00211	0.00269	0.02688
	(A * !B * C_N * X)	0.00600	0.00657	0.03070
	(A * !B * C_N * X)	0.00226	0.00284	0.02699
	(!C_N * X)	0.00610	0.00668	0.03090
	(!C_N * X)	0.00247	0.00306	0.02727

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)	0.00111	0.00244	0.02652
	(B * C_N * X)	0.00431	0.00565	0.02973
	(A * !B * C_N * X)	0.00111	0.00244	0.02652
	(A * !B * C_N * X)	0.00431	0.00565	0.02973
	(!C_N * X)	0.00097	0.00230	0.02639
	(!C_N * X)	0.00417	0.00551	0.02959
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00135	0.00266	0.02672
	(B * C_N * X)	0.00453	0.00586	0.02991
	(A * !B * C_N * X)	0.00135	0.00266	0.02672
	(A * !B * C_N * X)	0.00453	0.00586	0.02991
	(!C_N * X)	0.00120	0.00251	0.02657
	(!C_N * X)	0.00438	0.00570	0.02976
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00222	0.00334	0.02781
	(B * C_N * X)	0.00584	0.00698	0.03144
	(A * !B * C_N * X)	0.00222	0.00334	0.02781
	(A * !B * C_N * X)	0.00584	0.00699	0.03144
	(!C_N * X)	0.00180	0.00293	0.02739
	(!C_N * X)	0.00542	0.00656	0.03102

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00254	0.00242	0.00251	0.00237	1.03861
sky130_fd_sc_hs__or4b_2	0.00263	0.00253	0.00254	0.00226	1.83049
sky130_fd_sc_hs__or4b_4	0.00387	0.00439	0.00442	0.00248	4.00874

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.17674	0.36010
sky130_fd_sc_hs__or4b_2	0.00000	0.18707	0.43253
sky130_fd_sc_hs__or4b_4	0.00000	0.14647	0.37097

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)	0.07560	0.63971	6.35111
	B->X (RR)	0.07540	0.63082	6.28161
	C->X (RR)	0.07262	0.61429	6.20903
	D_N->X (FR)	0.12552	0.77912	8.10111
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.07075	0.53565	6.09541
	B->X (RR)	0.07105	0.52952	6.03902
	C->X (RR)	0.06878	0.51634	5.96929
	D_N->X (FR)	0.13351	0.70476	8.02412
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.09866	0.54186	6.75741
	B->X (RR)	0.09863	0.52997	6.68657
	C->X (RR)	0.09107	0.50515	6.59022
	D_N->X (FR)	0.15616	0.67004	8.38750

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.30377	0.78666	4.85423
	B->X (FF)	0.28336	0.77446	5.02498
	C->X (FF)	0.25448	0.76110	5.09078
	D_N->X (RF)	0.22006	0.52535	2.45255
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.37105	0.83358	4.83538
	B->X (FF)	0.35148	0.82552	5.02043
	C->X (FF)	0.31626	0.80868	5.10344
	D_N->X (RF)	0.29544	0.57750	2.30164
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.37080	0.81558	5.01079
	B->X (FF)	0.35646	0.80509	5.13849
	C->X (FF)	0.30787	0.76988	5.20865
	D_N->X (RF)	0.27463	0.53086	2.52066

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01101	0.01081	0.01880
	A	0.00548	0.00529	0.01347
	B	0.00937	0.00962	0.01793
	B	0.00479	0.00506	0.01361
	C	0.00795	0.00826	0.01649
	C	0.00396	0.00427	0.01279
	D_N	0.00700	0.00860	0.03335
	D_N	0.00937	0.01097	0.03584
sky130_fd_sc_hs__or4b_2	A	0.01368	0.01390	0.02263
	A	0.00807	0.00831	0.01769
	B	0.01207	0.01268	0.02161
	B	0.00739	0.00803	0.01764
	C	0.01056	0.01130	0.01995
	C	0.00647	0.00722	0.01654
	D_N	0.00973	0.01157	0.03468
	D_N	0.01226	0.01413	0.03751
sky130_fd_sc_hs__or4b_4	A	0.02556	0.02625	0.04433
	A	0.01598	0.01675	0.03479
	B	0.02276	0.02348	0.04117
	B	0.01435	0.01511	0.03292
	C	0.01898	0.02001	0.03761
	C	0.01196	0.01304	0.03093
	D_N	0.01703	0.01933	0.04385
	D_N	0.01936	0.02165	0.04619

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00522	0.00490	0.01296
	A	0.01081	0.01054	0.01777
	B	0.00524	0.00505	0.01370
	B	0.00985	0.00971	0.01801
	C	0.00512	0.00507	0.01424
	C	0.00911	0.00910	0.01763
	D_N	0.01037	0.01113	0.03582
	D_N	0.00798	0.00871	0.03329
sky130_fd_sc_hs__or4b_2	A	0.00783	0.00694	0.01468
	A	0.01350	0.01261	0.02024
	B	0.00792	0.00700	0.01577
	B	0.01263	0.01181	0.02034
	C	0.00762	0.00705	0.01659
	C	0.01173	0.01116	0.01992
	D_N	0.01389	0.01366	0.03572
	D_N	0.01136	0.01114	0.03296
sky130_fd_sc_hs__or4b_4	A	0.01722	0.01620	0.03039
	A	0.02701	0.02597	0.03950
	B	0.01707	0.01584	0.02994
	B	0.02559	0.02451	0.03835
	C	0.01653	0.01556	0.03060
	C	0.02355	0.02255	0.03755
	D_N	0.02407	0.02392	0.04836
	D_N	0.02174	0.02136	0.04577

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)**	0.00131	0.00132	0.00131
	(B * C * D_N * X)	-0.00152	-0.00157	-0.00157
	(B * !D_N * X)	0.00131	0.00132	0.00130
	(B * !D_N * X)	-0.00153	-0.00158	-0.00157
	(B * !C * D_N * X)	0.00132	0.00132	0.00131
	(B * !C * D_N * X)	-0.00149	-0.00157	-0.00157
	(!B * C * D_N * X)	0.00131	0.00132	0.00130
	(!B * C * D_N * X)	-0.00140	-0.00152	-0.00151
	(!B * C * !D_N * X)	0.00130	0.00131	0.00130
	(!B * C * !D_N * X)	-0.00140	-0.00152	-0.00151
	(!B * !C * !D_N * X)	0.00131	0.00132	0.00130
	(!B * !C * !D_N * X)	-0.00138	-0.00150	-0.00149
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00143	0.00144	0.00143
	(B * C * D_N * X)	-0.00154	-0.00159	-0.00159
	(B * !D_N * X)	0.00138	0.00139	0.00138
	(B * !D_N * X)	-0.00160	-0.00164	-0.00163
	(B * !C * D_N * X)	0.00144	0.00145	0.00143
	(B * !C * D_N * X)	-0.00152	-0.00159	-0.00159
	(!B * C * D_N * X)	0.00143	0.00144	0.00143
	(!B * C * D_N * X)	-0.00142	-0.00154	-0.00153
	(!B * C * !D_N * X)	0.00137	0.00139	0.00138
	(!B * C * !D_N * X)	-0.00147	-0.00159	-0.00158
	(!B * !C * !D_N * X)	0.00139	0.00139	0.00138
	(!B * !C * !D_N * X)	-0.00145	-0.00157	-0.00156

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00143	0.00143	0.00141
	(B * C * D_N * X)	-0.00312	-0.00321	-0.00321
	(B * !D_N * X)	0.00141	0.00143	0.00141
	(B * !D_N * X)	-0.00314	-0.00322	-0.00321
	(B * !C * D_N * X)	0.00145	0.00143	0.00142
	(B * !C * D_N * X)	-0.00303	-0.00319	-0.00321
	(!B * C * D_N * X)	0.00144	0.00143	0.00141
	(!B * C * D_N * X)	-0.00285	-0.00311	-0.00309
	(!B * C * !D_N * X)	0.00141	0.00143	0.00141
	(!B * C * !D_N * X)	-0.00287	-0.00312	-0.00309
	(!B * !C * !D_N * X)	0.00144	0.00143	0.00141
	(!B * !C * !D_N * X)	-0.00282	-0.00307	-0.00305

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)**	-0.00130	-0.00130	-0.00130
	(B * C * D_N * X)	0.00157	0.00158	0.00157
	(B * !D_N * X)	-0.00130	-0.00131	-0.00130
	(B * !D_N * X)	0.00157	0.00158	0.00157
	(B * !C * D_N * X)	-0.00130	-0.00131	-0.00130
	(B * !C * D_N * X)	0.00157	0.00158	0.00157
	(!B * C * D_N * X)	-0.00130	-0.00130	-0.00130
	(!B * C * D_N * X)	0.00151	0.00152	0.00151
	(!B * C * !D_N * X)	-0.00130	-0.00131	-0.00130
	(!B * C * !D_N * X)	0.00151	0.00152	0.00151
	(!B * !C * !D_N * X)	-0.00129	-0.00130	-0.00130
	(!B * !C * !D_N * X)	0.00149	0.00150	0.00149

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00142	-0.00143	-0.00142
	(B * C * D_N * X)	0.00158	0.00160	0.00159
	(B * !D_N * X)	-0.00137	-0.00138	-0.00137
	(B * !D_N * X)	0.00163	0.00165	0.00163
	(B * !C * D_N * X)	-0.00142	-0.00143	-0.00142
	(B * !C * D_N * X)	0.00159	0.00160	0.00159
	(!B * C * D_N * X)	-0.00142	-0.00142	-0.00142
	(!B * C * D_N * X)	0.00153	0.00154	0.00153
	(!B * C * !D_N * X)	-0.00137	-0.00138	-0.00137
	(!B * C * !D_N * X)	0.00157	0.00159	0.00158
	(!B * !C * !D_N * X)	-0.00137	-0.00138	-0.00137
	(!B * !C * !D_N * X)	0.00155	0.00157	0.00156
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00141	-0.00141	-0.00141
	(B * C * D_N * X)	0.00321	0.00321	0.00321
	(B * !D_N * X)	-0.00141	-0.00141	-0.00141
	(B * !D_N * X)	0.00322	0.00322	0.00321
	(B * !C * D_N * X)	-0.00140	-0.00140	-0.00141
	(B * !C * D_N * X)	0.00319	0.00319	0.00321
	(!B * C * D_N * X)	-0.00141	-0.00142	-0.00141
	(!B * C * D_N * X)	0.00309	0.00311	0.00309
	(!B * C * !D_N * X)	-0.00141	-0.00141	-0.00141
	(!B * C * !D_N * X)	0.00310	0.00312	0.00309
	(!B * !C * !D_N * X)	-0.00140	-0.00141	-0.00140
	(!B * !C * !D_N * X)	0.00306	0.00307	0.00305

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)**	0.00125	0.00126	0.00118
	(A * C * D_N * X)	-0.00103	-0.00104	-0.00103
	(A * C * !D_N * X)	0.00115	0.00116	0.00115
	(A * C * !D_N * X)	-0.00106	-0.00107	-0.00107
	(A * !C * D_N * X)	0.00115	0.00116	0.00114
	(A * !C * D_N * X)	-0.00086	-0.00086	-0.00085
	(A * !C * !D_N * X)	0.00115	0.00116	0.00115
	(A * !C * !D_N * X)	-0.00101	-0.00101	-0.00101
	(!A * C * D_N * X)	0.00129	0.00116	0.00114
	(!A * C * D_N * X)	-0.00134	-0.00152	-0.00153
	(!A * C * !D_N * X)	0.00113	0.00115	0.00113
	(!A * C * !D_N * X)	-0.00149	-0.00153	-0.00152
	(!A * !C * !D_N * X)	0.00122	0.00115	0.00114
	(!A * !C * !D_N * X)	-0.00129	-0.00148	-0.00147
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00137	0.00140	0.00132
	(A * C * D_N * X)	-0.00104	-0.00104	-0.00104
	(A * C * !D_N * X)	0.00124	0.00126	0.00124
	(A * C * !D_N * X)	-0.00112	-0.00113	-0.00112
	(A * !C * D_N * X)	0.00128	0.00131	0.00128
	(A * !C * D_N * X)	-0.00086	-0.00088	-0.00087
	(A * !C * !D_N * X)	0.00124	0.00126	0.00124
	(A * !C * !D_N * X)	-0.00108	-0.00108	-0.00108
	(!A * C * D_N * X)	0.00143	0.00128	0.00128
	(!A * C * D_N * X)	-0.00138	-0.00154	-0.00155
	(!A * C * !D_N * X)	0.00124	0.00123	0.00124
	(!A * C * !D_N * X)	-0.00156	-0.00158	-0.00158
	(!A * !C * !D_N * X)	0.00131	0.00126	0.00124
	(!A * !C * !D_N * X)	-0.00136	-0.00154	-0.00153

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00191	0.00196	0.00184
	(A * C * D_N * X)	-0.00219	-0.00220	-0.00220
	(A * C * !D_N * X)	0.00177	0.00178	0.00176
	(A * C * !D_N * X)	-0.00233	-0.00235	-0.00234
	(A * !C * D_N * X)	0.00177	0.00179	0.00178
	(A * !C * D_N * X)	-0.00184	-0.00187	-0.00185
	(A * !C * !D_N * X)	0.00176	0.00178	0.00176
	(A * !C * !D_N * X)	-0.00220	-0.00222	-0.00221
	(!A * C * D_N * X)	0.00205	0.00177	0.00176
	(!A * C * D_N * X)	-0.00287	-0.00323	-0.00322
	(!A * C * !D_N * X)	0.00176	0.00175	0.00175
	(!A * C * !D_N * X)	-0.00314	-0.00325	-0.00323
	(!A * !C * !D_N * X)	0.00190	0.00176	0.00175
	(!A * !C * !D_N * X)	-0.00278	-0.00313	-0.00312

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)**	-0.00114	-0.00114	-0.00114
	(A * C * D_N * X)	0.00103	0.00104	0.00103
	(A * C * !D_N * X)	-0.00114	-0.00115	-0.00114
	(A * C * !D_N * X)	0.00106	0.00107	0.00107
	(A * !C * D_N * X)	-0.00110	-0.00110	-0.00109
	(A * !C * D_N * X)	0.00090	0.00091	0.00091
	(A * !C * !D_N * X)	-0.00114	-0.00114	-0.00114
	(A * !C * !D_N * X)	0.00101	0.00101	0.00101
	(!A * C * D_N * X)	-0.00113	-0.00113	-0.00113
	(!A * C * D_N * X)	0.00152	0.00152	0.00153
	(!A * C * !D_N * X)	-0.00113	-0.00114	-0.00113
	(!A * C * !D_N * X)	0.00151	0.00153	0.00152
	(!A * !C * !D_N * X)	-0.00113	-0.00114	-0.00113
	(!A * !C * !D_N * X)	0.00147	0.00148	0.00147
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00128	-0.00128	-0.00128
	(A * C * D_N * X)	0.00104	0.00104	0.00104
	(A * C * !D_N * X)	-0.00123	-0.00124	-0.00124
	(A * C * !D_N * X)	0.00112	0.00113	0.00112
	(A * !C * D_N * X)	-0.00125	-0.00125	-0.00124
	(A * !C * D_N * X)	0.00091	0.00091	0.00091
	(A * !C * !D_N * X)	-0.00124	-0.00124	-0.00124
	(A * !C * !D_N * X)	0.00108	0.00108	0.00108
	(!A * C * D_N * X)	-0.00127	-0.00128	-0.00127
	(!A * C * D_N * X)	0.00154	0.00155	0.00155
	(!A * C * !D_N * X)	-0.00124	-0.00123	-0.00124
	(!A * C * !D_N * X)	0.00159	0.00159	0.00158
	(!A * !C * !D_N * X)	-0.00123	-0.00124	-0.00123
	(!A * !C * !D_N * X)	0.00153	0.00154	0.00153

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00179	-0.00179	-0.00179
	(A * C * D_N * X)	0.00219	0.00220	0.00220
	(A * C * !D_N * X)	-0.00175	-0.00176	-0.00176
	(A * C * !D_N * X)	0.00233	0.00235	0.00234
	(A * !C * D_N * X)	-0.00173	-0.00174	-0.00172
	(A * !C * D_N * X)	0.00190	0.00192	0.00191
	(A * !C * !D_N * X)	-0.00175	-0.00176	-0.00175
	(A * !C * !D_N * X)	0.00220	0.00222	0.00221
	(!A * C * D_N * X)	-0.00176	-0.00177	-0.00176
	(!A * C * D_N * X)	0.00321	0.00323	0.00322
	(!A * C * !D_N * X)	-0.00175	-0.00175	-0.00175
	(!A * C * !D_N * X)	0.00323	0.00325	0.00323
	(!A * !C * !D_N * X)	-0.00174	-0.00175	-0.00173
	(!A * !C * !D_N * X)	0.00312	0.00313	0.00312

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)	0.00136	0.00138	0.00136
	(B * D_N * X)	-0.00084	-0.00085	-0.00085
	(B * !D_N * X)	0.00135	0.00137	0.00129
	(B * !D_N * X)	-0.00110	-0.00111	-0.00111
	(A * !B * D_N * X)	0.00137	0.00139	0.00136
	(A * !B * D_N * X)	-0.00083	-0.00085	-0.00084
	(A * !B * !D_N * X)	0.00140	0.00130	0.00126
	(A * !B * !D_N * X)	-0.00110	-0.00116	-0.00115
	(!A * !B * !D_N * X)	0.00156	0.00128	0.00124
	(!A * !B * !D_N * X)	-0.00131	-0.00162	-0.00164

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00150	0.00153	0.00150
	(B * D_N * X)	-0.00086	-0.00088	-0.00087
	(B * !D_N * X)	0.00131	0.00134	0.00126
	(B * !D_N * X)	-0.00130	-0.00131	-0.00131
	(A * !B * D_N * X)	0.00151	0.00154	0.00150
	(A * !B * D_N * X)	-0.00086	-0.00087	-0.00087
	(A * !B * !D_N * X)	0.00137	0.00127	0.00123
	(A * !B * !D_N * X)	-0.00131	-0.00134	-0.00133
	(!A * !B * !D_N * X)	0.00156	0.00126	0.00123
	(!A * !B * !D_N * X)	-0.00151	-0.00180	-0.00182
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00220	0.00223	0.00220
	(B * D_N * X)	-0.00178	-0.00180	-0.00179
	(B * !D_N * X)	0.00197	0.00194	0.00182
	(B * !D_N * X)	-0.00258	-0.00260	-0.00259
	(A * !B * D_N * X)	0.00222	0.00224	0.00221
	(A * !B * D_N * X)	-0.00177	-0.00179	-0.00178
	(A * !B * !D_N * X)	0.00207	0.00185	0.00179
	(A * !B * !D_N * X)	-0.00256	-0.00263	-0.00261
	(!A * !B * !D_N * X)	0.00239	0.00184	0.00178
	(!A * !B * !D_N * X)	-0.00294	-0.00356	-0.00358

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)**	-0.00134	-0.00135	-0.00134
	(B * D_N * X)	0.00087	0.00087	0.00087
	(B * !D_N * X)	-0.00124	-0.00124	-0.00125
	(B * !D_N * X)	0.00110	0.00111	0.00111
	(A * !B * D_N * X)	-0.00129	-0.00130	-0.00133
	(A * !B * D_N * X)	0.00088	0.00089	0.00086
	(A * !B * !D_N * X)	-0.00124	-0.00125	-0.00125
	(A * !B * !D_N * X)	0.00114	0.00116	0.00115
	(!A * !B * !D_N * X)	-0.00123	-0.00123	-0.00123
	(!A * !B * !D_N * X)	0.00163	0.00164	0.00165
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00148	-0.00149	-0.00148
	(B * D_N * X)	0.00090	0.00090	0.00090
	(B * !D_N * X)	-0.00122	-0.00122	-0.00122
	(B * !D_N * X)	0.00130	0.00131	0.00131
	(A * !B * D_N * X)	-0.00143	-0.00144	-0.00147
	(A * !B * D_N * X)	0.00090	0.00090	0.00089
	(A * !B * !D_N * X)	-0.00123	-0.00123	-0.00122
	(A * !B * !D_N * X)	0.00134	0.00134	0.00133
	(!A * !B * !D_N * X)	-0.00122	-0.00122	-0.00121
	(!A * !B * !D_N * X)	0.00182	0.00183	0.00183
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00215	-0.00216	-0.00217
	(B * D_N * X)	0.00184	0.00185	0.00185
	(B * !D_N * X)	-0.00178	-0.00179	-0.00178
	(B * !D_N * X)	0.00258	0.00260	0.00259
	(A * !B * D_N * X)	-0.00202	-0.00204	-0.00215
	(A * !B * D_N * X)	0.00188	0.00189	0.00183
	(A * !B * !D_N * X)	-0.00178	-0.00179	-0.00178
	(A * !B * !D_N * X)	0.00261	0.00263	0.00261
	(!A * !B * !D_N * X)	-0.00177	-0.00177	-0.00175
	(!A * !B * !D_N * X)	0.00360	0.00362	0.00361

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00410	0.00475	0.02884
	(C * X)	0.00065	0.00128	0.02540
	(B * !C * X)	0.00416	0.00482	0.02889
	(B * !C * X)	0.00068	0.00131	0.02541
	(A * !B * !C * X)	0.00426	0.00491	0.02896
	(A * !B * !C * X)	0.00074	0.00137	0.02545
sky130_fd_sc_hs__or4b_2	(C * X)	0.00460	0.00518	0.02871
	(C * X)	0.00107	0.00162	0.02518
	(B * !C * X)	0.00467	0.00525	0.02876
	(B * !C * X)	0.00110	0.00165	0.02520
	(A * !B * !C * X)	0.00476	0.00534	0.02883
	(A * !B * !C * X)	0.00114	0.00170	0.02523
sky130_fd_sc_hs__or4b_4	(C * X)	0.00546	0.00618	0.03075
	(C * X)	0.00160	0.00230	0.02688
	(B * !C * X)	0.00566	0.00638	0.03089
	(B * !C * X)	0.00168	0.00239	0.02693
	(A * !B * !C * X)	0.00585	0.00657	0.03103
	(A * !B * !C * X)	0.00179	0.00248	0.02700

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00095	0.00230	0.02672
	(C * X)	0.00438	0.00575	0.03017
	(B * !C * X)	0.00095	0.00230	0.02672
	(B * !C * X)	0.00439	0.00576	0.03017
	(A * !B * !C * X)	0.00095	0.00231	0.02671
	(A * !B * !C * X)	0.00439	0.00576	0.03017
sky130_fd_sc_hs__or4b_2	(C * X)	0.00114	0.00242	0.02639
	(C * X)	0.00467	0.00596	0.02993
	(B * !C * X)	0.00114	0.00242	0.02639
	(B * !C * X)	0.00467	0.00597	0.02993
	(A * !B * !C * X)	0.00114	0.00242	0.02639
	(A * !B * !C * X)	0.00467	0.00597	0.02993
sky130_fd_sc_hs__or4b_4	(C * X)	0.00174	0.00289	0.02780
	(C * X)	0.00560	0.00676	0.03166
	(B * !C * X)	0.00174	0.00289	0.02780
	(B * !C * X)	0.00562	0.00678	0.03168
	(A * !B * !C * X)	0.00174	0.00289	0.02780
	(A * !B * !C * X)	0.00562	0.00678	0.03168

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00252	0.00240	0.00245	0.00238	1.04471
sky130_fd_sc_hs__or4_2	0.00263	0.00259	0.00270	0.00268	2.08776
sky130_fd_sc_hs__or4_4	0.00383	0.00443	0.00448	0.00422	3.99619

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.02846	0.14085
sky130_fd_sc_hs__or4_2	0.00000	0.03880	0.14705
sky130_fd_sc_hs__or4_4	0.00000	0.07492	0.29409

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)	0.07276	0.63855	6.41538
	B->X (RR)	0.07328	0.63029	6.34757
	C->X (RR)	0.07056	0.61263	6.27083
	D->X (RR)	0.06435	0.58922	6.23773
sky130_fd_sc_hs__or4_2	A->X (RR)	0.06875	0.52344	6.25982
	B->X (RR)	0.06883	0.51589	6.19721
	C->X (RR)	0.06708	0.50323	6.13298
	D->X (RR)	0.06256	0.48681	6.11225
sky130_fd_sc_hs__or4_4	A->X (RR)	0.09018	0.52372	6.71448
	B->X (RR)	0.09373	0.51826	6.66558
	C->X (RR)	0.08616	0.49098	6.55397
	D->X (RR)	0.07869	0.46877	6.53387

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.29263	0.77081	4.80187
	B->X (FF)	0.27313	0.75885	4.97999
	C->X (FF)	0.23944	0.74006	5.03964
	D->X (FF)	0.18518	0.69672	4.92604
sky130_fd_sc_hs__or4_2	A->X (FF)	0.35697	0.82689	5.11659
	B->X (FF)	0.33727	0.81797	5.31568
	C->X (FF)	0.30817	0.80672	5.41006
	D->X (FF)	0.25745	0.76803	5.29905
sky130_fd_sc_hs__or4_4	A->X (FF)	0.35478	0.79321	4.96007
	B->X (FF)	0.34259	0.78330	5.05018
	C->X (FF)	0.29538	0.74996	5.15788
	D->X (FF)	0.22936	0.69529	5.01825

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01217	0.01198	0.02004
	A	0.00555	0.00537	0.01358
	B	0.01053	0.01076	0.01910
	B	0.00483	0.00506	0.01359
	C	0.00884	0.00916	0.01742
	C	0.00389	0.00420	0.01270
	D	0.00722	0.00768	0.01913
	D	0.00298	0.00345	0.01516
sky130_fd_sc_hs__or4_2	A	0.01474	0.01496	0.02505
	A	0.00782	0.00806	0.01869
	B	0.01302	0.01364	0.02397
	B	0.00696	0.00761	0.01855
	C	0.01150	0.01220	0.02227
	C	0.00620	0.00694	0.01762
	D	0.00989	0.01067	0.02425
	D	0.00529	0.00609	0.02033
sky130_fd_sc_hs__or4_4	A	0.02796	0.02870	0.04695
	A	0.01636	0.01714	0.03543
	B	0.02519	0.02546	0.04192
	B	0.01470	0.01503	0.03166
	C	0.02113	0.02215	0.03988
	C	0.01235	0.01346	0.03148
	D	0.01744	0.01882	0.04389
	D	0.01030	0.01181	0.03716

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00358	0.00326	0.01120
	A	0.01029	0.01003	0.01726
	B	0.00362	0.00345	0.01234
	B	0.00937	0.00922	0.01760
	C	0.00359	0.00360	0.01274
	C	0.00857	0.00857	0.01720
	D	0.00349	0.00418	0.01849
	D	0.00773	0.00841	0.02187
sky130_fd_sc_hs__or4_2	A	0.00666	0.00594	0.01497
	A	0.01367	0.01305	0.02119
	B	0.00669	0.00601	0.01578
	B	0.01279	0.01227	0.02142
	C	0.00665	0.00611	0.01719
	C	0.01197	0.01159	0.02087
	D	0.00659	0.00673	0.02120
	D	0.01118	0.01139	0.02577
sky130_fd_sc_hs__or4_4	A	0.01351	0.01248	0.02747
	A	0.02535	0.02458	0.03832
	B	0.01351	0.01229	0.02724
	B	0.02415	0.02317	0.03609
	C	0.01353	0.01241	0.02805
	C	0.02234	0.02133	0.03665
	D	0.01307	0.01341	0.03876
	D	0.02022	0.02054	0.04508

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00129	0.00130	0.00128
	(B * D * X)	-0.00154	-0.00159	-0.00158
	(B * C * !D * X)	0.00129	0.00130	0.00128
	(B * C * !D * X)	-0.00154	-0.00159	-0.00158
	(B * !C * !D * X)	0.00129	0.00130	0.00128
	(B * !C * !D * X)	-0.00152	-0.00158	-0.00158
	(!B * C * D * X)	0.00128	0.00129	0.00128
	(!B * C * D * X)	-0.00142	-0.00154	-0.00153
	(!B * C * !D * X)	0.00128	0.00129	0.00128
	(!B * C * !D * X)	-0.00143	-0.00154	-0.00153
	(!B * !C * D * X)	0.00129	0.00129	0.00128
	(!B * !C * D * X)	-0.00139	-0.00151	-0.00151
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00141	0.00142	0.00141
	(B * D * X)	-0.00157	-0.00161	-0.00161
	(B * C * !D * X)	0.00140	0.00142	0.00141
	(B * C * !D * X)	-0.00157	-0.00161	-0.00161
	(B * !C * !D * X)	0.00141	0.00142	0.00141
	(B * !C * !D * X)	-0.00154	-0.00161	-0.00161
	(!B * C * D * X)	0.00140	0.00142	0.00141
	(!B * C * D * X)	-0.00145	-0.00156	-0.00155
	(!B * C * !D * X)	0.00140	0.00142	0.00141
	(!B * C * !D * X)	-0.00144	-0.00156	-0.00155
	(!B * !C * D * X)	0.00141	0.00142	0.00141
	(!B * !C * D * X)	-0.00141	-0.00153	-0.00153

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00143	0.00144	0.00142
	(B * D * X)	-0.00310	-0.00317	-0.00318
	(B * C * !D * X)	0.00143	0.00144	0.00142
	(B * C * !D * X)	-0.00309	-0.00317	-0.00318
	(B * !C * !D * X)	0.00144	0.00144	0.00142
	(B * !C * !D * X)	-0.00302	-0.00317	-0.00317
	(!B * C * D * X)	0.00143	0.00144	0.00142
	(!B * C * D * X)	-0.00283	-0.00308	-0.00306
	(!B * C * !D * X)	0.00143	0.00144	0.00142
	(!B * C * !D * X)	-0.00283	-0.00308	-0.00306
	(!B * !C * D * X)	0.00146	0.00144	0.00142
	(!B * !C * D * X)	-0.00277	-0.00302	-0.00301

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00128	-0.00128	-0.00128
	(B * D * X)	0.00157	0.00159	0.00158
	(B * C * !D * X)	-0.00128	-0.00128	-0.00128
	(B * C * !D * X)	0.00157	0.00159	0.00158
	(B * !C * !D * X)	-0.00128	-0.00128	-0.00128
	(B * !C * !D * X)	0.00158	0.00158	0.00158
	(!B * C * D * X)	-0.00128	-0.00128	-0.00128
	(!B * C * D * X)	0.00152	0.00154	0.00153
	(!B * C * !D * X)	-0.00128	-0.00129	-0.00128
	(!B * C * !D * X)	0.00152	0.00154	0.00153
	(!B * !C * D * X)	-0.00128	-0.00128	-0.00128
	(!B * !C * D * X)	0.00150	0.00151	0.00151

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00140	-0.00141	-0.00140
	(B * D * X)	0.00161	0.00161	0.00161
	(B * C * !D * X)	-0.00140	-0.00141	-0.00140
	(B * C * !D * X)	0.00161	0.00161	0.00161
	(B * !C * !D * X)	-0.00140	-0.00140	-0.00140
	(B * !C * !D * X)	0.00161	0.00161	0.00161
	(!B * C * D * X)	-0.00140	-0.00141	-0.00140
	(!B * C * D * X)	0.00155	0.00156	0.00155
	(!B * C * !D * X)	-0.00140	-0.00141	-0.00140
	(!B * C * !D * X)	0.00154	0.00156	0.00155
	(!B * !C * D * X)	-0.00140	-0.00140	-0.00140
	(!B * !C * D * X)	0.00152	0.00153	0.00153
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00141	-0.00141	-0.00141
	(B * D * X)	0.00315	0.00317	0.00318
	(B * C * !D * X)	-0.00141	-0.00141	-0.00142
	(B * C * !D * X)	0.00315	0.00317	0.00318
	(B * !C * !D * X)	-0.00141	-0.00142	-0.00141
	(B * !C * !D * X)	0.00316	0.00317	0.00317
	(!B * C * D * X)	-0.00142	-0.00142	-0.00142
	(!B * C * D * X)	0.00306	0.00308	0.00306
	(!B * C * !D * X)	-0.00142	-0.00142	-0.00142
	(!B * C * !D * X)	0.00306	0.00308	0.00306
	(!B * !C * D * X)	-0.00141	-0.00142	-0.00141
	(!B * !C * D * X)	0.00301	0.00302	0.00301

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)**	0.00114	0.00116	0.00114
	(A * C * D * X)	-0.00112	-0.00112	-0.00112
	(A * C * !D * X)	0.00121	0.00123	0.00116
	(A * C * !D * X)	-0.00107	-0.00108	-0.00108
	(A * !C * D * X)	0.00114	0.00115	0.00114
	(A * !C * D * X)	-0.00104	-0.00105	-0.00105
	(A * !C * !D * X)	0.00114	0.00116	0.00114
	(A * !C * !D * X)	-0.00090	-0.00090	-0.00089
	(!A * C * D * X)	0.00114	0.00115	0.00113
	(!A * C * D * X)	-0.00152	-0.00157	-0.00156
	(!A * C * !D * X)	0.00126	0.00115	0.00113
	(!A * C * !D * X)	-0.00139	-0.00156	-0.00156
	(!A * !C * D * X)	0.00121	0.00115	0.00113
	(!A * !C * D * X)	-0.00131	-0.00151	-0.00150
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00126	0.00127	0.00126
	(A * C * D * X)	-0.00118	-0.00118	-0.00118
	(A * C * !D * X)	0.00135	0.00136	0.00128
	(A * C * !D * X)	-0.00114	-0.00114	-0.00114
	(A * !C * D * X)	0.00126	0.00127	0.00126
	(A * !C * D * X)	-0.00112	-0.00112	-0.00111
	(A * !C * !D * X)	0.00125	0.00128	0.00125
	(A * !C * !D * X)	-0.00096	-0.00098	-0.00096
	(!A * C * D * X)	0.00126	0.00127	0.00125
	(!A * C * D * X)	-0.00161	-0.00164	-0.00164
	(!A * C * !D * X)	0.00139	0.00127	0.00125
	(!A * C * !D * X)	-0.00147	-0.00165	-0.00164
	(!A * !C * D * X)	0.00133	0.00127	0.00126
	(!A * !C * D * X)	-0.00138	-0.00158	-0.00158

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00184	0.00185	0.00183
	(A * C * D * X)	-0.00230	-0.00232	-0.00231
	(A * C * !D * X)	0.00190	0.00194	0.00185
	(A * C * !D * X)	-0.00220	-0.00221	-0.00220
	(A * !C * D * X)	0.00181	0.00184	0.00182
	(A * !C * D * X)	-0.00216	-0.00218	-0.00216
	(A * !C * !D * X)	0.00182	0.00183	0.00181
	(A * !C * !D * X)	-0.00187	-0.00187	-0.00185
	(!A * C * D * X)	0.00182	0.00180	0.00180
	(!A * C * D * X)	-0.00309	-0.00322	-0.00321
	(!A * C * !D * X)	0.00201	0.00181	0.00180
	(!A * C * !D * X)	-0.00288	-0.00322	-0.00321
	(!A * !C * D * X)	0.00195	0.00181	0.00180
	(!A * !C * D * X)	-0.00273	-0.00310	-0.00309

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)**	-0.00114	-0.00114	-0.00114
	(A * C * D * X)	0.00112	0.00112	0.00112
	(A * C * !D * X)	-0.00114	-0.00114	-0.00114
	(A * C * !D * X)	0.00107	0.00108	0.00108
	(A * !C * D * X)	-0.00113	-0.00114	-0.00114
	(A * !C * D * X)	0.00104	0.00105	0.00105
	(A * !C * !D * X)	-0.00108	-0.00109	-0.00108
	(A * !C * !D * X)	0.00094	0.00094	0.00094
	(!A * C * D * X)	-0.00113	-0.00114	-0.00113
	(!A * C * D * X)	0.00156	0.00157	0.00156
	(!A * C * !D * X)	-0.00113	-0.00113	-0.00113
	(!A * C * !D * X)	0.00155	0.00156	0.00156
	(!A * !C * D * X)	-0.00113	-0.00113	-0.00113
	(!A * !C * D * X)	0.00150	0.00151	0.00150
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00125	-0.00125	-0.00125
	(A * C * D * X)	0.00118	0.00118	0.00118
	(A * C * !D * X)	-0.00125	-0.00125	-0.00125
	(A * C * !D * X)	0.00114	0.00114	0.00114
	(A * !C * D * X)	-0.00125	-0.00126	-0.00125
	(A * !C * D * X)	0.00112	0.00112	0.00111
	(A * !C * !D * X)	-0.00120	-0.00121	-0.00119
	(A * !C * !D * X)	0.00101	0.00102	0.00101
	(!A * C * D * X)	-0.00125	-0.00126	-0.00125
	(!A * C * D * X)	0.00163	0.00164	0.00164
	(!A * C * !D * X)	-0.00125	-0.00126	-0.00125
	(!A * C * !D * X)	0.00163	0.00165	0.00164
	(!A * !C * D * X)	-0.00125	-0.00125	-0.00125
	(!A * !C * D * X)	0.00158	0.00158	0.00158

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00182	-0.00183	-0.00182
	(A * C * D * X)	0.00230	0.00232	0.00231
	(A * C * !D * X)	-0.00181	-0.00182	-0.00182
	(A * C * !D * X)	0.00220	0.00221	0.00220
	(A * !C * D * X)	-0.00180	-0.00181	-0.00181
	(A * !C * D * X)	0.00216	0.00218	0.00216
	(A * !C * !D * X)	-0.00177	-0.00178	-0.00177
	(A * !C * !D * X)	0.00189	0.00191	0.00190
	(!A * C * D * X)	-0.00181	-0.00180	-0.00180
	(!A * C * D * X)	0.00320	0.00322	0.00321
	(!A * C * !D * X)	-0.00181	-0.00181	-0.00180
	(!A * C * !D * X)	0.00322	0.00322	0.00321
	(!A * !C * D * X)	-0.00180	-0.00180	-0.00179
	(!A * !C * D * X)	0.00308	0.00310	0.00309

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00126	0.00127	0.00120
	(B * D * X)	-0.00103	-0.00104	-0.00103
	(B * !D * X)	0.00116	0.00118	0.00116
	(B * !D * X)	-0.00087	-0.00089	-0.00088
	(A * !B * D * X)	0.00132	0.00120	0.00117
	(A * !B * D * X)	-0.00102	-0.00106	-0.00107
	(A * !B * !D * X)	0.00117	0.00119	0.00116
	(A * !B * !D * X)	-0.00086	-0.00088	-0.00087
	(!A * !B * D * X)	0.00149	0.00119	0.00116
	(!A * !B * D * X)	-0.00124	-0.00154	-0.00156

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00145	0.00146	0.00138
	(B * D * X)	-0.00103	-0.00103	-0.00103
	(B * !D * X)	0.00134	0.00137	0.00134
	(B * !D * X)	-0.00088	-0.00090	-0.00089
	(A * !B * D * X)	0.00152	0.00139	0.00134
	(A * !B * D * X)	-0.00103	-0.00108	-0.00107
	(A * !B * !D * X)	0.00136	0.00138	0.00134
	(A * !B * !D * X)	-0.00087	-0.00089	-0.00088
	(!A * !B * D * X)	0.00167	0.00138	0.00134
	(!A * !B * D * X)	-0.00123	-0.00155	-0.00158
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00204	0.00200	0.00190
	(B * D * X)	-0.00219	-0.00220	-0.00218
	(B * !D * X)	0.00186	0.00188	0.00185
	(B * !D * X)	-0.00183	-0.00184	-0.00183
	(A * !B * D * X)	0.00213	0.00192	0.00186
	(A * !B * D * X)	-0.00215	-0.00223	-0.00221
	(A * !B * !D * X)	0.00187	0.00189	0.00186
	(A * !B * !D * X)	-0.00181	-0.00182	-0.00182
	(!A * !B * D * X)	0.00248	0.00190	0.00184
	(!A * !B * D * X)	-0.00259	-0.00319	-0.00323

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00116	-0.00116	-0.00116
	(B * D * X)	0.00103	0.00104	0.00103
	(B * !D * X)	-0.00115	-0.00115	-0.00114
	(B * !D * X)	0.00090	0.00090	0.00090
	(A * !B * D * X)	-0.00116	-0.00115	-0.00116
	(A * !B * D * X)	0.00107	0.00106	0.00107
	(A * !B * !D * X)	-0.00110	-0.00111	-0.00114
	(A * !B * !D * X)	0.00092	0.00092	0.00089
	(!A * !B * D * X)	-0.00115	-0.00115	-0.00114
	(!A * !B * D * X)	0.00155	0.00157	0.00156
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00133	-0.00133	-0.00134
	(B * D * X)	0.00103	0.00103	0.00103
	(B * !D * X)	-0.00133	-0.00134	-0.00132
	(B * !D * X)	0.00091	0.00091	0.00091
	(A * !B * D * X)	-0.00133	-0.00134	-0.00133
	(A * !B * D * X)	0.00107	0.00108	0.00107
	(A * !B * !D * X)	-0.00129	-0.00130	-0.00132
	(A * !B * !D * X)	0.00092	0.00092	0.00090
	(!A * !B * D * X)	-0.00133	-0.00134	-0.00132
	(!A * !B * D * X)	0.00157	0.00159	0.00158
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00186	-0.00187	-0.00186
	(B * D * X)	0.00219	0.00220	0.00218
	(B * !D * X)	-0.00182	-0.00183	-0.00181
	(B * !D * X)	0.00188	0.00189	0.00188
	(A * !B * D * X)	-0.00185	-0.00186	-0.00185
	(A * !B * D * X)	0.00222	0.00223	0.00221
	(A * !B * !D * X)	-0.00171	-0.00172	-0.00180
	(A * !B * !D * X)	0.00192	0.00192	0.00186
	(!A * !B * D * X)	-0.00183	-0.00183	-0.00181
	(!A * !B * D * X)	0.00322	0.00324	0.00323

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00129	0.00131	0.00129
	(C * X)	-0.00082	-0.00084	-0.00083
	(B * !C * X)	0.00129	0.00131	0.00129
	(B * !C * X)	-0.00082	-0.00084	-0.00082
	(A * !B * !C * X)	0.00129	0.00131	0.00129
	(A * !B * !C * X)	-0.00082	-0.00084	-0.00082
sky130_fd_sc_hs__or4_2	(C * X)	0.00152	0.00155	0.00153
	(C * X)	-0.00082	-0.00083	-0.00082
	(B * !C * X)	0.00152	0.00155	0.00153
	(B * !C * X)	-0.00082	-0.00083	-0.00082
	(A * !B * !C * X)	0.00152	0.00155	0.00153
	(A * !B * !C * X)	-0.00082	-0.00083	-0.00082
sky130_fd_sc_hs__or4_4	(C * X)	0.00209	0.00211	0.00210
	(C * X)	-0.00160	-0.00162	-0.00161
	(B * !C * X)	0.00209	0.00211	0.00210
	(B * !C * X)	-0.00160	-0.00161	-0.00160
	(A * !B * !C * X)	0.00210	0.00211	0.00210
	(A * !B * !C * X)	-0.00160	-0.00161	-0.00160

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00124	-0.00125	-0.00128
	(C * X)	0.00087	0.00087	0.00084
	(B * !C * X)	-0.00117	-0.00118	-0.00127
	(B * !C * X)	0.00091	0.00091	0.00084
	(A * !B * !C * X)	-0.00107	-0.00108	-0.00125
	(A * !B * !C * X)	0.00097	0.00098	0.00086
sky130_fd_sc_hs__or4_2	(C * X)	-0.00148	-0.00149	-0.00152
	(C * X)	0.00087	0.00087	0.00083
	(B * !C * X)	-0.00142	-0.00143	-0.00151
	(B * !C * X)	0.00090	0.00090	0.00083
	(A * !B * !C * X)	-0.00132	-0.00133	-0.00148
	(A * !B * !C * X)	0.00096	0.00097	0.00085
sky130_fd_sc_hs__or4_4	(C * X)	-0.00198	-0.00199	-0.00209
	(C * X)	0.00172	0.00172	0.00164
	(B * !C * X)	-0.00179	-0.00180	-0.00205
	(B * !C * X)	0.00182	0.00183	0.00165
	(A * !B * !C * X)	-0.00160	-0.00161	-0.00200
	(A * !B * !C * X)	0.00194	0.00194	0.00168

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00195	0.00175	0.00412	0.00180	0.00551	0.00296	1.07178	1.05894
sky130_fd_sc_hs__sdfbbn_2	0.00197	0.00177	0.00417	0.00167	0.00542	0.00292	2.13148	2.13925

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	1.04772	1.89091
sky130_fd_sc_hs__sdfbbn_2	0.00000	1.01375	1.95488

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)	0.40401	1.10523	8.75298
	SET_B->Q (FR)	0.19438	0.92843	8.71716
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.46009	1.04659	8.74605
	SET_B->Q (FR)	0.23112	0.86961	8.75502

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)	0.40754	0.84626	4.66333
	RESET_B->Q (FF)	0.25449	0.72258	4.57778
	SET_B->Q (RF)	0.15115	0.43767	2.40280
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.43794	0.83937	4.69744
	RESET_B->Q (FF)	0.28868	0.72094	4.63774
	SET_B->Q (RF)	0.18465	0.45026	2.55571

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)	0.37071	1.08110	8.67268
	RESET_B->Q_N (FR)	0.21849	0.96267	8.59923
	SET_B->Q_N (RR)	0.11515	0.68232	6.62826
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.36767	0.97840	8.62134
	RESET_B->Q_N (FR)	0.22002	0.86210	8.56945
	SET_B->Q_N (RR)	0.11639	0.59552	6.65764

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)	0.34103	0.85574	4.76725
	SET_B->Q_N (FF)	0.13820	0.67996	4.96323
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.36369	0.85480	4.76367
	SET_B->Q_N (FF)	0.14575	0.66112	5.01562

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)	-0.02758	0.02607	1.74185
	setup	CLK_N (F)	0.16320	0.08578	-1.71848
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03362	0.02001	1.71937
	setup	CLK_N (F)	0.16538	0.08945	-1.69808

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)	-0.22179	-0.26393	-0.60811
	setup	CLK_N (F)	0.25319	0.29098	0.62532
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.24320	-0.28456	-0.67267
	setup	CLK_N (F)	0.27202	0.31079	0.68922

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)	-0.02758	0.02607	1.74185
	setup	CLK_N (F)	0.16320	0.08578	-1.71848
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03362	0.02001	1.71937
	setup	CLK_N (F)	0.16538	0.08945	-1.69808

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)	-0.22179	-0.26393	-0.60811
	setup	CLK_N (F)	0.25319	0.29098	0.62532
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.24320	-0.28456	-0.67267
	setup	CLK_N (F)	0.27202	0.31079	0.68922

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)	-0.04846	0.01400	1.66454
	setup	CLK_N (F)	0.18140	0.10354	-1.62081
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05424	0.00854	1.65091
	setup	CLK_N (F)	0.18443	0.10540	-1.60425

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)	-0.27820	-0.31623	-0.78942
	setup	CLK_N (F)	0.32287	0.35671	0.85138
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.30254	-0.33938	-0.85218
	setup	CLK_N (F)	0.34435	0.38099	0.91235

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)	-0.04846	0.01400	1.66454
	hold	CLK_N (F)	-0.05031	0.01000	1.64159
	setup	CLK_N (F)	0.18023	0.09862	-1.64348
	setup	CLK_N (F)	0.18140	0.10354	-1.62081
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.05424	0.00854	1.65091
	hold	CLK_N (F)	-0.05424	0.00446	1.62738
	setup	CLK_N (F)	0.18232	0.10092	-1.62950
	setup	CLK_N (F)	0.18443	0.10540	-1.60425

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)	-0.28790	-0.33015	-0.83388
	hold	CLK_N (F)	-0.27820	-0.31623	-0.78942
	setup	CLK_N (F)	0.32287	0.35671	0.85138
	setup	CLK_N (F)	0.31476	0.34883	0.80695
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.31017	-0.35245	-0.89860
	hold	CLK_N (F)	-0.30254	-0.33938	-0.85218
	setup	CLK_N (F)	0.34435	0.38099	0.91235
	setup	CLK_N (F)	0.33630	0.37392	0.86488

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)	-0.03956	0.01000	1.63024
	setup	CLK_N (F)	0.31410	0.24428	-1.57490
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.04262	0.00422	1.61768
	setup	CLK_N (F)	0.33802	0.27194	-1.54857

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)	-0.09052	-0.08083	0.04456
	setup	CLK_N (F)	0.25723	0.28698	0.67157
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.09484	-0.08412	0.03422
	setup	CLK_N (F)	0.28023	0.30724	0.73240

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)	-0.28286	-0.21900	1.59243
	hold	CLK_N (F)	-0.03956	0.01000	1.63024
	setup	CLK_N (F)	0.31410	0.24428	-1.57490
	setup	CLK_N (F)	0.16980	0.10409	-1.61016
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.30551	-0.24174	1.56230
	hold	CLK_N (F)	-0.04262	0.00422	1.61768
	setup	CLK_N (F)	0.33802	0.27194	-1.54857
	setup	CLK_N (F)	0.17278	0.10639	-1.59175

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)	-0.09052	-0.08083	0.04456
	hold	CLK_N (F)	-0.22734	-0.25794	-0.65699
	setup	CLK_N (F)	0.22392	0.19244	-0.03071
	setup	CLK_N (F)	0.25723	0.28698	0.67157
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.09484	-0.08412	0.03422
	hold	CLK_N (F)	-0.24743	-0.28195	-0.71957
	setup	CLK_N (F)	0.22778	0.19646	-0.01960
	setup	CLK_N (F)	0.28023	0.30724	0.73240

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)	0.11750	0.02796	-1.94619
	removal	CLK_N (F)	0.02228	0.09472	2.00316
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.11564	0.02435	-1.95077
	removal	CLK_N (F)	0.02524	0.09736	2.01547

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)	0.11504	0.02796	-1.94628
	recovery	CLK_N (F)	0.11750	0.02790	-1.94619
	recovery	CLK_N (F)	0.11745	0.02791	-1.94619
	removal	CLK_N (F)	0.02003	0.09472	2.00316
	removal	CLK_N (F)	0.02228	0.09472	2.00316
	removal	CLK_N (F)	0.02228	0.09472	2.00316
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.11554	0.02430	-1.95077
	recovery	CLK_N (F)	0.11564	0.02433	-1.95080
	recovery	CLK_N (F)	0.11557	0.02435	-1.95083
	removal	CLK_N (F)	0.02270	0.09736	2.01547
	removal	CLK_N (F)	0.02524	0.09736	2.01547
	removal	CLK_N (F)	0.02524	0.09736	2.01547

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 ()	0.21544	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.19012	0.67627	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.22051	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.19519	0.67627	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)	-0.03010	-0.13270	-1.65558
	removal	CLK_N (F)	0.04614	0.14935	2.16192
	hold	RESET_B (R)	-0.05613	-0.10308	-0.41589
	setup	RESET_B (R)	0.11674	0.15127	0.82381
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.02653	-0.12883	-1.40051
	removal	CLK_N (F)	0.04158	0.14266	2.13920
	hold	RESET_B (R)	-0.07709	-0.12801	-0.53539
	setup	RESET_B (R)	0.11892	0.16596	1.13982

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)	-0.03010	-0.13302	-1.65728
	recovery	CLK_N (F)	-0.03021	-0.13290	-1.65558
	recovery	CLK_N (F)	-0.03040	-0.13270	-1.65603
	removal	CLK_N (F)	0.04557	0.14935	2.15792
	removal	CLK_N (F)	0.04557	0.14935	2.15792
	removal	CLK_N (F)	0.04614	0.14935	2.16192
	hold	RESET_B (R)	-0.05613	-0.10308	-0.41589
	hold	RESET_B (R)	-0.05725	-0.10341	-0.41715
	setup	RESET_B (R)	0.11674	0.15127	0.82013
	setup	RESET_B (R)	0.08875	0.13183	0.82381
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.02653	-0.12883	-1.40267
	recovery	CLK_N (F)	-0.02653	-0.12883	-1.40289
	recovery	CLK_N (F)	-0.02654	-0.12883	-1.40051
	removal	CLK_N (F)	0.04158	0.14266	2.13814
	removal	CLK_N (F)	0.04158	0.14266	2.13814
	removal	CLK_N (F)	0.04158	0.14266	2.13920
	hold	RESET_B (R)	-0.07709	-0.13392	-0.53677
	hold	RESET_B (R)	-0.07720	-0.12801	-0.53539
	setup	RESET_B (R)	0.11892	0.16596	1.13079
	setup	RESET_B (R)	0.09375	0.15765	1.13982

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 ()	0.15721	0.67627	16.50020
	min_pulse_width	SET_B ()	0.13695	0.67627	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.17746	0.67627	16.50020
	min_pulse_width	SET_B ()	0.15721	0.67627	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 ()	0.20278	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.14961	0.67627	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.20532	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.15721	0.67627	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 ()	0.18506	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.21544	0.67627	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.20532	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.21798	0.67627	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	0.01280	0.01354	0.02574
	CLK_N	0.01488	0.01562	0.02742
	SET_B	0.01346	0.01445	0.03746
	SET_B	0.01734	0.01834	0.04095
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01544	0.01616	0.02888
	CLK_N	0.01743	0.01819	0.03014
	SET_B	0.01603	0.01715	0.04061
	SET_B	0.01982	0.02094	0.04355

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01362	0.01441	0.02591
	CLK_N	0.01542	0.01624	0.02751
	RESET_B	0.01653	0.01692	0.02434
	RESET_B	0.01765	0.01804	0.02539
	SET_B	0.01737	0.01733	0.03645
	SET_B	0.01347	0.01341	0.03249
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01606	0.01708	0.02910
	CLK_N	0.01790	0.01898	0.03035
	RESET_B	0.01935	0.02003	0.02797
	RESET_B	0.02051	0.02119	0.02875
	SET_B	0.02011	0.02035	0.03895
	SET_B	0.01630	0.01651	0.03510

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01364	0.01445	0.02620
	CLK_N	0.01544	0.01626	0.02776
	RESET_B	0.01655	0.01694	0.02447
	RESET_B	0.01767	0.01806	0.02560
	SET_B	0.01739	0.01739	0.03651
	SET_B	0.01349	0.01343	0.03259
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01608	0.01718	0.02917
	CLK_N	0.01792	0.01902	0.03063
	RESET_B	0.01937	0.02005	0.02775
	RESET_B	0.02053	0.02121	0.02891
	SET_B	0.02013	0.02043	0.03917
	SET_B	0.01631	0.01654	0.03531

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01278	0.01352	0.02535
	CLK_N	0.01486	0.01560	0.02716
	SET_B	0.01341	0.01441	0.03683
	SET_B	0.01729	0.01829	0.04052
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01542	0.01619	0.02829
	CLK_N	0.01741	0.01818	0.02976
	SET_B	0.01599	0.01710	0.03969
	SET_B	0.01977	0.02090	0.04303

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)**	0.00114	0.00114	0.00114
	(CLK_N * SCD * SCE)	-0.00055	-0.00055	-0.00055
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01107	0.01113	0.02316
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00860	0.00865	0.02068
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00765	0.00773	0.01897
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00477	0.00483	0.01607
	(CLK_N * !SCD * SCE)	0.00047	0.00047	0.00046
	(CLK_N * !SCD * SCE)	-0.00134	-0.00136	-0.00138
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00646	0.00655	0.01771
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00360	0.00367	0.01484
	(!CLK_N * SCD * SCE)	0.00115	0.00116	0.00114
	(!CLK_N * SCD * SCE)	-0.00055	-0.00055	-0.00054
	(!CLK_N * !SCE)	0.00430	0.00440	0.01677
	(!CLK_N * !SCE)	0.00144	0.00153	0.01390
	(!CLK_N * !SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK_N * !SCD * SCE)	-0.00134	-0.00137	-0.00139

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00117	0.00118	0.00117
	(CLK_N * SCD * SCE)	-0.00055	-0.00056	-0.00055
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01118	0.01124	0.02316
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00864	0.00868	0.02060
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00780	0.00789	0.01895
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00487	0.00494	0.01600
	(CLK_N * !SCD * SCE)	0.00050	0.00050	0.00049
	(CLK_N * !SCD * SCE)	-0.00134	-0.00136	-0.00138
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00652	0.00660	0.01761
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00361	0.00368	0.01469
	(!CLK_N * SCD * SCE)	0.00117	0.00119	0.00117
	(!CLK_N * SCD * SCE)	-0.00055	-0.00056	-0.00055
	(!CLK_N * !SCE)	0.00425	0.00434	0.01658
	(!CLK_N * !SCE)	0.00134	0.00141	0.01366
	(!CLK_N * !SCD * SCE)	0.00049	0.00050	0.00048
	(!CLK_N * !SCD * SCE)	-0.00135	-0.00137	-0.00139

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)**	-0.00108	-0.00109	-0.00112
	(CLK_N * SCD * SCE)	0.00060	0.00060	0.00058
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01052	0.01087	0.02380
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01299	0.01334	0.02628
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00328	0.00366	0.01548
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00618	0.00657	0.01838
	(CLK_N * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK_N * !SCD * SCE)	0.00140	0.00140	0.00140
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00430	0.00470	0.01663
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00718	0.00757	0.01951
	(!CLK_N * SCD * SCE)	-0.00107	-0.00108	-0.00111
	(!CLK_N * SCD * SCE)	0.00061	0.00060	0.00058
	(!CLK_N * !SCE)	0.00206	0.00253	0.01510
	(!CLK_N * !SCE)	0.00493	0.00540	0.01797
	(!CLK_N * !SCD * SCE)	-0.00042	-0.00043	-0.00042
	(!CLK_N * !SCD * SCE)	0.00139	0.00140	0.00140

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00111	-0.00112	-0.00115
	(CLK_N * SCD * SCE)	0.00060	0.00060	0.00058
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01134	0.01167	0.02452
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01389	0.01423	0.02707
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00356	0.00393	0.01561
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00652	0.00688	0.01856
	(CLK_N * !SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK_N * !SCD * SCE)	0.00140	0.00142	0.00140
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00468	0.00506	0.01685
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00760	0.00798	0.01977
	(!CLK_N * SCD * SCE)	-0.00111	-0.00112	-0.00115
	(!CLK_N * SCD * SCE)	0.00060	0.00060	0.00058
	(!CLK_N * !SCE)	0.00229	0.00275	0.01519
	(!CLK_N * !SCE)	0.00522	0.00567	0.01811
	(!CLK_N * !SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK_N * !SCD * SCE)	0.00139	0.00140	0.00140

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)**	0.00932	0.00928	0.01667
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00549	0.00545	0.01286
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01271	0.01264	0.02065
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00930	0.00924	0.01726
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00812	0.00809	0.01541
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00432	0.00428	0.01163
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01005	0.01001	0.01718
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00608	0.00603	0.01322
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01344	0.01339	0.02122
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00989	0.00983	0.01767
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00885	0.00882	0.01591
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00491	0.00486	0.01199
	(!CLK_N * D * SCE)	0.00597	0.00595	0.01386
	(!CLK_N * D * SCE)	0.00217	0.00214	0.01008
	(!CLK_N * !D * SCE)	0.00670	0.00666	0.01432
	(!CLK_N * !D * SCE)	0.00276	0.00271	0.01039
	!SCE	0.00102	0.00089	0.00087
	!SCE	-0.00100	-0.00116	-0.00117

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00941	0.00938	0.01668
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00561	0.00557	0.01289
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01277	0.01271	0.02063
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00936	0.00929	0.01723
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00813	0.00809	0.01534
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00436	0.00432	0.01158
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01014	0.01010	0.01718
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00619	0.00614	0.01324
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01351	0.01346	0.02118
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00994	0.00988	0.01763
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00886	0.00881	0.01585
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00493	0.00488	0.01193
	(!CLK_N * D * SCE)	0.00586	0.00584	0.01369
	(!CLK_N * D * SCE)	0.00209	0.00206	0.00993
	(!CLK_N * !D * SCE)	0.00659	0.00656	0.01415
	(!CLK_N * !D * SCE)	0.00266	0.00262	0.01023
	!SCE	0.00101	0.00088	0.00086
	!SCE	-0.00100	-0.00117	-0.00118

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)**	0.00464	0.00460	0.01205
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00848	0.00843	0.01586
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01186	0.01182	0.02003
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01527	0.01523	0.02342
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00567	0.00563	0.01318
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00947	0.00944	0.01696
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00426	0.00422	0.01180
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00823	0.00819	0.01576
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01151	0.01144	0.01992
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01506	0.01499	0.02346
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00529	0.00525	0.01294
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00923	0.00920	0.01687
	(!CLK_N * D * SCE)	0.00345	0.00342	0.01135
	(!CLK_N * D * SCE)	0.00725	0.00723	0.01513
	(!CLK_N * !D * SCE)	0.00306	0.00304	0.01114
	(!CLK_N * !D * SCE)	0.00701	0.00699	0.01507
	!SCE	-0.00083	-0.00085	-0.00085
	!SCE	0.00119	0.00119	0.00119

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00494	0.00489	0.01226
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00875	0.00871	0.01605
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01270	0.01260	0.02084
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01611	0.01603	0.02423
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00605	0.00601	0.01347
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00984	0.00980	0.01723
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00455	0.00451	0.01200
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00851	0.00847	0.01595
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01234	0.01225	0.02075
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01590	0.01582	0.02430
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00566	0.00563	0.01322
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00959	0.00955	0.01714
	(!CLK_N * D * SCE)	0.00369	0.00366	0.01152
	(!CLK_N * D * SCE)	0.00748	0.00744	0.01528
	(!CLK_N * !D * SCE)	0.00330	0.00328	0.01130
	(!CLK_N * !D * SCE)	0.00723	0.00721	0.01521
	!SCE	-0.00082	-0.00084	-0.00085
	!SCE	0.00120	0.00120	0.00120

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)**	0.00472	0.00505	0.02094
	(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)	-0.00045	-0.00014	0.01575
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01693	0.01730	0.03347
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01282	0.01319	0.02932
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00972	0.01011	0.02623
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00604	0.00639	0.02251
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01076	0.01114	0.02729
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00705	0.00740	0.02353
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01197	0.01249	0.03700
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00549	0.00600	0.03053
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01537	0.01585	0.04115
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00931	0.00979	0.03512
	(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)	0.00467	0.00511	0.02094
	(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)	-0.00015	0.00027	0.01610
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01077	0.01130	0.03573
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00432	0.00482	0.02930
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00483	0.00516	0.02105
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00034	-0.00003	0.01586
	(!CLK_N * D * !SCD)	0.00873	0.00902	0.02523
	(!CLK_N * D * !SCD)	0.00502	0.00526	0.02147
	(!CLK_N * !D * SCD)	0.00872	0.00923	0.03437
	(!CLK_N * !D * SCD)	0.00227	0.00277	0.02793

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)**	0.00479	0.00507	0.02104
	(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)	-0.00044	-0.00018	0.01578
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01780	0.01821	0.03437
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01368	0.01407	0.03021
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01005	0.01046	0.02659
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00633	0.00670	0.02281
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01118	0.01158	0.02772
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00743	0.00779	0.02392
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01216	0.01266	0.03710
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00559	0.00610	0.03055
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01553	0.01600	0.04123
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00936	0.00982	0.03508
	(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)	0.00473	0.00517	0.02102
	(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)	-0.00016	0.00026	0.01611
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01087	0.01138	0.03575
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00434	0.00484	0.02923
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00489	0.00523	0.02114
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00034	-0.00004	0.01589
	(!CLK_N * D * !SCD)	0.00902	0.00932	0.02555
	(!CLK_N * D * !SCD)	0.00527	0.00554	0.02175
	(!CLK_N * !D * SCD)	0.00872	0.00922	0.03430
	(!CLK_N * !D * SCD)	0.00218	0.00269	0.02778

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)**	-0.00051	0.00042	0.01647
	(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)	0.00464	0.00560	0.02163
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01045	0.01129	0.02717
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01457	0.01544	0.03118
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00705	0.00788	0.02377
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01074	0.01162	0.02735
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00585	0.00670	0.02256
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00957	0.01043	0.02618
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00331	0.00401	0.02823
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00977	0.01049	0.03471
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01053	0.01121	0.03616
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01657	0.01725	0.04221
	(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	0.00053	0.01655
	(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)	0.00459	0.00538	0.02140
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00434	0.00504	0.02938
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01077	0.01150	0.03583
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00061	0.00033	0.01637
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00455	0.00551	0.02154
	(!CLK_N * D * !SCD)	0.00362	0.00439	0.02046
	(!CLK_N * D * !SCD)	0.00735	0.00816	0.02407
	(!CLK_N * !D * SCD)	0.00199	0.00275	0.02772
	(!CLK_N * !D * SCD)	0.00842	0.00919	0.03415

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)**	-0.00059	0.00035	0.01641
	(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)	0.00464	0.00561	0.02165
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01048	0.01133	0.02720
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01462	0.01549	0.03122
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00710	0.00796	0.02384
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01085	0.01173	0.02747
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00582	0.00667	0.02253
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00959	0.01048	0.02619
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00355	0.00423	0.02836
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01010	0.01079	0.03493
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01132	0.01199	0.03685
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01747	0.01815	0.04302
	(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)	-0.00028	0.00047	0.01652
	(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)	0.00460	0.00539	0.02143
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00466	0.00536	0.02960
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01118	0.01189	0.03613
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00069	0.00025	0.01631
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00453	0.00549	0.02154
	(!CLK_N * D * !SCD)	0.00348	0.00426	0.02032
	(!CLK_N * D * !SCD)	0.00725	0.00805	0.02397
	(!CLK_N * !D * SCD)	0.00218	0.00292	0.02780
	(!CLK_N * !D * SCD)	0.00869	0.00944	0.03434

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)	0.01132	0.01131	0.02594
	(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)	0.00879	0.00877	0.02340
	(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)	0.00668	0.00685	0.02130
	(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)	0.00376	0.00392	0.01837
	(!SET_B * Q * !Q_N)	0.00667	0.00698	0.02161
	(!SET_B * Q * !Q_N)	0.00369	0.00398	0.01863

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)**	0.01107	0.01103	0.02566
	(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)	0.00859	0.00856	0.02319
	(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)	0.00640	0.00655	0.02102
	(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	0.00371	0.01818
	(!SET_B * Q * !Q_N)	0.00654	0.00685	0.02149
	(!SET_B * Q * !Q_N)	0.00364	0.00396	0.01859

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)**	0.00984	0.01030	0.02560
	(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)	0.01238	0.01283	0.02813
	(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)	0.00321	0.00368	0.01856
	(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)	0.00612	0.00661	0.02149
	(!SET_B * Q * !Q_N)	0.00217	0.00269	0.01772
	(!SET_B * Q * !Q_N)	0.00516	0.00570	0.02071

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)**	0.01042	0.01085	0.02614
	(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)	0.01289	0.01333	0.02861
	(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)	0.00338	0.00384	0.01871
	(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)	0.00622	0.00668	0.02154
	(!SET_B * Q * !Q_N)	0.00219	0.00273	0.01773
	(!SET_B * Q * !Q_N)	0.00510	0.00564	0.02063

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)**	0.00300	0.00303	0.00301
	(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)	-0.00374	-0.00375	-0.00374
	(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)	0.01034	0.01030	0.02979
	(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)	0.00310	0.00298	0.02249

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)**	0.00309	0.00311	0.00310
	(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)	-0.00362	-0.00363	-0.00362
	(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)	0.01090	0.01084	0.03017
	(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)	0.00371	0.00359	0.02294

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)**	-0.00293	-0.00300	-0.00300
	(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)	0.00377	0.00379	0.00377
	(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)	0.00152	0.00244	0.02374
	(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)	0.00877	0.00973	0.03104

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)**	-0.00305	-0.00310	-0.00309
	(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)	0.00368	0.00367	0.00364
	(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)	0.00137	0.00210	0.02355
	(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)	0.00861	0.00935	0.03078

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)	0.01867	0.01911	0.04249
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01516	0.01561	0.03899
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01152	0.01181	0.03418
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00762	0.00790	0.03028
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01876	0.01919	0.04259
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01525	0.01568	0.03908
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01159	0.01188	0.03425
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00769	0.00797	0.03036
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01997	0.02014	0.04295
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01570	0.01588	0.03868
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01133	0.01159	0.03411
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00743	0.00767	0.03020
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01252	0.01273	0.03565
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00864	0.00884	0.03178
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01410	0.01453	0.03788
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01020	0.01062	0.03398
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01417	0.01459	0.03795
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01027	0.01068	0.03405
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01868	0.01911	0.04250
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01517	0.01561	0.03899
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01152	0.01181	0.03417
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00762	0.00790	0.03028
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02002	0.02019	0.04303
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01573	0.01591	0.03874
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01997	0.02015	0.04296
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01569	0.01587	0.03868
	(!D * !SCE * SET_B * !Q * Q_N)	0.01140	0.01166	0.03418
	(!D * !SCE * SET_B * !Q * Q_N)	0.00750	0.00775	0.03028
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01259	0.01281	0.03574
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00871	0.00892	0.03186
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01133	0.01159	0.03412
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00743	0.00768	0.03022
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01252	0.01274	0.03567
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00864	0.00885	0.03178
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01409	0.01453	0.03787
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01019	0.01062	0.03397

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01890	0.01933	0.04268
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01542	0.01585	0.03920
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01144	0.01173	0.03410
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00759	0.00787	0.03026
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01898	0.01941	0.04276
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01550	0.01592	0.03928
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01151	0.01180	0.03416
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00766	0.00794	0.03032
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02040	0.02058	0.04337
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01620	0.01638	0.03918
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01130	0.01156	0.03407
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00745	0.00770	0.03024
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01242	0.01264	0.03555
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00859	0.00880	0.03172
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01422	0.01464	0.03796
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01037	0.01079	0.03412
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01429	0.01470	0.03804
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01044	0.01085	0.03419
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01891	0.01933	0.04269
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01542	0.01585	0.03920
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01144	0.01173	0.03410
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00759	0.00787	0.03026
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02044	0.02062	0.04342
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01623	0.01641	0.03921
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02039	0.02054	0.04336
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01619	0.01633	0.03917
	(!D * !SCE * SET_B * !Q * Q_N)	0.01137	0.01163	0.03414
	(!D * !SCE * SET_B * !Q * Q_N)	0.00752	0.00777	0.03029
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01248	0.01270	0.03561
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00866	0.00886	0.03180
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01130	0.01156	0.03406
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00745	0.00770	0.03023
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01242	0.01259	0.03557
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00859	0.00876	0.03176
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01422	0.01464	0.03797
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01037	0.01079	0.03413

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)**	0.00882	0.00959	0.03269
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01273	0.01350	0.03659
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00874	0.00951	0.03262
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01265	0.01342	0.03651
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00926	0.00999	0.03302
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01316	0.01390	0.03692
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01220	0.01290	0.03661
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01609	0.01678	0.04049
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01230	0.01301	0.03576
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01620	0.01692	0.03966
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01222	0.01294	0.03569
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01613	0.01685	0.03959
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00882	0.00959	0.03269
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01273	0.01350	0.03659
	(!D * !SCE * SET_B * !Q * Q_N)	0.00918	0.00992	0.03294
	(!D * !SCE * SET_B * !Q * Q_N)	0.01309	0.01382	0.03685
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01212	0.01282	0.03654
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01601	0.01670	0.04042
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00926	0.01000	0.03302
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01316	0.01390	0.03691
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01218	0.01290	0.03662
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01608	0.01678	0.04051
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01230	0.01302	0.03576
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01621	0.01692	0.03967

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00882	0.00957	0.03269
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01267	0.01343	0.03653
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00875	0.00950	0.03262
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01260	0.01336	0.03646
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00921	0.00993	0.03297
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01306	0.01379	0.03680
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01219	0.01289	0.03663
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01603	0.01672	0.04046
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01246	0.01316	0.03588
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01631	0.01700	0.03973
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01240	0.01309	0.03581
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01625	0.01694	0.03966
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00882	0.00957	0.03269
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01267	0.01343	0.03653
	(!D * !SCE * SET_B * !Q * Q_N)	0.00914	0.00986	0.03290
	(!D * !SCE * SET_B * !Q * Q_N)	0.01299	0.01372	0.03673
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01212	0.01281	0.03656
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01596	0.01665	0.04039
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00921	0.00993	0.03297
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01306	0.01379	0.03680
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01218	0.01289	0.03664
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01602	0.01672	0.04047
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01247	0.01316	0.03588
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01632	0.01701	0.03973

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00195	0.00177	0.00402	0.00168	0.00627	0.00291	1.04362	0.99116

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	1.04772	1.89091

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)	0.39488	0.92355	6.55053
	SET_B->Q (FR)	0.17989	0.91446	8.64437

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.30702	0.56376	2.33706
	RESET_B->Q (FF)	0.24667	0.70383	4.46648
	SET_B->Q (RF)	0.15427	0.42523	2.28814

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)	0.27096	0.81790	6.53381
	RESET_B->Q_N (FR)	0.21125	0.96517	8.67989
	SET_B->Q_N (RR)	0.11962	0.68959	6.68666

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)	0.33129	0.65650	2.39990
	SET_B->Q_N (FF)	0.12431	0.64052	4.72578

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)	-0.08787	-0.16124	-0.76957
	setup	CLK (R)	0.13158	0.18324	0.82918

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)	-0.19939	-0.30478	-2.76325
	setup	CLK (R)	0.26416	0.35844	2.96881

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)	-0.08787	-0.16124	-0.76957
	setup	CLK (R)	0.13158	0.18324	0.82918

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)	-0.19939	-0.30478	-2.76325
	setup	CLK (R)	0.26416	0.35844	2.96881

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)	-0.10507	-0.17640	-0.83461
	setup	CLK (R)	0.15517	0.20130	0.89236

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)	-0.26321	-0.37256	-2.95715
	setup	CLK (R)	0.33840	0.43170	3.16398

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)	-0.10507	-0.17640	-0.83461
	hold	CLK (R)	-0.10977	-0.18187	-0.84142
	setup	CLK (R)	0.15321	0.19552	0.88793
	setup	CLK (R)	0.15517	0.20130	0.89236

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)	-0.27002	-0.37806	-2.95903
	hold	CLK (R)	-0.26321	-0.37256	-2.95715
	setup	CLK (R)	0.33840	0.43170	3.16398
	setup	CLK (R)	0.33189	0.42535	3.15034

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)	-0.09781	-0.18040	-0.34289
	setup	CLK (R)	0.33139	0.31877	0.90361

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)	-0.15474	-0.27416	-2.46167
	setup	CLK (R)	0.26776	0.35454	2.98956

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)	-0.26407	-0.26838	-0.34289
	hold	CLK (R)	-0.09781	-0.18040	-0.84676
	setup	CLK (R)	0.33139	0.31877	0.64712
	setup	CLK (R)	0.14378	0.20075	0.90361

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)	-0.15474	-0.27416	-2.46167
	hold	CLK (R)	-0.20185	-0.30065	-2.72259
	setup	CLK (R)	0.19631	0.29616	2.50072
	setup	CLK (R)	0.26776	0.35454	2.98956

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)	0.08397	0.09492	0.56501
	removal	CLK (R)	-0.03594	-0.05374	-0.16576

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)	0.08397	0.09488	0.56501
	recovery	CLK (R)	0.08375	0.09491	0.54468
	recovery	CLK (R)	0.08381	0.09492	0.54818
	removal	CLK (R)	-0.03817	-0.05374	-0.16576
	removal	CLK (R)	-0.03594	-0.05374	-0.16576
	removal	CLK (R)	-0.03594	-0.05374	-0.16576

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 ()	0.19012	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.19519	0.67627	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)	0.00945	0.00239	3.06239
	removal	CLK (R)	0.07339	0.09585	0.09916
	hold	RESET_B (R)	-0.06033	-0.11073	-0.46602
	setup	RESET_B (R)	0.10425	0.14965	0.83139

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)	0.00944	0.00234	3.05718
	recovery	CLK (R)	0.00945	0.00239	3.04976
	recovery	CLK (R)	0.00825	0.00000	3.06239
	removal	CLK (R)	0.07339	0.09585	0.09916
	removal	CLK (R)	0.07339	0.09585	0.09916
	removal	CLK (R)	0.07339	0.09585	0.09916
	hold	RESET_B (R)	-0.06078	-0.11073	-0.46917
	hold	RESET_B (R)	-0.06033	-0.11216	-0.46602
	setup	RESET_B (R)	0.10102	0.14415	0.83139
	setup	RESET_B (R)	0.10425	0.14965	0.82866

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 ()	0.12176	0.67627	16.50020
	min_pulse_width	SET_B ()	0.13695	0.67627	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 ()	0.10657	0.67627	16.50020
	min_pulse_width	CLK ()	0.13442	0.67627	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 ()	0.18253	0.67627	16.50020
	min_pulse_width	CLK ()	0.25849	0.67627	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	0.01495	0.01542	0.02701
	CLK	0.01298	0.01344	0.02498
	SET_B	0.01318	0.01414	0.03756
	SET_B	0.01735	0.01832	0.04149

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01478	0.01514	0.02677
	CLK	0.01261	0.01296	0.02458
	RESET_B	0.01516	0.01554	0.02297
	RESET_B	0.01618	0.01656	0.02394
	SET_B	0.01645	0.01632	0.03582
	SET_B	0.01226	0.01210	0.03159

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01480	0.01521	0.02700
	CLK	0.01263	0.01299	0.02483
	RESET_B	0.01517	0.01556	0.02339
	RESET_B	0.01620	0.01658	0.02424
	SET_B	0.01647	0.01634	0.03602
	SET_B	0.01228	0.01212	0.03183

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01493	0.01539	0.02668
	CLK	0.01295	0.01341	0.02470
	SET_B	0.01313	0.01409	0.03704
	SET_B	0.01730	0.01825	0.04101

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00116	0.00117	0.00116
	(CLK * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(CLK * !SCE)	0.00418	0.00433	0.01691
	(CLK * !SCE)	0.00129	0.00142	0.01402
	(CLK * !SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCD * SCE)	-0.00135	-0.00137	-0.00138
	(!CLK * SCD * SCE)	0.00115	0.00115	0.00115
	(!CLK * SCD * SCE)	-0.00055	-0.00055	-0.00054
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01102	0.01105	0.02323
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00832	0.00835	0.02053
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00732	0.00738	0.01867
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00417	0.00423	0.01553
	(!CLK * !SCD * SCE)	0.00048	0.00048	0.00047
	(!CLK * !SCD * SCE)	-0.00135	-0.00136	-0.00138
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00626	0.00633	0.01755
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00312	0.00320	0.01442

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00108	-0.00110	-0.00112
	(CLK * SCD * SCE)	0.00060	0.00060	0.00058
	(CLK * !SCE)	0.00104	0.00156	0.01427
	(CLK * !SCE)	0.00394	0.00445	0.01716
	(CLK * !SCD * SCE)	-0.00043	-0.00044	-0.00043
	(CLK * !SCD * SCE)	0.00139	0.00140	0.00140
	(!CLK * SCD * SCE)	-0.00109	-0.00110	-0.00113
	(!CLK * SCD * SCE)	0.00060	0.00059	0.00057
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00848	0.00877	0.02196
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01119	0.01147	0.02467
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00315	0.00353	0.01533
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00630	0.00668	0.01848
	(!CLK * !SCD * SCE)	-0.00042	-0.00043	-0.00043
	(!CLK * !SCD * SCE)	0.00139	0.00140	0.00140
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00401	0.00439	0.01632
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00714	0.00752	0.01945

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00587	0.00585	0.01387
	(CLK * D * SCE)	0.00206	0.00203	0.01007
	(CLK * !D * SCE)	0.00661	0.00657	0.01431
	(CLK * !D * SCE)	0.00264	0.00260	0.01036
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00899	0.00896	0.01634
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00493	0.00489	0.01229
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01268	0.01260	0.02064
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00906	0.00898	0.01702
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00793	0.00789	0.01523
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00389	0.00385	0.01119
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00973	0.00968	0.01683
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00552	0.00547	0.01264
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01342	0.01334	0.02121
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00964	0.00956	0.01745
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00867	0.00862	0.01572
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00447	0.00442	0.01155
	!SCE	0.00104	0.00090	0.00088
	!SCE	-0.00100	-0.00116	-0.00117

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00243	0.00240	0.01042
	(CLK * D * SCE)	0.00625	0.00622	0.01421
	(CLK * !D * SCE)	0.00205	0.00203	0.01023
	(CLK * !D * SCE)	0.00601	0.00600	0.01417
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00449	0.00444	0.01188
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00856	0.00851	0.01593
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00981	0.00978	0.01821
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01343	0.01340	0.02182
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00535	0.00531	0.01285
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00940	0.00935	0.01688
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00412	0.00408	0.01164
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00833	0.00829	0.01583
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00948	0.00943	0.01818
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01324	0.01320	0.02193
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00497	0.00494	0.01262
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00917	0.00914	0.01679
	!SCE	-0.00083	-0.00085	-0.00085
	!SCE	0.00120	0.00121	0.00120

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)	0.00468	0.00496	0.02074
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00040	-0.00015	0.01564
	(CLK * D * !SCD)	0.00760	0.00784	0.02391
	(CLK * D * !SCD)	0.00400	0.00420	0.02028
	(CLK * !D * SCD)	0.00848	0.00914	0.03409
	(CLK * !D * SCD)	0.00210	0.00275	0.02773
	(!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)	0.00486	0.00514	0.02092
	(!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)	-0.00022	0.00002	0.01582
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01502	0.01539	0.03140
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01123	0.01157	0.02757
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00971	0.01008	0.02606
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00636	0.00670	0.02265
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01058	0.01095	0.02695
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00722	0.00755	0.02352
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01179	0.01227	0.03665
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00517	0.00563	0.03004
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01548	0.01592	0.04113
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00930	0.00973	0.03496
	(!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)	0.00483	0.00521	0.02093
	(!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	0.00046	0.01618
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01073	0.01121	0.03553
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00412	0.00458	0.02893

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)	-0.00041	0.00051	0.01640
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00465	0.00560	0.02148
	(CLK * D * !SCD)	0.00369	0.00442	0.02042
	(CLK * D * !SCD)	0.00730	0.00806	0.02392
	(CLK * !D * SCD)	0.00117	0.00196	0.02695
	(CLK * !D * SCD)	0.00752	0.00832	0.03332
	(!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)	-0.00060	0.00032	0.01621
	(!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)	0.00446	0.00539	0.02129
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01030	0.01112	0.02685
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01410	0.01495	0.03053
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00660	0.00742	0.02315
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00997	0.01082	0.02640
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00554	0.00636	0.02212
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00892	0.00977	0.02538
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00307	0.00378	0.02785
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00968	0.01040	0.03448
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00839	0.00909	0.03406
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01455	0.01526	0.04024
	(!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)	-0.00034	0.00046	0.01629
	(!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)	0.00441	0.00523	0.02105
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00393	0.00465	0.02885
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01052	0.01124	0.03545

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)	0.00565	0.00585	0.02050
	(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)	0.00323	0.00341	0.01807
	(!SET_B * Q * !Q_N)	0.00612	0.00643	0.02130
	(!SET_B * Q * !Q_N)	0.00364	0.00393	0.01881
	(!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)	0.01064	0.01061	0.02541
	(!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)	0.00865	0.00860	0.02340

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)	0.00304	0.00353	0.01844
	(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)	0.00547	0.00595	0.02087
	(!SET_B * Q * !Q_N)	0.00151	0.00209	0.01714
	(!SET_B * Q * !Q_N)	0.00402	0.00459	0.01964
	(!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)	0.00809	0.00852	0.02385
	(!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)	0.01009	0.01053	0.02586

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)	0.00316	0.00318	0.00315
	(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)	-0.00447	-0.00449	-0.00446
	(!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)	0.00835	0.00835	0.02859
	(!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)	0.00019	0.00015	0.02041

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)	-0.00307	-0.00316	-0.00314
	(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)	0.00450	0.00452	0.00449
	(!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)	0.00201	0.00279	0.02469
	(!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)	0.01015	0.01099	0.03287

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)**	0.01324	0.01351	0.03570
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00908	0.00934	0.03154
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01345	0.01372	0.03591
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00929	0.00955	0.03175
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01321	0.01345	0.03576
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00906	0.00929	0.03161
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01685	0.01714	0.03939
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01244	0.01272	0.03499
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01597	0.01612	0.03859
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01205	0.01219	0.03467
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01619	0.01633	0.03880
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01226	0.01240	0.03488
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01324	0.01351	0.03570
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00908	0.00934	0.03154
	(!D * !SCE * SET_B * !Q * Q_N)	0.01342	0.01366	0.03597
	(!D * !SCE * SET_B * !Q * Q_N)	0.00926	0.00949	0.03181
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01706	0.01734	0.03960
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01265	0.01293	0.03520
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01321	0.01350	0.03577
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00906	0.00934	0.03161
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01686	0.01714	0.03938
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01246	0.01272	0.03497
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01598	0.01613	0.03859
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01205	0.01219	0.03467

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)	0.01411	0.01472	0.03810
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01845	0.01907	0.04245
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00711	0.00788	0.03090
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01126	0.01204	0.03506
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01391	0.01452	0.03790
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01825	0.01887	0.04225
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00690	0.00767	0.03069
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01105	0.01183	0.03485
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01549	0.01638	0.03994
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01949	0.02038	0.04394
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00738	0.00812	0.03104
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01153	0.01228	0.03519
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01004	0.01094	0.03420
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01443	0.01535	0.03861
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00903	0.00971	0.03307
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01294	0.01364	0.03700
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00881	0.00950	0.03286
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01273	0.01343	0.03679
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01411	0.01472	0.03810
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01845	0.01907	0.04245
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00711	0.00788	0.03090
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01126	0.01204	0.03506
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01526	0.01614	0.03971
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01923	0.02012	0.04369
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01550	0.01638	0.03968
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01949	0.02038	0.04367
	(!D * !SCE * SET_B * !Q * Q_N)	0.00717	0.00791	0.03082
	(!D * !SCE * SET_B * !Q * Q_N)	0.01131	0.01207	0.03498
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00983	0.01073	0.03424
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01422	0.01514	0.03864
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00738	0.00812	0.03103
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01153	0.01229	0.03519
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01005	0.01095	0.03420
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01445	0.01536	0.03861
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00903	0.00971	0.03307
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01294	0.01364	0.03700

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00186	0.00191	0.00420	0.00568	0.00305	1.06734	1.09463
sky130_fd_sc_hs__sdfrbp_2	0.00188	0.00194	0.00431	0.00581	0.00299	2.15697	2.12548

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.62284	1.12956
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.63240	1.03406

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)	0.24491	0.76048	6.36455
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.28767	0.70952	6.78352

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.22279	0.48209	2.25963
	RESET_B->Q (FF)	0.31426	0.81849	5.04416
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.25491	0.48454	2.44150
	RESET_B->Q (FF)	0.34977	0.82550	5.24421

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)	0.18586	0.72002	6.38401
	RESET_B->Q_N (FR)	0.27707	1.05287	9.16505
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.18769	0.62275	6.25078
	RESET_B->Q_N (FR)	0.28256	0.96104	9.04906

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)	0.18362	0.52036	2.57692
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.19556	0.50413	2.44798

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)	-0.09377	-0.19529	-1.04976
	setup	CLK (R)	0.17472	0.24080	1.14768
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09663	-0.20158	-1.07738
	setup	CLK (R)	0.17254	0.24604	1.13229

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)	-0.10911	-0.24515	-2.52337
	setup	CLK (R)	0.24321	0.35499	2.89132
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12804	-0.26292	-2.72604
	setup	CLK (R)	0.25394	0.36664	2.93746

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)	-0.09377	-0.19529	-1.04976
	hold	CLK (R)	-0.09579	-0.19549	-1.04978
	setup	CLK (R)	0.17472	0.24074	1.14764
	setup	CLK (R)	0.17400	0.24080	1.14768
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09663	-0.20158	-1.07741
	hold	CLK (R)	-0.09732	-0.20178	-1.07738
	setup	CLK (R)	0.17254	0.24604	1.12644
	setup	CLK (R)	0.17193	0.24604	1.13229

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)	-0.10942	-0.24558	-2.52337
	hold	CLK (R)	-0.10911	-0.24515	-2.52368
	setup	CLK (R)	0.24277	0.35499	2.89110
	setup	CLK (R)	0.24321	0.35496	2.89132
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12804	-0.26292	-2.72764
	hold	CLK (R)	-0.12813	-0.26292	-2.72604
	setup	CLK (R)	0.25394	0.36664	2.93720
	setup	CLK (R)	0.25394	0.36664	2.93746

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)	-0.11603	-0.21003	-1.08644
	setup	CLK (R)	0.19611	0.25719	1.16399
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11718	-0.21358	-1.10619
	setup	CLK (R)	0.19246	0.25926	1.15318

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)	-0.14610	-0.28691	-2.78486
	setup	CLK (R)	0.30566	0.41637	3.10046
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16254	-0.30900	-2.95211
	setup	CLK (R)	0.31634	0.42230	3.14060

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)	-0.11603	-0.21003	-1.08880
	hold	CLK (R)	-0.12265	-0.21814	-1.08644
	setup	CLK (R)	0.19207	0.25381	1.16283
	setup	CLK (R)	0.19611	0.25719	1.16399
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11718	-0.21358	-1.10619
	hold	CLK (R)	-0.12129	-0.22141	-1.11278
	setup	CLK (R)	0.18977	0.25574	1.14925
	setup	CLK (R)	0.19246	0.25926	1.15318

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)	-0.15535	-0.29807	-2.81463
	hold	CLK (R)	-0.14610	-0.28691	-2.78486
	setup	CLK (R)	0.30566	0.41637	3.10046
	setup	CLK (R)	0.29753	0.40932	3.09395
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17692	-0.31848	-2.95810
	hold	CLK (R)	-0.16254	-0.30900	-2.95211
	setup	CLK (R)	0.31634	0.42230	3.14060
	setup	CLK (R)	0.30852	0.41767	3.13986

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)	-0.10113	-0.20094	-0.32822
	setup	CLK (R)	0.30888	0.32445	1.14105
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10051	-0.20448	-0.37008
	setup	CLK (R)	0.31579	0.32856	1.12102

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)	-0.12600	-0.25272	-2.61198
	setup	CLK (R)	0.25603	0.36347	2.94001
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14062	-0.26807	-2.62730
	setup	CLK (R)	0.26628	0.37141	2.97854

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)	-0.15691	-0.20554	-0.32822
	hold	CLK (R)	-0.10113	-0.20094	-1.04995
	setup	CLK (R)	0.30888	0.32445	0.54594
	setup	CLK (R)	0.17581	0.24754	1.14105
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17405	-0.22354	-0.37008
	hold	CLK (R)	-0.10051	-0.20448	-1.07377
	setup	CLK (R)	0.31579	0.32856	0.55865
	setup	CLK (R)	0.17295	0.24767	1.12102

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)	-0.17059	-0.31634	-2.62757
	hold	CLK (R)	-0.12600	-0.25272	-2.61198
	setup	CLK (R)	0.24626	0.35883	2.65293
	setup	CLK (R)	0.25603	0.36347	2.94001
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.16772	-0.31707	-2.62730
	hold	CLK (R)	-0.14062	-0.26807	-2.76904
	setup	CLK (R)	0.24407	0.35649	2.65095
	setup	CLK (R)	0.26628	0.37141	2.97854

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)	0.21545	0.25605	1.29334
	removal	CLK (R)	-0.15914	-0.21107	-1.16104
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.21191	0.25926	1.29814
	removal	CLK (R)	-0.16945	-0.21904	-1.18518

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)	0.21241	0.25350	1.29151
	recovery	CLK (R)	0.20492	0.24433	1.23955
	recovery	CLK (R)	0.20278	0.23337	1.21697
	recovery	CLK (R)	0.21545	0.25605	1.29334
	removal	CLK (R)	-0.17015	-0.23178	-1.23708
	removal	CLK (R)	-0.16309	-0.22141	-1.18409
	removal	CLK (R)	-0.15914	-0.21107	-1.16104
	removal	CLK (R)	-0.17338	-0.23699	-1.24004
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.20879	0.25174	1.28759
	recovery	CLK (R)	0.20438	0.24604	1.24497
	recovery	CLK (R)	0.20183	0.23490	1.21865
	recovery	CLK (R)	0.21191	0.25926	1.29814
	removal	CLK (R)	-0.17534	-0.23743	-1.26062
	removal	CLK (R)	-0.17178	-0.22703	-1.20952
	removal	CLK (R)	-0.16945	-0.21904	-1.18518
	removal	CLK (R)	-0.18208	-0.24270	-1.26245

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 ()	0.15974	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.13948	0.67627	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.16227	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.15468	0.67627	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 ()	0.13948	0.67627	16.50020
	min_pulse_width	CLK ()	0.08631	0.67627	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.17493	0.67627	16.50020
	min_pulse_width	CLK ()	0.10150	0.67627	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 ()	0.19266	0.67627	16.50020
	min_pulse_width	CLK ()	0.23064	0.67627	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.18506	0.67627	16.50020
	min_pulse_width	CLK ()	0.23317	0.67627	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	0.01358	0.01389	0.02555
	CLK	0.01146	0.01173	0.02340
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01624	0.01689	0.03208
	CLK	0.01407	0.01458	0.02793

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01380	0.01430	0.02598
	CLK	0.01171	0.01216	0.02389
	RESET_B	0.01174	0.01214	0.02566
	RESET_B	0.01667	0.01706	0.03024
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01615	0.01694	0.02862
	CLK	0.01419	0.01499	0.02665
	RESET_B	0.01419	0.01479	0.02814
	RESET_B	0.01922	0.02000	0.03312

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01381	0.01431	0.02615
	CLK	0.01172	0.01218	0.02404
	RESET_B	0.01177	0.01215	0.02679
	RESET_B	0.01670	0.01710	0.03062
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01616	0.01714	0.02931
	CLK	0.01420	0.01503	0.02729
	RESET_B	0.01421	0.01498	0.02934
	RESET_B	0.01925	0.02002	0.03353

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01357	0.01387	0.02524
	CLK	0.01144	0.01172	0.02310
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01623	0.01673	0.02840
	CLK	0.01405	0.01456	0.02617

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00112	0.00114	0.00112
	(CLK * RESET_B * SCD * SCE)	-0.00053	-0.00054	-0.00053
	(CLK * RESET_B * SCD * !SCE)	0.00485	0.00496	0.01684
	(CLK * RESET_B * SCD * !SCE)	0.00165	0.00175	0.01364
	(CLK * RESET_B * !SCD * !SCE)	0.00485	0.00496	0.01684
	(CLK * RESET_B * !SCD * !SCE)	0.00166	0.00175	0.01364
	(CLK * !SCD * SCE)	0.00058	0.00059	0.00057
	(CLK * !SCD * SCE)	-0.00119	-0.00121	-0.00123
	(CLK * !RESET_B * SCD * SCE)	0.00057	0.00057	0.00056
	(CLK * !RESET_B * SCD * SCE)	-0.00120	-0.00122	-0.00123
	(CLK * !RESET_B * SCD * !SCE)	0.00040	0.00040	0.00035
	(CLK * !RESET_B * SCD * !SCE)	-0.00137	-0.00138	-0.00144
	(CLK * !RESET_B * !SCD * !SCE)	0.00040	0.00040	0.00035
	(CLK * !RESET_B * !SCD * !SCE)	-0.00141	-0.00141	-0.00146
	(!CLK * RESET_B * SCD * SCE)	0.00113	0.00113	0.00112
	(!CLK * RESET_B * SCD * SCE)	-0.00053	-0.00053	-0.00053
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01104	0.01120	0.02364
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00767	0.00783	0.02026
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01104	0.01120	0.02363
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00768	0.00783	0.02026
	(!CLK * !SCD * SCE)	0.00059	0.00059	0.00058
	(!CLK * !SCD * SCE)	-0.00119	-0.00120	-0.00123
	(!CLK * !RESET_B * SCD * SCE)	0.00057	0.00057	0.00056
	(!CLK * !RESET_B * SCD * SCE)	-0.00120	-0.00122	-0.00123
	(!CLK * !RESET_B * SCD * !SCE)	0.00040	0.00040	0.00035
	(!CLK * !RESET_B * SCD * !SCE)	-0.00137	-0.00138	-0.00144
	(!CLK * !RESET_B * !SCD * !SCE)	0.00040	0.00040	0.00035
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00141	-0.00141	-0.00146

	(CLK * RESET_B * SCD * SCE)	0.00115	0.00116	0.00115
	(CLK * RESET_B * SCD * SCE)	-0.00053	-0.00054	-0.00053
	(CLK * RESET_B * SCD * !SCE)	0.00514	0.00523	0.01700
	(CLK * RESET_B * SCD * !SCE)	0.00189	0.00196	0.01374
	(CLK * RESET_B * !SCD * !SCE)	0.00514	0.00522	0.01700
	(CLK * RESET_B * !SCD * !SCE)	0.00189	0.00197	0.01374
	(CLK * !SCD * SCE)	0.00059	0.00060	0.00058
	(CLK * !SCD * SCE)	-0.00120	-0.00123	-0.00124
	(CLK * !RESET_B * SCD * SCE)	0.00057	0.00058	0.00057
	(CLK * !RESET_B * SCD * SCE)	-0.00122	-0.00124	-0.00125
	(CLK * !RESET_B * SCD * !SCE)	0.00039	0.00039	0.00034
	(CLK * !RESET_B * SCD * !SCE)	-0.00141	-0.00141	-0.00148
	(CLK * !RESET_B * !SCD * !SCE)	0.00039	0.00038	0.00034
	(CLK * !RESET_B * !SCD * !SCE)	-0.00145	-0.00145	-0.00150
	(!CLK * RESET_B * SCD * SCE)	0.00115	0.00115	0.00115
	(!CLK * RESET_B * SCD * SCE)	-0.00053	-0.00053	-0.00053
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.01136	0.01151	0.02385
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00793	0.00807	0.02042
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01136	0.01151	0.02385
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00794	0.00808	0.02042
	(!CLK * !SCD * SCE)	0.00060	0.00059	0.00058
	(!CLK * !SCD * SCE)	-0.00120	-0.00122	-0.00124
	(!CLK * !RESET_B * SCD * SCE)	0.00057	0.00058	0.00057
	(!CLK * !RESET_B * SCD * SCE)	-0.00122	-0.00124	-0.00125
	(!CLK * !RESET_B * SCD * !SCE)	0.00039	0.00039	0.00034
	(!CLK * !RESET_B * SCD * !SCE)	-0.00141	-0.00141	-0.00148
	(!CLK * !RESET_B * !SCD * !SCE)	0.00039	0.00038	0.00034
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00145	-0.00145	-0.00150

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	-0.00106	-0.00108	-0.00111
	(CLK * RESET_B * SCD * SCE)	0.00057	0.00058	0.00055
	(CLK * RESET_B * SCD * !SCE)	0.00060	0.00104	0.01328
	(CLK * RESET_B * SCD * !SCE)	0.00380	0.00423	0.01648
	(CLK * RESET_B * !SCD * !SCE)	0.00060	0.00104	0.01328
	(CLK * RESET_B * !SCD * !SCE)	0.00381	0.00423	0.01648
	(CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00055
	(CLK * !SCD * SCE)	0.00123	0.00125	0.00123
	(CLK * !RESET_B * SCD * SCE)	-0.00054	-0.00054	-0.00054
	(CLK * !RESET_B * SCD * SCE)	0.00123	0.00123	0.00123
	(CLK * !RESET_B * SCD * !SCE)	-0.00033	-0.00034	-0.00033
	(CLK * !RESET_B * SCD * !SCE)	0.00147	0.00148	0.00147
	(CLK * !RESET_B * !SCD * !SCE)	-0.00034	-0.00034	-0.00033
	(CLK * !RESET_B * !SCD * !SCE)	0.00147	0.00149	0.00147
	(!CLK * RESET_B * SCD * SCE)	-0.00106	-0.00108	-0.00111
	(!CLK * RESET_B * SCD * SCE)	0.00058	0.00058	0.00055
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00667	0.00708	0.02136
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01003	0.01044	0.02473
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00666	0.00708	0.02136
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01003	0.01044	0.02473
	(!CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00055
	(!CLK * !SCD * SCE)	0.00123	0.00125	0.00123
	(!CLK * !RESET_B * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK * !RESET_B * SCD * SCE)	0.00123	0.00124	0.00123
	(!CLK * !RESET_B * SCD * !SCE)	-0.00033	-0.00034	-0.00033
	(!CLK * !RESET_B * SCD * !SCE)	0.00146	0.00148	0.00147
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00034	-0.00034	-0.00033
	(!CLK * !RESET_B * !SCD * !SCE)	0.00147	0.00149	0.00147

	(CLK * RESET_B * SCD * SCE)	-0.00109	-0.00111	-0.00113
	(CLK * RESET_B * SCD * SCE)	0.00058	0.00058	0.00055
	(CLK * RESET_B * SCD * !SCE)	0.00071	0.00112	0.01329
	(CLK * RESET_B * SCD * !SCE)	0.00397	0.00438	0.01655
	(CLK * RESET_B * !SCD * !SCE)	0.00071	0.00112	0.01329
	(CLK * RESET_B * !SCD * !SCE)	0.00397	0.00438	0.01655
	(CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00056
	(CLK * !SCD * SCE)	0.00124	0.00126	0.00124
	(CLK * !RESET_B * SCD * SCE)	-0.00055	-0.00055	-0.00055
	(CLK * !RESET_B * SCD * SCE)	0.00124	0.00124	0.00125
	(CLK * !RESET_B * SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(CLK * !RESET_B * SCD * !SCE)	0.00150	0.00152	0.00150
	(CLK * !RESET_B * !SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(CLK * !RESET_B * !SCD * !SCE)	0.00150	0.00152	0.00151
	(!CLK * RESET_B * SCD * SCE)	-0.00109	-0.00110	-0.00113
	(!CLK * RESET_B * SCD * SCE)	0.00058	0.00057	0.00055
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00676	0.00719	0.02141
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01019	0.01062	0.02484
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00676	0.00719	0.02141
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01019	0.01062	0.02484
	(!CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00056
	(!CLK * !SCD * SCE)	0.00124	0.00126	0.00125
	(!CLK * !RESET_B * SCD * SCE)	-0.00055	-0.00056	-0.00055
	(!CLK * !RESET_B * SCD * SCE)	0.00124	0.00126	0.00125
	(!CLK * !RESET_B * SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(!CLK * !RESET_B * SCD * !SCE)	0.00150	0.00152	0.00150
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00032	-0.00032	-0.00031
	(!CLK * !RESET_B * !SCD * !SCE)	0.00150	0.00152	0.00151

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00631	0.00625	0.01404
	(CLK * D * RESET_B * SCE)	0.00221	0.00214	0.00994
	(CLK * D * RESET_B * !SCE)	0.00110	0.00095	0.00094
	(CLK * D * RESET_B * !SCE)	-0.00100	-0.00115	-0.00117
	(CLK * D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(CLK * D * !RESET_B * SCE)	-0.00128	-0.00128	-0.00127
	(CLK * D * !RESET_B * !SCE)	0.00037	0.00037	0.00037
	(CLK * D * !RESET_B * !SCE)	-0.00137	-0.00139	-0.00139
	(CLK * !D * RESET_B * SCE)	0.00705	0.00698	0.01448
	(CLK * !D * RESET_B * SCE)	0.00280	0.00272	0.01023
	(CLK * !D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(CLK * !D * !RESET_B * SCE)	-0.00128	-0.00128	-0.00127
	(!D * RESET_B * !SCE)	0.00074	0.00075	0.00075
	(!D * RESET_B * !SCE)	-0.00134	-0.00136	-0.00136
	(!D * !RESET_B * !SCE)	0.00044	0.00044	0.00044
	(!D * !RESET_B * !SCE)	-0.00144	-0.00145	-0.00145
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01249	0.01249	0.02077
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00822	0.00821	0.01651
	(!CLK * D * RESET_B * !SCE)	0.00110	0.00095	0.00094
	(!CLK * D * RESET_B * !SCE)	-0.00100	-0.00115	-0.00117
	(!CLK * D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(!CLK * D * !RESET_B * SCE)	-0.00128	-0.00128	-0.00127
	(!CLK * D * !RESET_B * !SCE)	0.00037	0.00037	0.00037
	(!CLK * D * !RESET_B * !SCE)	-0.00137	-0.00139	-0.00139
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01324	0.01322	0.02126
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00882	0.00879	0.01684
	(!CLK * !D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(!CLK * !D * !RESET_B * SCE)	-0.00128	-0.00128	-0.00127

	(CLK * D * RESET_B * SCE)	0.00652	0.00646	0.01420
	(CLK * D * RESET_B * SCE)	0.00236	0.00229	0.01004
	(CLK * D * RESET_B * !SCE)	0.00113	0.00098	0.00096
	(CLK * D * RESET_B * !SCE)	-0.00100	-0.00116	-0.00117
	(CLK * D * !RESET_B * SCE)	0.00054	0.00054	0.00052
	(CLK * D * !RESET_B * SCE)	-0.00128	-0.00128	-0.00127
	(CLK * D * !RESET_B * !SCE)	0.00038	0.00039	0.00038
	(CLK * D * !RESET_B * !SCE)	-0.00139	-0.00140	-0.00140
	(CLK * !D * RESET_B * SCE)	0.00726	0.00719	0.01465
	(CLK * !D * RESET_B * SCE)	0.00295	0.00287	0.01034
	(CLK * !D * !RESET_B * SCE)	0.00054	0.00054	0.00052
	(CLK * !D * !RESET_B * SCE)	-0.00128	-0.00128	-0.00127
	(!D * RESET_B * !SCE)	0.00076	0.00077	0.00077
	(!D * RESET_B * !SCE)	-0.00135	-0.00137	-0.00137
	(!D * !RESET_B * !SCE)	0.00044	0.00045	0.00045
	(!D * !RESET_B * !SCE)	-0.00145	-0.00147	-0.00146
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01273	0.01273	0.02100
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00840	0.00838	0.01666
	(!CLK * D * RESET_B * !SCE)	0.00113	0.00098	0.00096
	(!CLK * D * RESET_B * !SCE)	-0.00100	-0.00115	-0.00117
	(!CLK * D * !RESET_B * SCE)	0.00054	0.00054	0.00052
	(!CLK * D * !RESET_B * SCE)	-0.00128	-0.00128	-0.00127
	(!CLK * D * !RESET_B * !SCE)	0.00038	0.00039	0.00038
	(!CLK * D * !RESET_B * !SCE)	-0.00139	-0.00140	-0.00140
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01348	0.01346	0.02146
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00899	0.00896	0.01698
	(!CLK * !D * !RESET_B * SCE)	0.00054	0.00054	0.00052
	(!CLK * !D * !RESET_B * SCE)	-0.00128	-0.00128	-0.00127

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00190	0.00179	0.00967
	(CLK * D * RESET_B * SCE)	0.00601	0.00591	0.01375
	(CLK * D * RESET_B * !SCE)	-0.00090	-0.00092	-0.00092
	(CLK * D * RESET_B * !SCE)	0.00118	0.00119	0.00119
	(CLK * D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(CLK * D * !RESET_B * SCE)	0.00129	0.00132	0.00128
	(CLK * D * !RESET_B * !SCE)	-0.00036	-0.00036	-0.00036
	(CLK * D * !RESET_B * !SCE)	0.00139	0.00141	0.00139
	(CLK * !D * RESET_B * SCE)	0.00145	0.00136	0.00942
	(CLK * !D * RESET_B * SCE)	0.00570	0.00561	0.01365
	(CLK * !D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(CLK * !D * !RESET_B * SCE)	0.00129	0.00132	0.00128
	(!D * RESET_B * !SCE)	-0.00069	-0.00075	-0.00075
	(!D * RESET_B * !SCE)	0.00139	0.00137	0.00136
	(!D * !RESET_B * !SCE)	-0.00044	-0.00044	-0.00044
	(!D * !RESET_B * !SCE)	0.00147	0.00148	0.00147
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00797	0.00794	0.01756
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01225	0.01222	0.02182
	(!CLK * D * RESET_B * !SCE)	-0.00089	-0.00092	-0.00092
	(!CLK * D * RESET_B * !SCE)	0.00118	0.00119	0.00119
	(!CLK * D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(!CLK * D * !RESET_B * SCE)	0.00129	0.00132	0.00128
	(!CLK * D * !RESET_B * !SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * D * !RESET_B * !SCE)	0.00139	0.00141	0.00139
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00759	0.00758	0.01721
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01201	0.01200	0.02161
	(!CLK * !D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(!CLK * !D * !RESET_B * SCE)	0.00129	0.00132	0.00128

	(CLK * D * RESET_B * SCE)	0.00196	0.00186	0.00971
	(CLK * D * RESET_B * SCE)	0.00614	0.00604	0.01386
	(CLK * D * RESET_B * !SCE)	-0.00092	-0.00094	-0.00095
	(CLK * D * RESET_B * !SCE)	0.00119	0.00120	0.00120
	(CLK * D * !RESET_B * SCE)	-0.00048	-0.00049	-0.00049
	(CLK * D * !RESET_B * SCE)	0.00130	0.00132	0.00129
	(CLK * D * !RESET_B * !SCE)	-0.00037	-0.00037	-0.00037
	(CLK * D * !RESET_B * !SCE)	0.00140	0.00141	0.00141
	(CLK * !D * RESET_B * SCE)	0.00157	0.00148	0.00950
	(CLK * !D * RESET_B * SCE)	0.00589	0.00581	0.01380
	(CLK * !D * !RESET_B * SCE)	-0.00048	-0.00049	-0.00049
	(CLK * !D * !RESET_B * SCE)	0.00130	0.00132	0.00129
	(!D * RESET_B * !SCE)	-0.00071	-0.00076	-0.00077
	(!D * RESET_B * !SCE)	0.00140	0.00138	0.00137
	(!D * !RESET_B * !SCE)	-0.00044	-0.00045	-0.00045
	(!D * !RESET_B * !SCE)	0.00148	0.00149	0.00149
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00807	0.00807	0.01763
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01242	0.01241	0.02195
	(!CLK * D * RESET_B * !SCE)	-0.00092	-0.00095	-0.00095
	(!CLK * D * RESET_B * !SCE)	0.00119	0.00120	0.00120
	(!CLK * D * !RESET_B * SCE)	-0.00048	-0.00049	-0.00049
	(!CLK * D * !RESET_B * SCE)	0.00130	0.00132	0.00129
	(!CLK * D * !RESET_B * !SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * D * !RESET_B * !SCE)	0.00140	0.00141	0.00141
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00774	0.00772	0.01733
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01223	0.01220	0.02180
	(!CLK * !D * !RESET_B * SCE)	-0.00048	-0.00049	-0.00049
	(!CLK * !D * !RESET_B * SCE)	0.00130	0.00132	0.00129

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)**	0.00564	0.00571	0.02141
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00008	0.00011	0.01584
	(CLK * D * RESET_B * !SCD)	0.00797	0.00808	0.02407
	(CLK * D * RESET_B * !SCD)	0.00425	0.00432	0.02030
	(CLK * !D * RESET_B * SCD)	0.01032	0.01061	0.03499
	(CLK * !D * RESET_B * SCD)	0.00314	0.00339	0.02780
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00564	0.00571	0.02141
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00008	0.00012	0.01584
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01393	0.01412	0.03024
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01037	0.01055	0.02663
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00555	0.00580	0.02155
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00028	0.00050	0.01625
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01650	0.01682	0.04196
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00915	0.00944	0.03462

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00525	0.00535	0.02116
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00049	-0.00042	0.01541
	(CLK * D * RESET_B * !SCD)	0.00771	0.00784	0.02392
	(CLK * D * RESET_B * !SCD)	0.00383	0.00393	0.02000
	(CLK * !D * RESET_B * SCD)	0.01017	0.01047	0.03495
	(CLK * !D * RESET_B * SCD)	0.00276	0.00304	0.02755
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00525	0.00535	0.02116
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00049	-0.00042	0.01541
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01369	0.01390	0.03016
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00999	0.01018	0.02642
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00521	0.00548	0.02134
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00025	-0.00000	0.01586
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01638	0.01673	0.04202
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00879	0.00912	0.03443

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)**	-0.00032	0.00042	0.01637
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00526	0.00600	0.02193
	(CLK * D * RESET_B * !SCD)	0.00455	0.00507	0.02116
	(CLK * D * RESET_B * !SCD)	0.00828	0.00884	0.02477
	(CLK * !D * RESET_B * SCD)	0.00103	0.00164	0.02596
	(CLK * !D * RESET_B * SCD)	0.00822	0.00881	0.03316
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00031	0.00044	0.01637
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00526	0.00599	0.02193
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01072	0.01132	0.02735
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01427	0.01491	0.03080
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00030	0.00040	0.01625
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00499	0.00569	0.02152
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00706	0.00771	0.03316
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01441	0.01506	0.04053

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00028	0.00046	0.01649
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00548	0.00622	0.02223
	(CLK * D * RESET_B * !SCD)	0.00488	0.00543	0.02154
	(CLK * D * RESET_B * !SCD)	0.00876	0.00934	0.02530
	(CLK * !D * RESET_B * SCD)	0.00111	0.00172	0.02611
	(CLK * !D * RESET_B * SCD)	0.00852	0.00914	0.03352
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00028	0.00049	0.01649
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00548	0.00624	0.02223
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01108	0.01169	0.02777
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01479	0.01542	0.03138
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00029	0.00041	0.01633
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00516	0.00589	0.02179
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00716	0.00783	0.03338
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01474	0.01541	0.04097

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)**	0.00919	0.00907	0.02151
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00035	-0.00051	0.01196
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00882	0.00870	0.02157
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00036	-0.00053	0.01236
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00311	0.00315	0.00311
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00398	-0.00400	-0.00398
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00840	0.00829	0.02137
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00037	-0.00047	0.01259
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00993	0.00981	0.02190
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00025	0.00006	0.01221
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00308	0.00312	0.00308
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00400	-0.00402	-0.00400
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00311	0.00315	0.00311
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00398	-0.00401	-0.00398
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00309	0.00310	0.00309
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00400	-0.00401	-0.00400
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01598	0.01555	0.03009
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00632	0.00585	0.02038
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01564	0.01520	0.03012
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00629	0.00581	0.02075
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00311	0.00314	0.00312
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00397	-0.00399	-0.00397
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01520	0.01479	0.02990
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00630	0.00585	0.02097
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01673	0.01631	0.03050
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00692	0.00643	0.02065
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00308	0.00310	0.00309
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00399	-0.00400	-0.00399
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00311	0.00312	0.00312
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00397	-0.00397	-0.00397
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00309	0.00311	0.00310
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00400	-0.00401	-0.00400

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00926	0.00914	0.02149
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00030	-0.00045	0.01193
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00901	0.00889	0.02164
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00020	-0.00037	0.01240
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00300	0.00304	0.00301
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00407	-0.00410	-0.00407
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00858	0.00849	0.02143
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00020	-0.00034	0.01263
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01001	0.00988	0.02189
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00029	0.00012	0.01217
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00297	0.00301	0.00298
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00409	-0.00411	-0.00408
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00300	0.00304	0.00301
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00407	-0.00410	-0.00407
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00298	0.00300	0.00298
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00409	-0.00411	-0.00409
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01607	0.01566	0.03011
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00635	0.00589	0.02037
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01583	0.01539	0.03029
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00645	0.00598	0.02089
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00300	0.00302	0.00300
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00407	-0.00409	-0.00407
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01540	0.01499	0.03001
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00644	0.00601	0.02104
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01682	0.01640	0.03053
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00695	0.00649	0.02064
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00297	0.00299	0.00297
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00409	-0.00410	-0.00409
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00300	0.00301	0.00300
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00407	-0.00408	-0.00407
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00298	0.00300	0.00298
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00410	-0.00411	-0.00410

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)**	0.00055	0.00089	0.01489
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01009	0.01046	0.02444
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00033	-0.00002	0.01398
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00887	0.00923	0.02319
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00303	-0.00313	-0.00311
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00402	0.00403	0.00399
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00061	-0.00023	0.01389
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00815	0.00857	0.02267
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00010	0.00049	0.01466
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00978	0.01021	0.02434
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00297	-0.00311	-0.00308
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00405	0.00404	0.00400
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00303	-0.00313	-0.00311
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00402	0.00403	0.00399
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00299	-0.00310	-0.00309
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00406	0.00404	0.00401
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00693	0.00690	0.02465
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01660	0.01661	0.03433
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00606	0.00590	0.02362
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01540	0.01530	0.03298
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00304	-0.00314	-0.00312
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00401	0.00402	0.00399
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00578	0.00572	0.02353
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01468	0.01468	0.03249
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00649	0.00646	0.02447
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01631	0.01632	0.03433
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00298	-0.00310	-0.00309
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00404	0.00403	0.00400
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00304	-0.00312	-0.00312
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00401	0.00402	0.00399
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00300	-0.00311	-0.00310
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00405	0.00404	0.00400

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00071	0.00105	0.01503
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01028	0.01063	0.02456
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00020	0.00011	0.01406
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00903	0.00937	0.02329
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00292	-0.00300	-0.00300
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00411	0.00410	0.00409
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00048	-0.00013	0.01397
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00830	0.00871	0.02277
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00033	0.00069	0.01483
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01004	0.01045	0.02452
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00286	-0.00298	-0.00298
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00414	0.00412	0.00409
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00292	-0.00300	-0.00300
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00411	0.00410	0.00409
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00288	-0.00299	-0.00298
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00415	0.00412	0.00410
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00709	0.00707	0.02477
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01688	0.01681	0.03452
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00620	0.00605	0.02374
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01557	0.01548	0.03314
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00291	-0.00300	-0.00300
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00411	0.00411	0.00409
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00590	0.00580	0.02365
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01491	0.01478	0.03262
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00671	0.00670	0.02465
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01664	0.01658	0.03455
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00286	-0.00298	-0.00297
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00414	0.00412	0.00410
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00291	-0.00301	-0.00300
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00411	0.00413	0.00409
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00287	-0.00298	-0.00298
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00415	0.00413	0.00410

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)**	0.01294	0.01314	0.03510
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00872	0.00891	0.03088
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01294	0.01314	0.03510
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00872	0.00891	0.03088
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01294	0.01314	0.03510
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00872	0.00892	0.03088
	(D * !SCD * SCE * !Q * Q_N)	0.01329	0.01349	0.03556
	(D * !SCD * SCE * !Q * Q_N)	0.00906	0.00925	0.03134
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01329	0.01350	0.03546
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00906	0.00926	0.03124
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01329	0.01350	0.03546
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00906	0.00926	0.03123
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01329	0.01350	0.03546
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00906	0.00926	0.03123
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01294	0.01314	0.03510
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00872	0.00892	0.03088
	(!D * !SCE * !Q * Q_N)	0.01329	0.01349	0.03556
	(!D * !SCE * !Q * Q_N)	0.00906	0.00925	0.03133
	(!D * !SCD * SCE * !Q * Q_N)	0.01329	0.01349	0.03546
	(!D * !SCD * SCE * !Q * Q_N)	0.00906	0.00925	0.03124
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01329	0.01350	0.03555
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00906	0.00926	0.03133

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01302	0.01318	0.03525
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00889	0.00903	0.03111
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01301	0.01317	0.03525
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00888	0.00902	0.03111
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01302	0.01318	0.03525
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00889	0.00903	0.03111
	(D * !SCD * SCE * !Q * Q_N)	0.01329	0.01344	0.03553
	(D * !SCD * SCE * !Q * Q_N)	0.00915	0.00929	0.03139
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01329	0.01345	0.03553
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00916	0.00930	0.03139
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01329	0.01345	0.03552
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00915	0.00930	0.03138
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01329	0.01345	0.03552
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00915	0.00930	0.03138
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01302	0.01318	0.03525
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00889	0.00903	0.03111
	(!D * !SCE * !Q * Q_N)	0.01329	0.01344	0.03553
	(!D * !SCE * !Q * Q_N)	0.00915	0.00928	0.03139
	(!D * !SCD * SCE * !Q * Q_N)	0.01329	0.01344	0.03553
	(!D * !SCD * SCE * !Q * Q_N)	0.00916	0.00929	0.03139
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01329	0.01345	0.03553
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00916	0.00930	0.03139

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)	0.00688	0.00768	0.03034
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01111	0.01189	0.03456
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01264	0.01336	0.03667
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01670	0.01740	0.04072
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00688	0.00768	0.03034
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01111	0.01189	0.03456
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01260	0.01332	0.03663
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01666	0.01737	0.04068
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01359	0.01447	0.03771
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01801	0.01888	0.04212
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00688	0.00768	0.03034
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01111	0.01189	0.03456
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01260	0.01332	0.03663
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01666	0.01737	0.04068
	(D * !SCD * SCE * !Q * Q_N)	0.00640	0.00719	0.02992
	(D * !SCD * SCE * !Q * Q_N)	0.01062	0.01141	0.03415
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00640	0.00720	0.02991
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01063	0.01142	0.03414
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00640	0.00720	0.02991
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01062	0.01141	0.03413
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00640	0.00720	0.02991
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01062	0.01141	0.03413
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00688	0.00768	0.03034
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01111	0.01189	0.03456
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01268	0.01339	0.03671
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01672	0.01744	0.04074
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01355	0.01444	0.03744
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01795	0.01883	0.04183
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01357	0.01446	0.03769
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01798	0.01886	0.04210
	(!D * !SCE * !Q * Q_N)	0.00640	0.00719	0.02992
	(!D * !SCE * !Q * Q_N)	0.01062	0.01141	0.03415
	(!D * !SCD * SCE * !Q * Q_N)	0.00640	0.00719	0.02992
	(!D * !SCD * SCE * !Q * Q_N)	0.01063	0.01141	0.03415
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00640	0.00720	0.02991
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01063	0.01142	0.03414

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00683	0.00765	0.03049
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01098	0.01181	0.03463
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01267	0.01340	0.03690
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01663	0.01737	0.04085
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00683	0.00765	0.03049
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01098	0.01180	0.03463
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01263	0.01337	0.03686
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01660	0.01734	0.04083
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01352	0.01446	0.03781
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01786	0.01879	0.04214
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00684	0.00766	0.03049
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01098	0.01181	0.03463
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01263	0.01337	0.03686
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01660	0.01734	0.04082
	(D * !SCD * SCE * !Q * Q_N)	0.00643	0.00725	0.03015
	(D * !SCD * SCE * !Q * Q_N)	0.01057	0.01138	0.03429
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00643	0.00725	0.03014
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01057	0.01139	0.03428
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00643	0.00725	0.03014
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01057	0.01138	0.03428
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00643	0.00725	0.03014
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01057	0.01138	0.03428
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00683	0.00766	0.03049
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01098	0.01181	0.03463
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01270	0.01343	0.03694
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01665	0.01739	0.04087
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01349	0.01439	0.03779
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01781	0.01870	0.04210
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01350	0.01445	0.03780
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01784	0.01878	0.04212
	(!D * !SCE * !Q * Q_N)	0.00642	0.00724	0.03015
	(!D * !SCE * !Q * Q_N)	0.01057	0.01138	0.03429
	(!D * !SCD * SCE * !Q * Q_N)	0.00643	0.00724	0.03015
	(!D * !SCD * SCE * !Q * Q_N)	0.01057	0.01139	0.03429
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00643	0.00725	0.03014
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01057	0.01139	0.03428

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00196	0.00190	0.00414	0.00562	0.00285	1.06310

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.60108	1.07668

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)	0.26727	0.97258	8.55327

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)	0.22164	0.67029	4.52735
	RESET_B->Q (FF)	0.30147	0.80351	5.00427

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)	-0.01721	0.02491	1.53392
	setup	CLK_N (F)	0.13235	0.07366	-1.45712

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)	-0.12818	-0.16247	-0.44935
	setup	CLK_N (F)	0.31812	0.33246	0.50715

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)	-0.01721	0.02491	1.53380
	hold	CLK_N (F)	-0.01847	0.02271	1.53392
	setup	CLK_N (F)	0.13235	0.07344	-1.45712
	setup	CLK_N (F)	0.13229	0.07366	-1.45766

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)	-0.12818	-0.16247	-0.44970
	hold	CLK_N (F)	-0.12927	-0.16247	-0.44935
	setup	CLK_N (F)	0.31804	0.33246	0.50703
	setup	CLK_N (F)	0.31812	0.33229	0.50715

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)	-0.03899	0.01291	1.49230
	setup	CLK_N (F)	0.15391	0.08500	-1.40237

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)	-0.16609	-0.19553	-0.65031
	setup	CLK_N (F)	0.37878	0.38486	0.75311

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)	-0.03899	0.01291	1.49230
	hold	CLK_N (F)	-0.04251	0.00254	1.45916
	setup	CLK_N (F)	0.14873	0.07912	-1.42704
	setup	CLK_N (F)	0.15391	0.08500	-1.40237

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)	-0.17880	-0.21167	-0.69766
	hold	CLK_N (F)	-0.16609	-0.19553	-0.65031
	setup	CLK_N (F)	0.37878	0.38486	0.75311
	setup	CLK_N (F)	0.37811	0.38330	0.70984

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)	-0.01935	0.01650	1.69377
	setup	CLK_N (F)	0.37874	0.29188	-1.42834

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)	-0.08931	-0.09075	-0.03893
	setup	CLK_N (F)	0.33457	0.34272	0.62585

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)	-0.17849	-0.12020	1.69377
	hold	CLK_N (F)	-0.01935	0.01650	1.50140
	setup	CLK_N (F)	0.37874	0.29188	-1.65854
	setup	CLK_N (F)	0.13207	0.07573	-1.42834

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)	-0.08931	-0.09075	-0.03893
	hold	CLK_N (F)	-0.14965	-0.17482	-0.56929
	setup	CLK_N (F)	0.20307	0.18106	0.06936
	setup	CLK_N (F)	0.33457	0.34272	0.62585

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)	0.17077	0.08500	-1.34507
	removal	CLK_N (F)	-0.11679	-0.02991	1.44657

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)	0.16892	0.07815	-1.35856
	recovery	CLK_N (F)	0.16097	0.06840	-1.41971
	recovery	CLK_N (F)	0.15991	0.06110	-1.43686
	recovery	CLK_N (F)	0.17077	0.08500	-1.34507
	removal	CLK_N (F)	-0.12601	-0.04671	1.36749
	removal	CLK_N (F)	-0.11945	-0.03709	1.43046
	removal	CLK_N (F)	-0.11679	-0.02991	1.44657
	removal	CLK_N (F)	-0.12978	-0.05147	1.35236

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 ()	0.13189	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.15974	0.67627	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 ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.21798	0.67627	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 ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK_N ()	0.14202	0.67627	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	0.02151	0.02267	0.04695
	CLK_N	0.02578	0.02696	0.05129

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01995	0.02078	0.04505
	CLK_N	0.02371	0.02453	0.04834
	RESET_B	0.02149	0.02190	0.04874
	RESET_B	0.03091	0.03129	0.05753

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)**	0.00115	0.00116	0.00116
	(CLK_N * RESET_B * SCD * SCE)	-0.00061	-0.00062	-0.00061
	(CLK_N * RESET_B * SCD * !SCE)	0.01167	0.01185	0.02376
	(CLK_N * RESET_B * SCD * !SCE)	0.00838	0.00855	0.02047
	(CLK_N * RESET_B * !SCD * !SCE)	0.01167	0.01185	0.02376
	(CLK_N * RESET_B * !SCD * !SCE)	0.00838	0.00855	0.02047
	(CLK_N * !SCD * SCE)	0.00066	0.00066	0.00065
	(CLK_N * !SCD * SCE)	-0.00124	-0.00127	-0.00128
	(CLK_N * !RESET_B * SCD * SCE)	0.00064	0.00064	0.00063
	(CLK_N * !RESET_B * SCD * SCE)	-0.00126	-0.00128	-0.00128
	(CLK_N * !RESET_B * SCD * !SCE)	0.00034	0.00034	0.00030
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00156	-0.00156	-0.00163
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00034	0.00034	0.00030
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00160	-0.00160	-0.00164
	(!CLK_N * RESET_B * SCD * SCE)	0.00116	0.00116	0.00116
	(!CLK_N * RESET_B * SCD * SCE)	-0.00062	-0.00062	-0.00061
	(!CLK_N * RESET_B * SCD * !SCE)	0.00508	0.00516	0.01675
	(!CLK_N * RESET_B * SCD * !SCE)	0.00176	0.00184	0.01342
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00508	0.00516	0.01675
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00176	0.00184	0.01342
	(!CLK_N * !SCD * SCE)	0.00065	0.00066	0.00064
	(!CLK_N * !SCD * SCE)	-0.00124	-0.00126	-0.00128
	(!CLK_N * !RESET_B * SCD * SCE)	0.00064	0.00064	0.00063
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00126	-0.00128	-0.00128
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00034	0.00034	0.00030
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00156	-0.00156	-0.00163
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00034	0.00034	0.00030
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00160	-0.00160	-0.00164

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)**	-0.00110	-0.00111	-0.00114
	(CLK_N * RESET_B * SCD * SCE)	0.00066	0.00066	0.00064
	(CLK_N * RESET_B * SCD * !SCE)	0.00784	0.00821	0.02210
	(CLK_N * RESET_B * SCD * !SCE)	0.01113	0.01150	0.02538
	(CLK_N * RESET_B * !SCD * !SCE)	0.00781	0.00821	0.02210
	(CLK_N * RESET_B * !SCD * !SCE)	0.01112	0.01150	0.02538
	(CLK_N * !SCD * SCE)	-0.00062	-0.00063	-0.00062
	(CLK_N * !SCD * SCE)	0.00128	0.00129	0.00128
	(CLK_N * !RESET_B * SCD * SCE)	-0.00062	-0.00062	-0.00062
	(CLK_N * !RESET_B * SCD * SCE)	0.00128	0.00129	0.00128
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(CLK_N * !RESET_B * SCD * !SCE)	0.00165	0.00167	0.00165
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00165	0.00167	0.00165
	(!CLK_N * RESET_B * SCD * SCE)	-0.00110	-0.00112	-0.00114
	(!CLK_N * RESET_B * SCD * SCE)	0.00066	0.00066	0.00064
	(!CLK_N * RESET_B * SCD * !SCE)	0.00111	0.00152	0.01354
	(!CLK_N * RESET_B * SCD * !SCE)	0.00444	0.00484	0.01686
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00112	0.00152	0.01354
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00443	0.00483	0.01686
	(!CLK_N * !SCD * SCE)	-0.00063	-0.00063	-0.00063
	(!CLK_N * !SCD * SCE)	0.00128	0.00129	0.00128
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00062	-0.00062	-0.00062
	(!CLK_N * !RESET_B * SCD * SCE)	0.00128	0.00129	0.00128
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00165	0.00167	0.00165
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00028	-0.00028	-0.00027
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00165	0.00167	0.00165

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)**	0.01310	0.01310	0.02123
	(CLK_N * D * RESET_B * SCE)	0.00901	0.00900	0.01713
	(CLK_N * D * RESET_B * !SCE)	0.00105	0.00090	0.00088
	(CLK_N * D * RESET_B * !SCE)	-0.00108	-0.00123	-0.00125
	(CLK_N * D * !RESET_B * SCE)	0.00058	0.00059	0.00057
	(CLK_N * D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(CLK_N * D * !RESET_B * !SCE)	0.00038	0.00038	0.00037
	(CLK_N * D * !RESET_B * !SCE)	-0.00139	-0.00141	-0.00140
	(CLK_N * !D * RESET_B * SCE)	0.01383	0.01382	0.02171
	(CLK_N * !D * RESET_B * SCE)	0.00959	0.00958	0.01747
	(CLK_N * !D * !RESET_B * SCE)	0.00058	0.00059	0.00057
	(CLK_N * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(!D * RESET_B * !SCE)	0.00077	0.00077	0.00077
	(!D * RESET_B * !SCE)	-0.00135	-0.00136	-0.00136
	(!D * !RESET_B * !SCE)	0.00044	0.00043	0.00043
	(!D * !RESET_B * !SCE)	-0.00147	-0.00147	-0.00147
	(!CLK_N * D * RESET_B * SCE)	0.00652	0.00648	0.01416
	(!CLK_N * D * RESET_B * SCE)	0.00240	0.00235	0.01003
	(!CLK_N * D * RESET_B * !SCE)	0.00104	0.00090	0.00088
	(!CLK_N * D * RESET_B * !SCE)	-0.00108	-0.00123	-0.00125
	(!CLK_N * D * !RESET_B * SCE)	0.00058	0.00059	0.00057
	(!CLK_N * D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121
	(!CLK_N * D * !RESET_B * !SCE)	0.00038	0.00038	0.00037
	(!CLK_N * D * !RESET_B * !SCE)	-0.00140	-0.00141	-0.00140
	(!CLK_N * !D * RESET_B * SCE)	0.00725	0.00720	0.01460
	(!CLK_N * !D * RESET_B * SCE)	0.00297	0.00292	0.01033
	(!CLK_N * !D * !RESET_B * SCE)	0.00058	0.00059	0.00057
	(!CLK_N * !D * !RESET_B * SCE)	-0.00122	-0.00122	-0.00121

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)**	0.00897	0.00897	0.01836
	(CLK_N * D * RESET_B * SCE)	0.01307	0.01307	0.02245
	(CLK_N * D * RESET_B * !SCE)	-0.00084	-0.00086	-0.00086
	(CLK_N * D * RESET_B * !SCE)	0.00127	0.00128	0.00127
	(CLK_N * D * !RESET_B * SCE)	-0.00054	-0.00055	-0.00054
	(CLK_N * D * !RESET_B * SCE)	0.00125	0.00126	0.00123
	(CLK_N * D * !RESET_B * !SCE)	-0.00036	-0.00036	-0.00036
	(CLK_N * D * !RESET_B * !SCE)	0.00141	0.00142	0.00141
	(CLK_N * !D * RESET_B * SCE)	0.00865	0.00870	0.01807
	(CLK_N * !D * RESET_B * SCE)	0.01290	0.01294	0.02230
	(CLK_N * !D * !RESET_B * SCE)	-0.00054	-0.00055	-0.00054
	(CLK_N * !D * !RESET_B * SCE)	0.00125	0.00126	0.00123
	(!D * RESET_B * !SCE)	-0.00070	-0.00076	-0.00076
	(!D * RESET_B * !SCE)	0.00140	0.00138	0.00137
	(!D * !RESET_B * !SCE)	-0.00044	-0.00043	-0.00043
	(!D * !RESET_B * !SCE)	0.00148	0.00150	0.00150
	(!CLK_N * D * RESET_B * SCE)	0.00224	0.00215	0.00995
	(!CLK_N * D * RESET_B * SCE)	0.00637	0.00630	0.01407
	(!CLK_N * D * RESET_B * !SCE)	-0.00084	-0.00086	-0.00087
	(!CLK_N * D * RESET_B * !SCE)	0.00127	0.00128	0.00127
	(!CLK_N * D * !RESET_B * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK_N * D * !RESET_B * SCE)	0.00125	0.00126	0.00123
	(!CLK_N * D * !RESET_B * !SCE)	-0.00036	-0.00036	-0.00036
	(!CLK_N * D * !RESET_B * !SCE)	0.00141	0.00142	0.00141
	(!CLK_N * !D * RESET_B * SCE)	0.00186	0.00179	0.00975
	(!CLK_N * !D * RESET_B * SCE)	0.00614	0.00607	0.01401
	(!CLK_N * !D * !RESET_B * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK_N * !D * !RESET_B * SCE)	0.00125	0.00126	0.00123

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)	0.00518	0.00529	0.02097
	(CLK_N * D * RESET_B * SCD)	-0.00043	-0.00035	0.01536
	(CLK_N * D * RESET_B * !SCD)	0.01453	0.01479	0.03088
	(CLK_N * D * RESET_B * !SCD)	0.01073	0.01096	0.02705
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00510	0.00544	0.02113
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00022	0.00008	0.01578
	(CLK_N * !D * RESET_B * SCD)	0.01669	0.01703	0.04177
	(CLK_N * !D * RESET_B * SCD)	0.00948	0.00980	0.03458
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00518	0.00529	0.02097
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00043	-0.00035	0.01536
	(!CLK_N * D * RESET_B * !SCD)	0.00791	0.00807	0.02402
	(!CLK_N * D * RESET_B * !SCD)	0.00414	0.00429	0.02021
	(!CLK_N * !D * RESET_B * SCD)	0.01011	0.01039	0.03444
	(!CLK_N * !D * RESET_B * SCD)	0.00287	0.00312	0.02722

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)	-0.00027	0.00050	0.01636
	(CLK_N * D * RESET_B * SCD)	0.00531	0.00611	0.02195
	(CLK_N * D * RESET_B * !SCD)	0.01147	0.01212	0.02803
	(CLK_N * D * RESET_B * !SCD)	0.01530	0.01595	0.03173
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00029	0.00044	0.01621
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00505	0.00579	0.02154
	(CLK_N * !D * RESET_B * SCD)	0.00818	0.00882	0.03378
	(CLK_N * !D * RESET_B * SCD)	0.01538	0.01602	0.04100
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00028	0.00047	0.01635
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00531	0.00609	0.02196
	(!CLK_N * D * RESET_B * !SCD)	0.00490	0.00549	0.02144
	(!CLK_N * D * RESET_B * !SCD)	0.00871	0.00928	0.02510
	(!CLK_N * !D * RESET_B * SCD)	0.00148	0.00207	0.02597
	(!CLK_N * !D * RESET_B * SCD)	0.00871	0.00932	0.03319

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01698	0.01653	0.03073
	(CLK_N * D * SCD * SCE * !Q)	0.00746	0.00696	0.02118
	(CLK_N * D * SCD * !SCE * !Q)	0.01675	0.01629	0.03087
	(CLK_N * D * SCD * !SCE * !Q)	0.00759	0.00705	0.02168
	(CLK_N * D * !SCD * SCE * !Q)	0.00353	0.00358	0.00354
	(CLK_N * D * !SCD * SCE * !Q)	-0.00358	-0.00361	-0.00358
	(CLK_N * D * !SCD * !SCE * !Q)	0.01633	0.01588	0.03080
	(CLK_N * D * !SCD * !SCE * !Q)	0.00757	0.00708	0.02202
	(CLK_N * !D * SCD * SCE * !Q)	0.01772	0.01727	0.03110
	(CLK_N * !D * SCD * SCE * !Q)	0.00805	0.00754	0.02141
	(CLK_N * !D * SCD * !SCE * !Q)	0.00350	0.00353	0.00351
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00360	-0.00362	-0.00360
	(CLK_N * !D * !SCD * SCE * !Q)	0.00353	0.00357	0.00354
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00358	-0.00360	-0.00358
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00351	0.00354	0.00352
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00360	-0.00362	-0.00361
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00975	0.00962	0.02186
	(!CLK_N * D * SCD * SCE * !Q)	0.00017	-0.00000	0.01226
	(!CLK_N * D * SCD * !SCE * !Q)	0.00952	0.00938	0.02200
	(!CLK_N * D * SCD * !SCE * !Q)	0.00027	0.00010	0.01275
	(!CLK_N * D * !SCD * SCE * !Q)	0.00344	0.00346	0.00345
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00367	-0.00368	-0.00368
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00909	0.00897	0.02179
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00028	0.00014	0.01298
	(!CLK_N * !D * SCD * SCE * !Q)	0.01049	0.01033	0.02224
	(!CLK_N * !D * SCD * SCE * !Q)	0.00075	0.00057	0.01250
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00341	0.00345	0.00342
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00369	-0.00372	-0.00369
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00344	0.00348	0.00345
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00367	-0.00369	-0.00368
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00342	0.00346	0.00342
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00370	-0.00373	-0.00370

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00754	0.00751	0.02491
	(CLK_N * D * SCD * SCE * !Q)	0.01714	0.01710	0.03447
	(CLK_N * D * SCD * !SCE * !Q)	0.00662	0.00653	0.02386
	(CLK_N * D * SCD * !SCE * !Q)	0.01587	0.01578	0.03308
	(CLK_N * D * !SCD * SCE * !Q)	-0.00348	-0.00355	-0.00354
	(CLK_N * D * !SCD * SCE * !Q)	0.00365	0.00362	0.00360
	(CLK_N * D * !SCD * !SCE * !Q)	0.00634	0.00628	0.02379
	(CLK_N * D * !SCD * !SCE * !Q)	0.01516	0.01506	0.03255
	(CLK_N * !D * SCD * SCE * !Q)	0.00718	0.00711	0.02480
	(CLK_N * !D * SCD * SCE * !Q)	0.01692	0.01685	0.03450
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00342	-0.00352	-0.00351
	(CLK_N * !D * SCD * !SCE * !Q)	0.00368	0.00362	0.00361
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00348	-0.00355	-0.00354
	(CLK_N * !D * !SCD * SCE * !Q)	0.00365	0.00362	0.00360
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00344	-0.00352	-0.00352
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00369	0.00363	0.00361
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00045	0.00080	0.01470
	(!CLK_N * D * SCD * SCE * !Q)	0.01008	0.01043	0.02429
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00045	-0.00014	0.01374
	(!CLK_N * D * SCD * !SCE * !Q)	0.00878	0.00913	0.02299
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00339	-0.00346	-0.00345
	(!CLK_N * D * !SCD * SCE * !Q)	0.00374	0.00372	0.00369
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00073	-0.00037	0.01365
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00805	0.00848	0.02247
	(!CLK_N * !D * SCD * SCE * !Q)	0.00011	0.00047	0.01451
	(!CLK_N * !D * SCD * SCE * !Q)	0.00982	0.01023	0.02426
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00333	-0.00344	-0.00342
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00378	0.00374	0.00370
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00339	-0.00345	-0.00345
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00374	0.00371	0.00369
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00334	-0.00344	-0.00342
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00379	0.00375	0.00371

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)**	0.01195	0.01207	0.03444
	(D * RESET_B * SCD * SCE * Q)	0.00793	0.00804	0.03042
	(D * RESET_B * SCD * SCE * !Q)	0.01899	0.01917	0.04186
	(D * RESET_B * SCD * SCE * !Q)	0.01499	0.01516	0.03788
	(D * RESET_B * SCD * !SCE * Q)	0.01195	0.01207	0.03444
	(D * RESET_B * SCD * !SCE * Q)	0.00792	0.00804	0.03042
	(D * RESET_B * SCD * !SCE * !Q)	0.01896	0.01914	0.04188
	(D * RESET_B * SCD * !SCE * !Q)	0.01497	0.01514	0.03789
	(D * RESET_B * !SCD * SCE * Q)	0.01820	0.01814	0.04072
	(D * RESET_B * !SCD * SCE * Q)	0.01416	0.01409	0.03669
	(D * RESET_B * !SCD * !SCE * Q)	0.01195	0.01207	0.03444
	(D * RESET_B * !SCD * !SCE * Q)	0.00793	0.00804	0.03042
	(D * RESET_B * !SCD * !SCE * !Q)	0.01896	0.01914	0.04188
	(D * RESET_B * !SCD * !SCE * !Q)	0.01497	0.01514	0.03789
	(D * !SCD * SCE * !Q)	0.01177	0.01190	0.03423
	(D * !SCD * SCE * !Q)	0.00774	0.00786	0.03020
	(D * !RESET_B * SCD * SCE * !Q)	0.01177	0.01191	0.03423
	(D * !RESET_B * SCD * SCE * !Q)	0.00775	0.00787	0.03021
	(D * !RESET_B * SCD * !SCE * !Q)	0.01177	0.01190	0.03424
	(D * !RESET_B * SCD * !SCE * !Q)	0.00774	0.00787	0.03021
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01177	0.01190	0.03424
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00774	0.00787	0.03021
	(!D * RESET_B * SCD * SCE * Q)	0.01195	0.01207	0.03444
	(!D * RESET_B * SCD * SCE * Q)	0.00793	0.00804	0.03042
	(!D * RESET_B * SCD * SCE * !Q)	0.01902	0.01920	0.04194
	(!D * RESET_B * SCD * SCE * !Q)	0.01501	0.01518	0.03793
	(!D * RESET_B * !SCE * Q)	0.01817	0.01812	0.04068
	(!D * RESET_B * !SCE * Q)	0.01411	0.01405	0.03664
	(!D * RESET_B * !SCD * SCE * Q)	0.01819	0.01814	0.04071
	(!D * RESET_B * !SCD * SCE * Q)	0.01414	0.01408	0.03666
	(!D * !SCE * !Q)	0.01177	0.01189	0.03423
	(!D * !SCE * !Q)	0.00774	0.00786	0.03020
	(!D * !SCD * SCE * !Q)	0.01177	0.01190	0.03423
	(!D * !SCD * SCE * !Q)	0.00774	0.00787	0.03020
	(!D * !RESET_B * SCD * SCE * !Q)	0.01177	0.01191	0.03423
	(!D * !RESET_B * SCD * SCE * !Q)	0.00775	0.00787	0.03021

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)	0.00868	0.00934	0.03234
	(D * RESET_B * SCD * SCE * Q)	0.01271	0.01337	0.03636
	(D * RESET_B * SCD * !SCE * Q)	0.00868	0.00934	0.03233
	(D * RESET_B * SCD * !SCE * Q)	0.01271	0.01337	0.03636
	(D * RESET_B * !SCD * !SCE * Q)	0.00868	0.00934	0.03234
	(D * RESET_B * !SCD * !SCE * Q)	0.01271	0.01337	0.03636
	(D * !SCD * SCE * !Q)	0.00867	0.00934	0.03233
	(D * !SCD * SCE * !Q)	0.01270	0.01335	0.03636
	(D * !RESET_B * SCD * SCE * !Q)	0.00868	0.00935	0.03232
	(D * !RESET_B * SCD * SCE * !Q)	0.01271	0.01336	0.03635
	(D * !RESET_B * SCD * !SCE * !Q)	0.00867	0.00934	0.03232
	(D * !RESET_B * SCD * !SCE * !Q)	0.01270	0.01336	0.03635
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00867	0.00934	0.03232
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01270	0.01336	0.03635
	(!D * RESET_B * SCD * SCE * Q)	0.00868	0.00934	0.03234
	(!D * RESET_B * SCD * SCE * Q)	0.01271	0.01338	0.03636
	(!D * !SCE * !Q)	0.00867	0.00934	0.03233
	(!D * !SCE * !Q)	0.01270	0.01335	0.03636
	(!D * !SCD * SCE * !Q)	0.00867	0.00934	0.03233
	(!D * !SCD * SCE * !Q)	0.01270	0.01335	0.03636
	(!D * !RESET_B * SCD * SCE * !Q)	0.00868	0.00935	0.03232
	(!D * !RESET_B * SCD * SCE * !Q)	0.01271	0.01336	0.03635

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00188	0.00195	0.00415	0.00563	0.00306	1.06925
sky130_fd_sc_hs__sdfrtp_2	0.00182	0.00196	0.00423	0.00570	0.00306	2.13302
sky130_fd_sc_hs__sdfrtp_4	0.00183	0.00194	0.00426	0.00563	0.00305	4.01560

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.60108	1.07668
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.58776	1.01718
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.81172	1.38602

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)	0.20688	0.72327	6.28114
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.22115	0.63592	6.33076
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.25631	0.60223	6.43666

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.21204	0.47002	2.24148
	RESET_B->Q (FF)	0.30028	0.80201	5.01689
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.22026	0.44684	2.27015
	RESET_B->Q (FF)	0.31093	0.78289	5.06330
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.22959	0.42665	2.20217
	RESET_B->Q (FF)	0.31822	0.76122	4.99110

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)	-0.10630	-0.21154	-1.11103
	setup	CLK (R)	0.20350	0.26946	1.23843
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10093	-0.20396	-1.08060
	setup	CLK (R)	0.20420	0.26348	1.21744
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10249	-0.20396	-1.08120
	setup	CLK (R)	0.18900	0.25436	1.21845

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)	-0.10103	-0.24056	-2.50346
	setup	CLK (R)	0.25877	0.37239	2.94656
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09983	-0.23510	-2.43020
	setup	CLK (R)	0.24653	0.35749	2.90855
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10849	-0.24226	-2.39451
	setup	CLK (R)	0.24269	0.35978	2.90214

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)	-0.10630	-0.21154	-1.11103
	hold	CLK (R)	-0.10814	-0.21169	-1.11108
	setup	CLK (R)	0.20348	0.26946	1.23630
	setup	CLK (R)	0.20350	0.26945	1.23843
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10153	-0.20396	-1.08065
	hold	CLK (R)	-0.10093	-0.20396	-1.08060
	setup	CLK (R)	0.20389	0.26335	1.21744
	setup	CLK (R)	0.20420	0.26348	1.21504
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10273	-0.20396	-1.08206
	hold	CLK (R)	-0.10249	-0.20404	-1.08120
	setup	CLK (R)	0.18900	0.25432	1.21534
	setup	CLK (R)	0.18570	0.25436	1.21845

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)	-0.10103	-0.24064	-2.50346
	hold	CLK (R)	-0.10119	-0.24056	-2.50620
	setup	CLK (R)	0.25877	0.37141	2.94656
	setup	CLK (R)	0.25857	0.37239	2.94598
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09983	-0.23513	-2.43020
	hold	CLK (R)	-0.09998	-0.23510	-2.43020
	setup	CLK (R)	0.24609	0.35749	2.90811
	setup	CLK (R)	0.24653	0.35742	2.90855
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10849	-0.24236	-2.39451
	hold	CLK (R)	-0.10863	-0.24226	-2.39458
	setup	CLK (R)	0.24238	0.35978	2.90210
	setup	CLK (R)	0.24269	0.35973	2.90214

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)	-0.12377	-0.22267	-1.13804
	setup	CLK (R)	0.22437	0.28262	1.24917
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12263	-0.21732	-1.11155
	setup	CLK (R)	0.22462	0.28060	1.22791
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12347	-0.21712	-1.11172
	setup	CLK (R)	0.20864	0.26904	1.22078

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)	-0.12847	-0.27584	-2.75700
	setup	CLK (R)	0.32006	0.42835	3.14900
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13410	-0.27632	-2.69954
	setup	CLK (R)	0.31223	0.41929	3.11917
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14285	-0.28571	-2.66703
	setup	CLK (R)	0.30889	0.41920	3.12319

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)	-0.12377	-0.22267	-1.13804
	hold	CLK (R)	-0.13015	-0.23266	-1.14782
	setup	CLK (R)	0.22383	0.27634	1.24078
	setup	CLK (R)	0.22437	0.28262	1.24917
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12263	-0.21732	-1.11155
	hold	CLK (R)	-0.12715	-0.22371	-1.11652
	setup	CLK (R)	0.22222	0.27506	1.21859
	setup	CLK (R)	0.22462	0.28060	1.22791
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12347	-0.21712	-1.11249
	hold	CLK (R)	-0.12850	-0.22503	-1.11172
	setup	CLK (R)	0.20851	0.26375	1.21927
	setup	CLK (R)	0.20864	0.26904	1.22078

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)	-0.14085	-0.28846	-2.78798
	hold	CLK (R)	-0.12847	-0.27584	-2.75700
	setup	CLK (R)	0.32006	0.42835	3.14900
	setup	CLK (R)	0.31074	0.42309	3.14417
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14464	-0.28669	-2.73589
	hold	CLK (R)	-0.13410	-0.27632	-2.69954
	setup	CLK (R)	0.31223	0.41929	3.11917
	setup	CLK (R)	0.30551	0.41644	3.11820
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15728	-0.29915	-2.69487
	hold	CLK (R)	-0.14285	-0.28571	-2.66703
	setup	CLK (R)	0.30889	0.41920	3.12319
	setup	CLK (R)	0.30011	0.41387	3.11703

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)	-0.10698	-0.19434	-0.34622
	setup	CLK (R)	0.31885	0.33490	1.22476
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.10778	-0.18964	-0.31547
	setup	CLK (R)	0.30890	0.31937	1.21605
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10784	-0.19961	-0.29855
	setup	CLK (R)	0.30481	0.32071	1.20823

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)	-0.11373	-0.24485	-2.61271
	setup	CLK (R)	0.27272	0.37686	2.98410
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11180	-0.23692	-2.55023
	setup	CLK (R)	0.26761	0.36436	2.94223
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12010	-0.24937	-2.50641
	setup	CLK (R)	0.25675	0.36146	2.93947

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)	-0.14023	-0.19434	-0.34622
	hold	CLK (R)	-0.10698	-0.21558	-1.11088
	setup	CLK (R)	0.31885	0.33490	0.54565
	setup	CLK (R)	0.20185	0.27082	1.22476
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14120	-0.18964	-0.31547
	hold	CLK (R)	-0.10778	-0.21025	-1.08848
	setup	CLK (R)	0.30890	0.31937	0.52899
	setup	CLK (R)	0.20401	0.26781	1.21605
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.15251	-0.19961	-0.29855
	hold	CLK (R)	-0.10784	-0.21003	-1.08482
	setup	CLK (R)	0.30481	0.32071	0.53258
	setup	CLK (R)	0.18746	0.25854	1.20823

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)	-0.17437	-0.32151	-2.63399
	hold	CLK (R)	-0.11373	-0.24485	-2.61271
	setup	CLK (R)	0.27272	0.37236	2.69574
	setup	CLK (R)	0.27151	0.37686	2.98410
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.16807	-0.31277	-2.60711
	hold	CLK (R)	-0.11180	-0.23692	-2.55023
	setup	CLK (R)	0.26761	0.36436	2.67326
	setup	CLK (R)	0.25839	0.36408	2.94223
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.17095	-0.31296	-2.60887
	hold	CLK (R)	-0.12010	-0.24937	-2.50641
	setup	CLK (R)	0.25479	0.35843	2.67028
	setup	CLK (R)	0.25675	0.36146	2.93947

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)	0.24484	0.28218	1.34186
	removal	CLK (R)	-0.16626	-0.22073	-1.19908
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.24664	0.27946	1.33316
	removal	CLK (R)	-0.16749	-0.21596	-1.17797
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.22779	0.26904	1.32779
	removal	CLK (R)	-0.16645	-0.21516	-1.17613

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)	0.24270	0.27581	1.34186
	recovery	CLK (R)	0.23778	0.26918	1.28896
	recovery	CLK (R)	0.23410	0.25964	1.26866
	recovery	CLK (R)	0.24484	0.28218	1.34132
	removal	CLK (R)	-0.17615	-0.23910	-1.27053
	removal	CLK (R)	-0.17020	-0.23110	-1.22104
	removal	CLK (R)	-0.16626	-0.22073	-1.19908
	removal	CLK (R)	-0.18088	-0.24697	-1.27568
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.24234	0.27468	1.32547
	recovery	CLK (R)	0.23647	0.26368	1.27730
	recovery	CLK (R)	0.23068	0.25622	1.25451
	recovery	CLK (R)	0.24664	0.27946	1.33316
	removal	CLK (R)	-0.17833	-0.23669	-1.25399
	removal	CLK (R)	-0.17178	-0.22467	-1.20336
	removal	CLK (R)	-0.16749	-0.21596	-1.17797
	removal	CLK (R)	-0.18211	-0.24220	-1.25857
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.22587	0.26279	1.32779
	recovery	CLK (R)	0.21906	0.25340	1.27767
	recovery	CLK (R)	0.21678	0.24701	1.25697
	recovery	CLK (R)	0.22779	0.26904	1.32623
	removal	CLK (R)	-0.17344	-0.23589	-1.25406
	removal	CLK (R)	-0.17111	-0.22631	-1.20204
	removal	CLK (R)	-0.16645	-0.21516	-1.17613
	removal	CLK (R)	-0.18002	-0.24129	-1.25284

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 ()	0.15721	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.12682	0.67627	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.15974	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.12936	0.67627	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.15721	0.67627	16.50020
	min_pulse_width	RESET_B ()	0.12936	0.67627	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 ()	0.10404	0.67627	16.50020
	min_pulse_width	CLK ()	0.08125	0.67627	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.11670	0.67627	16.50020
	min_pulse_width	CLK ()	0.08125	0.67627	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.13695	0.67627	16.50020
	min_pulse_width	CLK ()	0.08378	0.67627	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 ()	0.21038	0.67627	16.50020
	min_pulse_width	CLK ()	0.22811	0.67627	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.22051	0.67627	16.50020
	min_pulse_width	CLK ()	0.23570	0.67627	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.20532	0.67627	16.50020
	min_pulse_width	CLK ()	0.23064	0.67627	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	0.02421	0.02464	0.04796
	CLK	0.01996	0.02039	0.04397
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02739	0.02815	0.05142
	CLK	0.02302	0.02378	0.04745
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03310	0.03411	0.05744
	CLK	0.02882	0.02984	0.05378

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.02512	0.02583	0.04914
	CLK	0.02096	0.02159	0.04499
	RESET_B	0.02093	0.02139	0.04843
	RESET_B	0.03076	0.03122	0.05762
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02769	0.02878	0.05223
	CLK	0.02361	0.02470	0.04773
	RESET_B	0.02354	0.02436	0.05261
	RESET_B	0.03383	0.03468	0.06113
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03434	0.03612	0.06038
	CLK	0.03017	0.03190	0.05538
	RESET_B	0.03015	0.03168	0.06090
	RESET_B	0.04042	0.04197	0.06857

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)**	0.00115	0.00117	0.00115
	(CLK * RESET_B * SCD * SCE)	-0.00056	-0.00057	-0.00056
	(CLK * RESET_B * SCD * !SCE)	0.00566	0.00572	0.01736
	(CLK * RESET_B * SCD * !SCE)	0.00238	0.00243	0.01407
	(CLK * RESET_B * !SCD * !SCE)	0.00566	0.00572	0.01736
	(CLK * RESET_B * !SCD * !SCE)	0.00238	0.00243	0.01407
	(CLK * !SCD * SCE)	0.00060	0.00060	0.00059
	(CLK * !SCD * SCE)	-0.00124	-0.00126	-0.00128
	(CLK * !RESET_B * SCD * SCE)	0.00058	0.00058	0.00057
	(CLK * !RESET_B * SCD * SCE)	-0.00125	-0.00127	-0.00128
	(CLK * !RESET_B * SCD * !SCE)	0.00041	0.00041	0.00036
	(CLK * !RESET_B * SCD * !SCE)	-0.00141	-0.00143	-0.00149
	(CLK * !RESET_B * !SCD * !SCE)	0.00040	0.00041	0.00037
	(CLK * !RESET_B * !SCD * !SCE)	-0.00145	-0.00146	-0.00151
	(!CLK * RESET_B * SCD * SCE)	0.00115	0.00116	0.00115
	(!CLK * RESET_B * SCD * SCE)	-0.00056	-0.00057	-0.00056
	(!CLK * RESET_B * SCD * !SCE)	0.01190	0.01207	0.02421
	(!CLK * RESET_B * SCD * !SCE)	0.00844	0.00860	0.02075
	(!CLK * RESET_B * !SCD * !SCE)	0.01190	0.01207	0.02421
	(!CLK * RESET_B * !SCD * !SCE)	0.00845	0.00860	0.02075
	(!CLK * !SCD * SCE)	0.00060	0.00060	0.00059
	(!CLK * !SCD * SCE)	-0.00124	-0.00125	-0.00128
	(!CLK * !RESET_B * SCD * SCE)	0.00058	0.00058	0.00057
	(!CLK * !RESET_B * SCD * SCE)	-0.00125	-0.00127	-0.00128
	(!CLK * !RESET_B * SCD * !SCE)	0.00041	0.00041	0.00036
	(!CLK * !RESET_B * SCD * !SCE)	-0.00141	-0.00143	-0.00149
	(!CLK * !RESET_B * !SCD * !SCE)	0.00041	0.00041	0.00037
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00145	-0.00146	-0.00151

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00109	0.00110	0.00110
	(CLK * RESET_B * SCD * SCE)	-0.00053	-0.00053	-0.00053
	(CLK * RESET_B * SCD * !SCE)	0.00482	0.00493	0.01684
	(CLK * RESET_B * SCD * !SCE)	0.00168	0.00178	0.01370
	(CLK * RESET_B * !SCD * !SCE)	0.00482	0.00493	0.01684
	(CLK * RESET_B * !SCD * !SCE)	0.00168	0.00178	0.01370
	(CLK * !SCD * SCE)	0.00058	0.00058	0.00057
	(CLK * !SCD * SCE)	-0.00117	-0.00119	-0.00121
	(CLK * !RESET_B * SCD * SCE)	0.00056	0.00056	0.00055
	(CLK * !RESET_B * SCD * SCE)	-0.00118	-0.00120	-0.00121
	(CLK * !RESET_B * SCD * !SCE)	0.00040	0.00040	0.00035
	(CLK * !RESET_B * SCD * !SCE)	-0.00134	-0.00135	-0.00142
	(CLK * !RESET_B * !SCD * !SCE)	0.00040	0.00039	0.00035
	(CLK * !RESET_B * !SCD * !SCE)	-0.00138	-0.00139	-0.00143
	(!CLK * RESET_B * SCD * SCE)	0.00109	0.00110	0.00110
	(!CLK * RESET_B * SCD * SCE)	-0.00053	-0.00053	-0.00053
	(!CLK * RESET_B * SCD * !SCE)	0.01129	0.01145	0.02380
	(!CLK * RESET_B * SCD * !SCE)	0.00799	0.00815	0.02049
	(!CLK * RESET_B * !SCD * !SCE)	0.01130	0.01146	0.02380
	(!CLK * RESET_B * !SCD * !SCE)	0.00800	0.00815	0.02049
	(!CLK * !SCD * SCE)	0.00058	0.00059	0.00057
	(!CLK * !SCD * SCE)	-0.00116	-0.00119	-0.00120
	(!CLK * !RESET_B * SCD * SCE)	0.00056	0.00056	0.00055
	(!CLK * !RESET_B * SCD * SCE)	-0.00118	-0.00120	-0.00121
	(!CLK * !RESET_B * SCD * !SCE)	0.00040	0.00040	0.00035
	(!CLK * !RESET_B * SCD * !SCE)	-0.00134	-0.00135	-0.00142
	(!CLK * !RESET_B * !SCD * !SCE)	0.00040	0.00039	0.00035
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00138	-0.00139	-0.00143

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00110	0.00111	0.00110
	(CLK * RESET_B * SCD * SCE)	-0.00053	-0.00054	-0.00053
	(CLK * RESET_B * SCD * !SCE)	0.00488	0.00499	0.01689
	(CLK * RESET_B * SCD * !SCE)	0.00171	0.00180	0.01371
	(CLK * RESET_B * !SCD * !SCE)	0.00488	0.00499	0.01689
	(CLK * RESET_B * !SCD * !SCE)	0.00171	0.00181	0.01371
	(CLK * !SCD * SCE)	0.00057	0.00058	0.00056
	(CLK * !SCD * SCE)	-0.00118	-0.00120	-0.00122
	(CLK * !RESET_B * SCD * SCE)	0.00056	0.00056	0.00055
	(CLK * !RESET_B * SCD * SCE)	-0.00119	-0.00121	-0.00122
	(CLK * !RESET_B * SCD * !SCE)	0.00041	0.00041	0.00036
	(CLK * !RESET_B * SCD * !SCE)	-0.00134	-0.00134	-0.00141
	(CLK * !RESET_B * !SCD * !SCE)	0.00040	0.00040	0.00036
	(CLK * !RESET_B * !SCD * !SCE)	-0.00138	-0.00138	-0.00142
	(!CLK * RESET_B * SCD * SCE)	0.00110	0.00110	0.00110
	(!CLK * RESET_B * SCD * SCE)	-0.00053	-0.00053	-0.00052
	(!CLK * RESET_B * SCD * !SCE)	0.01139	0.01155	0.02398
	(!CLK * RESET_B * SCD * !SCE)	0.00804	0.00820	0.02063
	(!CLK * RESET_B * !SCD * !SCE)	0.01139	0.01156	0.02398
	(!CLK * RESET_B * !SCD * !SCE)	0.00804	0.00820	0.02063
	(!CLK * !SCD * SCE)	0.00058	0.00059	0.00057
	(!CLK * !SCD * SCE)	-0.00117	-0.00120	-0.00121
	(!CLK * !RESET_B * SCD * SCE)	0.00056	0.00056	0.00055
	(!CLK * !RESET_B * SCD * SCE)	-0.00119	-0.00121	-0.00122
	(!CLK * !RESET_B * SCD * !SCE)	0.00041	0.00041	0.00036
	(!CLK * !RESET_B * SCD * !SCE)	-0.00134	-0.00134	-0.00141
	(!CLK * !RESET_B * !SCD * !SCE)	0.00040	0.00040	0.00036
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00138	-0.00138	-0.00142

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)**	-0.00110	-0.00111	-0.00114
	(CLK * RESET_B * SCD * SCE)	0.00061	0.00061	0.00059
	(CLK * RESET_B * SCD * !SCE)	0.00067	0.00107	0.01317
	(CLK * RESET_B * SCD * !SCE)	0.00396	0.00436	0.01644
	(CLK * RESET_B * !SCD * !SCE)	0.00068	0.00107	0.01317
	(CLK * RESET_B * !SCD * !SCE)	0.00397	0.00434	0.01644
	(CLK * !SCD * SCE)	-0.00057	-0.00058	-0.00057
	(CLK * !SCD * SCE)	0.00127	0.00129	0.00128
	(CLK * !RESET_B * SCD * SCE)	-0.00056	-0.00057	-0.00056
	(CLK * !RESET_B * SCD * SCE)	0.00128	0.00130	0.00128
	(CLK * !RESET_B * SCD * !SCE)	-0.00035	-0.00035	-0.00034
	(CLK * !RESET_B * SCD * !SCE)	0.00152	0.00154	0.00152
	(CLK * !RESET_B * !SCD * !SCE)	-0.00035	-0.00035	-0.00034
	(CLK * !RESET_B * !SCD * !SCE)	0.00152	0.00154	0.00152
	(!CLK * RESET_B * SCD * SCE)	-0.00109	-0.00111	-0.00114
	(!CLK * RESET_B * SCD * SCE)	0.00061	0.00061	0.00059
	(!CLK * RESET_B * SCD * !SCE)	0.00681	0.00724	0.02143
	(!CLK * RESET_B * SCD * !SCE)	0.01027	0.01070	0.02489
	(!CLK * RESET_B * !SCD * !SCE)	0.00681	0.00722	0.02143
	(!CLK * RESET_B * !SCD * !SCE)	0.01027	0.01067	0.02489
	(!CLK * !SCD * SCE)	-0.00056	-0.00058	-0.00057
	(!CLK * !SCD * SCE)	0.00128	0.00130	0.00128
	(!CLK * !RESET_B * SCD * SCE)	-0.00056	-0.00056	-0.00056
	(!CLK * !RESET_B * SCD * SCE)	0.00128	0.00129	0.00128
	(!CLK * !RESET_B * SCD * !SCE)	-0.00035	-0.00035	-0.00034
	(!CLK * !RESET_B * SCD * !SCE)	0.00152	0.00154	0.00152
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00035	-0.00035	-0.00034
	(!CLK * !RESET_B * !SCD * !SCE)	0.00152	0.00154	0.00152

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00104	-0.00106	-0.00108
	(CLK * RESET_B * SCD * SCE)	0.00058	0.00058	0.00055
	(CLK * RESET_B * SCD * !SCE)	0.00072	0.00116	0.01344
	(CLK * RESET_B * SCD * !SCE)	0.00386	0.00431	0.01658
	(CLK * RESET_B * !SCD * !SCE)	0.00072	0.00116	0.01344
	(CLK * RESET_B * !SCD * !SCE)	0.00387	0.00431	0.01658
	(CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00055
	(CLK * !SCD * SCE)	0.00120	0.00121	0.00121
	(CLK * !RESET_B * SCD * SCE)	-0.00054	-0.00054	-0.00054
	(CLK * !RESET_B * SCD * SCE)	0.00121	0.00121	0.00121
	(CLK * !RESET_B * SCD * !SCE)	-0.00033	-0.00033	-0.00033
	(CLK * !RESET_B * SCD * !SCE)	0.00144	0.00146	0.00144
	(CLK * !RESET_B * !SCD * !SCE)	-0.00033	-0.00034	-0.00033
	(CLK * !RESET_B * !SCD * !SCE)	0.00144	0.00146	0.00144
	(!CLK * RESET_B * SCD * SCE)	-0.00104	-0.00105	-0.00108
	(!CLK * RESET_B * SCD * SCE)	0.00058	0.00057	0.00055
	(!CLK * RESET_B * SCD * !SCE)	0.00742	0.00781	0.02210
	(!CLK * RESET_B * SCD * !SCE)	0.01072	0.01111	0.02541
	(!CLK * RESET_B * !SCD * !SCE)	0.00743	0.00781	0.02210
	(!CLK * RESET_B * !SCD * !SCE)	0.01073	0.01111	0.02541
	(!CLK * !SCD * SCE)	-0.00055	-0.00056	-0.00055
	(!CLK * !SCD * SCE)	0.00121	0.00122	0.00121
	(!CLK * !RESET_B * SCD * SCE)	-0.00054	-0.00054	-0.00054
	(!CLK * !RESET_B * SCD * SCE)	0.00121	0.00121	0.00121
	(!CLK * !RESET_B * SCD * !SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * !RESET_B * SCD * !SCE)	0.00144	0.00146	0.00144
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00033	-0.00034	-0.00033
	(!CLK * !RESET_B * !SCD * !SCE)	0.00144	0.00146	0.00144

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00103	-0.00106	-0.00108
	(CLK * RESET_B * SCD * SCE)	0.00057	0.00058	0.00055
	(CLK * RESET_B * SCD * !SCE)	0.00067	0.00111	0.01337
	(CLK * RESET_B * SCD * !SCE)	0.00385	0.00429	0.01655
	(CLK * RESET_B * !SCD * !SCE)	0.00067	0.00111	0.01337
	(CLK * RESET_B * !SCD * !SCE)	0.00385	0.00429	0.01655
	(CLK * !SCD * SCE)	-0.00054	-0.00055	-0.00054
	(CLK * !SCD * SCE)	0.00122	0.00123	0.00122
	(CLK * !RESET_B * SCD * SCE)	-0.00053	-0.00054	-0.00053
	(CLK * !RESET_B * SCD * SCE)	0.00122	0.00124	0.00122
	(CLK * !RESET_B * SCD * !SCE)	-0.00034	-0.00034	-0.00034
	(CLK * !RESET_B * SCD * !SCE)	0.00143	0.00145	0.00143
	(CLK * !RESET_B * !SCD * !SCE)	-0.00034	-0.00035	-0.00034
	(CLK * !RESET_B * !SCD * !SCE)	0.00143	0.00145	0.00143
	(!CLK * RESET_B * SCD * SCE)	-0.00103	-0.00105	-0.00108
	(!CLK * RESET_B * SCD * SCE)	0.00058	0.00058	0.00056
	(!CLK * RESET_B * SCD * !SCE)	0.00708	0.00751	0.02186
	(!CLK * RESET_B * SCD * !SCE)	0.01043	0.01086	0.02521
	(!CLK * RESET_B * !SCD * !SCE)	0.00708	0.00751	0.02186
	(!CLK * RESET_B * !SCD * !SCE)	0.01043	0.01085	0.02521
	(!CLK * !SCD * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK * !SCD * SCE)	0.00122	0.00124	0.00122
	(!CLK * !RESET_B * SCD * SCE)	-0.00053	-0.00053	-0.00053
	(!CLK * !RESET_B * SCD * SCE)	0.00122	0.00123	0.00122
	(!CLK * !RESET_B * SCD * !SCE)	-0.00034	-0.00035	-0.00034
	(!CLK * !RESET_B * SCD * !SCE)	0.00143	0.00145	0.00143
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00034	-0.00035	-0.00034
	(!CLK * !RESET_B * !SCD * !SCE)	0.00143	0.00145	0.00143

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)**	0.00699	0.00693	0.01460
	(CLK * D * RESET_B * SCE)	0.00283	0.00275	0.01042
	(CLK * D * RESET_B * !SCE)	0.00113	0.00099	0.00097
	(CLK * D * RESET_B * !SCE)	-0.00102	-0.00117	-0.00119
	(CLK * D * !RESET_B * SCE)	0.00055	0.00055	0.00053
	(CLK * D * !RESET_B * SCE)	-0.00129	-0.00129	-0.00128
	(CLK * D * !RESET_B * !SCE)	0.00039	0.00039	0.00039
	(CLK * D * !RESET_B * !SCE)	-0.00140	-0.00142	-0.00141
	(CLK * !D * RESET_B * SCE)	0.00773	0.00766	0.01504
	(CLK * !D * RESET_B * SCE)	0.00342	0.00333	0.01072
	(CLK * !D * !RESET_B * SCE)	0.00055	0.00055	0.00053
	(CLK * !D * !RESET_B * SCE)	-0.00129	-0.00129	-0.00128
	(!D * RESET_B * !SCE)	0.00077	0.00078	0.00077
	(!D * RESET_B * !SCE)	-0.00137	-0.00138	-0.00138
	(!D * !RESET_B * !SCE)	0.00045	0.00045	0.00045
	(!D * !RESET_B * !SCE)	-0.00147	-0.00148	-0.00148
	(!CLK * D * RESET_B * SCE)	0.01323	0.01322	0.02143
	(!CLK * D * RESET_B * SCE)	0.00888	0.00886	0.01708
	(!CLK * D * RESET_B * !SCE)	0.00113	0.00099	0.00097
	(!CLK * D * RESET_B * !SCE)	-0.00102	-0.00117	-0.00119
	(!CLK * D * !RESET_B * SCE)	0.00055	0.00055	0.00053
	(!CLK * D * !RESET_B * SCE)	-0.00129	-0.00129	-0.00128
	(!CLK * D * !RESET_B * !SCE)	0.00039	0.00039	0.00039
	(!CLK * D * !RESET_B * !SCE)	-0.00140	-0.00142	-0.00141
	(!CLK * !D * RESET_B * SCE)	0.01397	0.01395	0.02192
	(!CLK * !D * RESET_B * SCE)	0.00948	0.00946	0.01743
	(!CLK * !D * !RESET_B * SCE)	0.00055	0.00055	0.00053
	(!CLK * !D * !RESET_B * SCE)	-0.00129	-0.00129	-0.00128

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00633	0.00627	0.01404
	(CLK * D * RESET_B * SCE)	0.00223	0.00215	0.00992
	(CLK * D * RESET_B * !SCE)	0.00114	0.00100	0.00098
	(CLK * D * RESET_B * !SCE)	-0.00100	-0.00115	-0.00117
	(CLK * D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(CLK * D * !RESET_B * SCE)	-0.00132	-0.00132	-0.00130
	(CLK * D * !RESET_B * !SCE)	0.00038	0.00038	0.00038
	(CLK * D * !RESET_B * !SCE)	-0.00141	-0.00143	-0.00142
	(CLK * !D * RESET_B * SCE)	0.00708	0.00700	0.01448
	(CLK * !D * RESET_B * SCE)	0.00282	0.00273	0.01022
	(CLK * !D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(CLK * !D * !RESET_B * SCE)	-0.00132	-0.00132	-0.00130
	(!D * RESET_B * !SCE)	0.00076	0.00076	0.00076
	(!D * RESET_B * !SCE)	-0.00137	-0.00139	-0.00139
	(!D * !RESET_B * !SCE)	0.00044	0.00044	0.00044
	(!D * !RESET_B * !SCE)	-0.00148	-0.00149	-0.00149
	(!CLK * D * RESET_B * SCE)	0.01280	0.01279	0.02105
	(!CLK * D * RESET_B * SCE)	0.00854	0.00850	0.01677
	(!CLK * D * RESET_B * !SCE)	0.00114	0.00099	0.00098
	(!CLK * D * RESET_B * !SCE)	-0.00100	-0.00115	-0.00117
	(!CLK * D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(!CLK * D * !RESET_B * SCE)	-0.00132	-0.00131	-0.00130
	(!CLK * D * !RESET_B * !SCE)	0.00038	0.00038	0.00038
	(!CLK * D * !RESET_B * !SCE)	-0.00141	-0.00143	-0.00142
	(!CLK * !D * RESET_B * SCE)	0.01355	0.01353	0.02151
	(!CLK * !D * RESET_B * SCE)	0.00914	0.00909	0.01709
	(!CLK * !D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(!CLK * !D * !RESET_B * SCE)	-0.00132	-0.00131	-0.00130

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00636	0.00630	0.01407
	(CLK * D * RESET_B * SCE)	0.00225	0.00217	0.00995
	(CLK * D * RESET_B * !SCE)	0.00112	0.00097	0.00096
	(CLK * D * RESET_B * !SCE)	-0.00100	-0.00115	-0.00117
	(CLK * D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(CLK * D * !RESET_B * SCE)	-0.00129	-0.00129	-0.00128
	(CLK * D * !RESET_B * !SCE)	0.00037	0.00038	0.00038
	(CLK * D * !RESET_B * !SCE)	-0.00138	-0.00140	-0.00139
	(CLK * !D * RESET_B * SCE)	0.00710	0.00703	0.01452
	(CLK * !D * RESET_B * SCE)	0.00284	0.00275	0.01025
	(CLK * !D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(CLK * !D * !RESET_B * SCE)	-0.00129	-0.00129	-0.00128
	(!D * RESET_B * !SCE)	0.00076	0.00076	0.00076
	(!D * RESET_B * !SCE)	-0.00135	-0.00136	-0.00136
	(!D * !RESET_B * !SCE)	0.00044	0.00044	0.00044
	(!D * !RESET_B * !SCE)	-0.00145	-0.00146	-0.00146
	(!CLK * D * RESET_B * SCE)	0.01286	0.01285	0.02119
	(!CLK * D * RESET_B * SCE)	0.00857	0.00855	0.01689
	(!CLK * D * RESET_B * !SCE)	0.00112	0.00097	0.00096
	(!CLK * D * RESET_B * !SCE)	-0.00099	-0.00115	-0.00116
	(!CLK * D * !RESET_B * SCE)	0.00052	0.00051	0.00050
	(!CLK * D * !RESET_B * SCE)	-0.00129	-0.00129	-0.00128
	(!CLK * D * !RESET_B * !SCE)	0.00037	0.00038	0.00038
	(!CLK * D * !RESET_B * !SCE)	-0.00138	-0.00140	-0.00139
	(!CLK * !D * RESET_B * SCE)	0.01360	0.01359	0.02165
	(!CLK * !D * RESET_B * SCE)	0.00916	0.00913	0.01720
	(!CLK * !D * !RESET_B * SCE)	0.00052	0.00052	0.00050
	(!CLK * !D * !RESET_B * SCE)	-0.00129	-0.00129	-0.00128

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)	0.00196	0.00185	0.00965
	(CLK * D * RESET_B * SCE)	0.00614	0.00603	0.01381
	(CLK * D * RESET_B * !SCE)	-0.00093	-0.00095	-0.00095
	(CLK * D * RESET_B * !SCE)	0.00120	0.00121	0.00121
	(CLK * D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00050
	(CLK * D * !RESET_B * SCE)	0.00131	0.00133	0.00129
	(CLK * D * !RESET_B * !SCE)	-0.00037	-0.00038	-0.00038
	(CLK * D * !RESET_B * !SCE)	0.00142	0.00143	0.00142
	(CLK * !D * RESET_B * SCE)	0.00157	0.00147	0.00943
	(CLK * !D * RESET_B * SCE)	0.00589	0.00580	0.01373
	(CLK * !D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00050
	(CLK * !D * !RESET_B * SCE)	0.00131	0.00133	0.00129
	(!D * RESET_B * !SCE)	-0.00071	-0.00077	-0.00077
	(!D * RESET_B * !SCE)	0.00141	0.00140	0.00139
	(!D * !RESET_B * !SCE)	-0.00045	-0.00045	-0.00045
	(!D * !RESET_B * !SCE)	0.00150	0.00151	0.00150
	(!CLK * D * RESET_B * SCE)	0.00814	0.00814	0.01771
	(!CLK * D * RESET_B * SCE)	0.01250	0.01249	0.02204
	(!CLK * D * RESET_B * !SCE)	-0.00093	-0.00095	-0.00095
	(!CLK * D * RESET_B * !SCE)	0.00121	0.00122	0.00121
	(!CLK * D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00050
	(!CLK * D * !RESET_B * SCE)	0.00131	0.00133	0.00129
	(!CLK * D * !RESET_B * !SCE)	-0.00037	-0.00038	-0.00038
	(!CLK * D * !RESET_B * !SCE)	0.00142	0.00143	0.00142
	(!CLK * !D * RESET_B * SCE)	0.00782	0.00780	0.01740
	(!CLK * !D * RESET_B * SCE)	0.01232	0.01229	0.02188
	(!CLK * !D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00050
	(!CLK * !D * !RESET_B * SCE)	0.00131	0.00133	0.00129

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00195	0.00182	0.00969
	(CLK * D * RESET_B * SCE)	0.00607	0.00595	0.01379
	(CLK * D * RESET_B * !SCE)	-0.00094	-0.00096	-0.00097
	(CLK * D * RESET_B * !SCE)	0.00118	0.00120	0.00119
	(CLK * D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(CLK * D * !RESET_B * SCE)	0.00133	0.00136	0.00132
	(CLK * D * !RESET_B * !SCE)	-0.00036	-0.00036	-0.00036
	(CLK * D * !RESET_B * !SCE)	0.00143	0.00143	0.00143
	(CLK * !D * RESET_B * SCE)	0.00155	0.00145	0.00948
	(CLK * !D * RESET_B * SCE)	0.00581	0.00572	0.01373
	(CLK * !D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(CLK * !D * !RESET_B * SCE)	0.00134	0.00136	0.00132
	(!D * RESET_B * !SCE)	-0.00070	-0.00076	-0.00076
	(!D * RESET_B * !SCE)	0.00142	0.00140	0.00139
	(!D * !RESET_B * !SCE)	-0.00044	-0.00044	-0.00044
	(!D * !RESET_B * !SCE)	0.00150	0.00151	0.00151
	(!CLK * D * RESET_B * SCE)	0.00866	0.00861	0.01818
	(!CLK * D * RESET_B * SCE)	0.01295	0.01289	0.02244
	(!CLK * D * RESET_B * !SCE)	-0.00094	-0.00096	-0.00097
	(!CLK * D * RESET_B * !SCE)	0.00118	0.00120	0.00119
	(!CLK * D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(!CLK * D * !RESET_B * SCE)	0.00133	0.00136	0.00132
	(!CLK * D * !RESET_B * !SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * D * !RESET_B * !SCE)	0.00143	0.00145	0.00143
	(!CLK * !D * RESET_B * SCE)	0.00834	0.00831	0.01818
	(!CLK * !D * RESET_B * SCE)	0.01277	0.01273	0.02258
	(!CLK * !D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(!CLK * !D * !RESET_B * SCE)	0.00134	0.00136	0.00132

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00197	0.00186	0.00972
	(CLK * D * RESET_B * SCE)	0.00611	0.00600	0.01383
	(CLK * D * RESET_B * !SCE)	-0.00091	-0.00094	-0.00094
	(CLK * D * RESET_B * !SCE)	0.00118	0.00119	0.00119
	(CLK * D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(CLK * D * !RESET_B * SCE)	0.00131	0.00133	0.00130
	(CLK * D * !RESET_B * !SCE)	-0.00036	-0.00037	-0.00036
	(CLK * D * !RESET_B * !SCE)	0.00140	0.00142	0.00140
	(CLK * !D * RESET_B * SCE)	0.00151	0.00142	0.00946
	(CLK * !D * RESET_B * SCE)	0.00579	0.00570	0.01372
	(CLK * !D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(CLK * !D * !RESET_B * SCE)	0.00131	0.00133	0.00130
	(!D * RESET_B * !SCE)	-0.00070	-0.00075	-0.00076
	(!D * RESET_B * !SCE)	0.00139	0.00138	0.00137
	(!D * !RESET_B * !SCE)	-0.00044	-0.00044	-0.00044
	(!D * !RESET_B * !SCE)	0.00148	0.00149	0.00149
	(!CLK * D * RESET_B * SCE)	0.00840	0.00837	0.01800
	(!CLK * D * RESET_B * SCE)	0.01271	0.01267	0.02229
	(!CLK * D * RESET_B * !SCE)	-0.00091	-0.00094	-0.00094
	(!CLK * D * RESET_B * !SCE)	0.00119	0.00120	0.00120
	(!CLK * D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(!CLK * D * !RESET_B * SCE)	0.00131	0.00133	0.00130
	(!CLK * D * !RESET_B * !SCE)	-0.00036	-0.00037	-0.00036
	(!CLK * D * !RESET_B * !SCE)	0.00140	0.00142	0.00140
	(!CLK * !D * RESET_B * SCE)	0.00802	0.00801	0.01796
	(!CLK * !D * RESET_B * SCE)	0.01247	0.01245	0.02239
	(!CLK * !D * !RESET_B * SCE)	-0.00046	-0.00047	-0.00047
	(!CLK * !D * !RESET_B * SCE)	0.00131	0.00133	0.00130

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)	0.00513	0.00523	0.02108
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00041	-0.00032	0.01553
	(CLK * D * RESET_B * !SCD)	0.00760	0.00776	0.02386
	(CLK * D * RESET_B * !SCD)	0.00391	0.00406	0.02012
	(CLK * !D * RESET_B * SCD)	0.01050	0.01082	0.03523
	(CLK * !D * RESET_B * SCD)	0.00331	0.00361	0.02805
	(!CLK * D * RESET_B * SCD)	0.00513	0.00524	0.02108
	(!CLK * D * RESET_B * SCD)	-0.00041	-0.00032	0.01553
	(!CLK * D * RESET_B * !SCD)	0.01368	0.01392	0.03021
	(!CLK * D * RESET_B * !SCD)	0.01017	0.01039	0.02664
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00512	0.00545	0.02130
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00013	0.00015	0.01602
	(!CLK * !D * RESET_B * SCD)	0.01674	0.01709	0.04235
	(!CLK * !D * RESET_B * SCD)	0.00937	0.00970	0.03499

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00515	0.00527	0.02123
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00046	-0.00035	0.01561
	(CLK * D * RESET_B * !SCD)	0.00753	0.00770	0.02395
	(CLK * D * RESET_B * !SCD)	0.00372	0.00387	0.02010
	(CLK * !D * RESET_B * SCD)	0.00981	0.01018	0.03492
	(CLK * !D * RESET_B * SCD)	0.00261	0.00294	0.02772
	(!CLK * D * RESET_B * SCD)	0.00515	0.00527	0.02123
	(!CLK * D * RESET_B * SCD)	-0.00046	-0.00036	0.01561
	(!CLK * D * RESET_B * !SCD)	0.01413	0.01440	0.03072
	(!CLK * D * RESET_B * !SCD)	0.01049	0.01073	0.02704
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00507	0.00541	0.02138
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00025	0.00007	0.01603
	(!CLK * !D * RESET_B * SCD)	0.01628	0.01667	0.04217
	(!CLK * !D * RESET_B * SCD)	0.00891	0.00929	0.03481

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00516	0.00530	0.02125
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00046	-0.00035	0.01562
	(CLK * D * RESET_B * !SCD)	0.00755	0.00773	0.02397
	(CLK * D * RESET_B * !SCD)	0.00377	0.00392	0.02013
	(CLK * !D * RESET_B * SCD)	0.00987	0.01023	0.03499
	(CLK * !D * RESET_B * SCD)	0.00262	0.00295	0.02774
	(!CLK * D * RESET_B * SCD)	0.00516	0.00529	0.02125
	(!CLK * D * RESET_B * SCD)	-0.00045	-0.00035	0.01562
	(!CLK * D * RESET_B * !SCD)	0.01386	0.01414	0.03054
	(!CLK * D * RESET_B * !SCD)	0.01026	0.01050	0.02689
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00506	0.00536	0.02138
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00026	0.00000	0.01602
	(!CLK * !D * RESET_B * SCD)	0.01636	0.01676	0.04234
	(!CLK * !D * RESET_B * SCD)	0.00894	0.00931	0.03492

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)**	-0.00025	0.00052	0.01655
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00531	0.00607	0.02209
	(CLK * D * RESET_B * !SCD)	0.00538	0.00594	0.02206
	(CLK * D * RESET_B * !SCD)	0.00910	0.00966	0.02562
	(CLK * !D * RESET_B * SCD)	0.00111	0.00173	0.02602
	(CLK * !D * RESET_B * SCD)	0.00829	0.00891	0.03322
	(!CLK * D * RESET_B * SCD)	-0.00023	0.00054	0.01656
	(!CLK * D * RESET_B * SCD)	0.00528	0.00611	0.02209
	(!CLK * D * RESET_B * !SCD)	0.01160	0.01224	0.02833
	(!CLK * D * RESET_B * !SCD)	0.01515	0.01577	0.03172
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00031	0.00043	0.01636
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00497	0.00570	0.02161
	(!CLK * !D * RESET_B * SCD)	0.00723	0.00792	0.03346
	(!CLK * !D * RESET_B * SCD)	0.01459	0.01529	0.04083

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00036	0.00042	0.01657
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00527	0.00605	0.02218
	(CLK * D * RESET_B * !SCD)	0.00448	0.00507	0.02133
	(CLK * D * RESET_B * !SCD)	0.00833	0.00893	0.02502
	(CLK * !D * RESET_B * SCD)	0.00109	0.00174	0.02640
	(CLK * !D * RESET_B * SCD)	0.00830	0.00896	0.03362
	(!CLK * D * RESET_B * SCD)	-0.00035	0.00045	0.01657
	(!CLK * D * RESET_B * SCD)	0.00527	0.00608	0.02218
	(!CLK * D * RESET_B * !SCD)	0.01094	0.01159	0.02785
	(!CLK * D * RESET_B * !SCD)	0.01462	0.01526	0.03136
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00035	0.00039	0.01644
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00499	0.00574	0.02176
	(!CLK * !D * RESET_B * SCD)	0.00775	0.00844	0.03425
	(!CLK * !D * RESET_B * SCD)	0.01512	0.01582	0.04163

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00039	0.00039	0.01655
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00525	0.00603	0.02217
	(CLK * D * RESET_B * !SCD)	0.00451	0.00510	0.02136
	(CLK * D * RESET_B * !SCD)	0.00833	0.00893	0.02502
	(CLK * !D * RESET_B * SCD)	0.00104	0.00169	0.02635
	(CLK * !D * RESET_B * SCD)	0.00829	0.00895	0.03362
	(!CLK * D * RESET_B * SCD)	-0.00038	0.00042	0.01655
	(!CLK * D * RESET_B * SCD)	0.00525	0.00606	0.02217
	(!CLK * D * RESET_B * !SCD)	0.01099	0.01166	0.02787
	(!CLK * D * RESET_B * !SCD)	0.01464	0.01529	0.03137
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00036	0.00040	0.01644
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00500	0.00572	0.02177
	(!CLK * !D * RESET_B * SCD)	0.00741	0.00810	0.03395
	(!CLK * !D * RESET_B * SCD)	0.01483	0.01552	0.04139

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)**	0.00977	0.00962	0.02182
	(CLK * D * SCD * SCE * !Q)	0.00028	0.00012	0.01233
	(CLK * D * SCD * !SCE * !Q)	0.00953	0.00937	0.02197
	(CLK * D * SCD * !SCE * !Q)	0.00040	0.00023	0.01281
	(CLK * D * !SCD * SCE * !Q)	0.00303	0.00307	0.00303
	(CLK * D * !SCD * SCE * !Q)	-0.00397	-0.00399	-0.00397
	(CLK * D * !SCD * !SCE * !Q)	0.00910	0.00898	0.02177
	(CLK * D * !SCD * !SCE * !Q)	0.00040	0.00026	0.01304
	(CLK * !D * SCD * SCE * !Q)	0.01051	0.01037	0.02221
	(CLK * !D * SCD * SCE * !Q)	0.00087	0.00069	0.01259
	(CLK * !D * SCD * !SCE * !Q)	0.00299	0.00304	0.00300
	(CLK * !D * SCD * !SCE * !Q)	-0.00398	-0.00401	-0.00399
	(CLK * !D * !SCD * SCE * !Q)	0.00303	0.00307	0.00303
	(CLK * !D * !SCD * SCE * !Q)	-0.00397	-0.00399	-0.00397
	(CLK * !D * !SCD * !SCE * !Q)	0.00301	0.00303	0.00301
	(CLK * !D * !SCD * !SCE * !Q)	-0.00399	-0.00400	-0.00399
	(!CLK * D * SCD * SCE * !Q)	0.01663	0.01619	0.03049
	(!CLK * D * SCD * SCE * !Q)	0.00698	0.00649	0.02082
	(!CLK * D * SCD * !SCE * !Q)	0.01640	0.01594	0.03077
	(!CLK * D * SCD * !SCE * !Q)	0.00710	0.00659	0.02144
	(!CLK * D * !SCD * SCE * !Q)	0.00304	0.00307	0.00305
	(!CLK * D * !SCD * SCE * !Q)	-0.00395	-0.00396	-0.00395
	(!CLK * D * !SCD * !SCE * !Q)	0.01598	0.01555	0.03040
	(!CLK * D * !SCD * !SCE * !Q)	0.00710	0.00664	0.02151
	(!CLK * !D * SCD * SCE * !Q)	0.01738	0.01693	0.03091
	(!CLK * !D * SCD * SCE * !Q)	0.00758	0.00709	0.02109
	(!CLK * !D * SCD * !SCE * !Q)	0.00301	0.00300	0.00302
	(!CLK * !D * SCD * !SCE * !Q)	-0.00397	-0.00396	-0.00397
	(!CLK * !D * !SCD * SCE * !Q)	0.00304	0.00309	0.00305
	(!CLK * !D * !SCD * SCE * !Q)	-0.00395	-0.00398	-0.00395
	(!CLK * !D * !SCD * !SCE * !Q)	0.00302	0.00306	0.00303
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00398	-0.00400	-0.00398

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00909	0.00896	0.02140
	(CLK * D * SCD * SCE * !Q)	-0.00037	-0.00050	0.01193
	(CLK * D * SCD * !SCE * !Q)	0.00871	0.00861	0.02147
	(CLK * D * SCD * !SCE * !Q)	-0.00038	-0.00054	0.01233
	(CLK * D * !SCD * SCE * !Q)	0.00304	0.00308	0.00304
	(CLK * D * !SCD * SCE * !Q)	-0.00399	-0.00402	-0.00399
	(CLK * D * !SCD * !SCE * !Q)	0.00829	0.00821	0.02126
	(CLK * D * !SCD * !SCE * !Q)	-0.00039	-0.00050	0.01256
	(CLK * !D * SCD * SCE * !Q)	0.00984	0.00972	0.02179
	(CLK * !D * SCD * SCE * !Q)	0.00023	0.00005	0.01218
	(CLK * !D * SCD * !SCE * !Q)	0.00301	0.00305	0.00301
	(CLK * !D * SCD * !SCE * !Q)	-0.00401	-0.00404	-0.00401
	(CLK * !D * !SCD * SCE * !Q)	0.00304	0.00308	0.00304
	(CLK * !D * !SCD * SCE * !Q)	-0.00399	-0.00402	-0.00399
	(CLK * !D * !SCD * !SCE * !Q)	0.00302	0.00303	0.00302
	(CLK * !D * !SCD * !SCE * !Q)	-0.00402	-0.00402	-0.00401
	(!CLK * D * SCD * SCE * !Q)	0.01625	0.01579	0.03022
	(!CLK * D * SCD * SCE * !Q)	0.00663	0.00615	0.02059
	(!CLK * D * SCD * !SCE * !Q)	0.01586	0.01544	0.03024
	(!CLK * D * SCD * !SCE * !Q)	0.00663	0.00613	0.02096
	(!CLK * D * !SCD * SCE * !Q)	0.00303	0.00305	0.00303
	(!CLK * D * !SCD * SCE * !Q)	-0.00399	-0.00401	-0.00400
	(!CLK * D * !SCD * !SCE * !Q)	0.01544	0.01503	0.03018
	(!CLK * D * !SCD * !SCE * !Q)	0.00664	0.00615	0.02133
	(!CLK * !D * SCD * SCE * !Q)	0.01699	0.01652	0.03063
	(!CLK * !D * SCD * SCE * !Q)	0.00723	0.00676	0.02086
	(!CLK * !D * SCD * !SCE * !Q)	0.00300	0.00302	0.00301
	(!CLK * !D * SCD * !SCE * !Q)	-0.00401	-0.00402	-0.00402
	(!CLK * !D * !SCD * SCE * !Q)	0.00302	0.00307	0.00303
	(!CLK * !D * !SCD * SCE * !Q)	-0.00399	-0.00403	-0.00400
	(!CLK * !D * !SCD * !SCE * !Q)	0.00300	0.00303	0.00301
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00402	-0.00403	-0.00402

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00912	0.00901	0.02144
	(CLK * D * SCD * SCE * !Q)	-0.00029	-0.00046	0.01199
	(CLK * D * SCD * !SCE * !Q)	0.00875	0.00863	0.02147
	(CLK * D * SCD * !SCE * !Q)	-0.00033	-0.00049	0.01237
	(CLK * D * !SCD * SCE * !Q)	0.00299	0.00302	0.00300
	(CLK * D * !SCD * SCE * !Q)	-0.00396	-0.00399	-0.00397
	(CLK * D * !SCD * !SCE * !Q)	0.00832	0.00824	0.02127
	(CLK * D * !SCD * !SCE * !Q)	-0.00032	-0.00045	0.01261
	(CLK * !D * SCD * SCE * !Q)	0.00987	0.00973	0.02183
	(CLK * !D * SCD * SCE * !Q)	0.00031	0.00012	0.01225
	(CLK * !D * SCD * !SCE * !Q)	0.00296	0.00301	0.00297
	(CLK * !D * SCD * !SCE * !Q)	-0.00398	-0.00401	-0.00398
	(CLK * !D * !SCD * SCE * !Q)	0.00299	0.00302	0.00300
	(CLK * !D * !SCD * SCE * !Q)	-0.00397	-0.00399	-0.00397
	(CLK * !D * !SCD * !SCE * !Q)	0.00297	0.00298	0.00297
	(CLK * !D * !SCD * !SCE * !Q)	-0.00399	-0.00400	-0.00399
	(!CLK * D * SCD * SCE * !Q)	0.01621	0.01576	0.03029
	(!CLK * D * SCD * SCE * !Q)	0.00663	0.00617	0.02068
	(!CLK * D * SCD * !SCE * !Q)	0.01585	0.01538	0.03034
	(!CLK * D * SCD * !SCE * !Q)	0.00660	0.00613	0.02107
	(!CLK * D * !SCD * SCE * !Q)	0.00298	0.00302	0.00299
	(!CLK * D * !SCD * SCE * !Q)	-0.00398	-0.00401	-0.00398
	(!CLK * D * !SCD * !SCE * !Q)	0.01541	0.01499	0.03010
	(!CLK * D * !SCD * !SCE * !Q)	0.00662	0.00617	0.02127
	(!CLK * !D * SCD * SCE * !Q)	0.01696	0.01652	0.03068
	(!CLK * !D * SCD * SCE * !Q)	0.00723	0.00674	0.02092
	(!CLK * !D * SCD * !SCE * !Q)	0.00294	0.00299	0.00295
	(!CLK * !D * SCD * !SCE * !Q)	-0.00399	-0.00402	-0.00400
	(!CLK * !D * !SCD * SCE * !Q)	0.00298	0.00302	0.00299
	(!CLK * !D * !SCD * SCE * !Q)	-0.00398	-0.00401	-0.00398
	(!CLK * !D * !SCD * !SCE * !Q)	0.00296	0.00299	0.00296
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00400	-0.00402	-0.00400

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)**	0.00072	0.00104	0.01495
	(CLK * D * SCD * SCE * !Q)	0.01021	0.01057	0.02445
	(CLK * D * SCD * !SCE * !Q)	-0.00022	0.00009	0.01397
	(CLK * D * SCD * !SCE * !Q)	0.00893	0.00925	0.02312
	(CLK * D * !SCD * SCE * !Q)	-0.00295	-0.00305	-0.00303
	(CLK * D * !SCD * SCE * !Q)	0.00401	0.00402	0.00398
	(CLK * D * !SCD * !SCE * !Q)	-0.00050	-0.00014	0.01388
	(CLK * D * !SCD * !SCE * !Q)	0.00821	0.00860	0.02260
	(CLK * !D * SCD * SCE * !Q)	0.00033	0.00070	0.01475
	(CLK * !D * SCD * SCE * !Q)	0.00996	0.01034	0.02439
	(CLK * !D * SCD * !SCE * !Q)	-0.00289	-0.00303	-0.00300
	(CLK * !D * SCD * !SCE * !Q)	0.00404	0.00403	0.00399
	(CLK * !D * !SCD * SCE * !Q)	-0.00295	-0.00305	-0.00303
	(CLK * !D * !SCD * SCE * !Q)	0.00401	0.00402	0.00398
	(CLK * !D * !SCD * !SCE * !Q)	-0.00291	-0.00303	-0.00301
	(CLK * !D * !SCD * !SCE * !Q)	0.00405	0.00403	0.00400
	(!CLK * D * SCD * SCE * !Q)	0.00720	0.00707	0.02480
	(!CLK * D * SCD * SCE * !Q)	0.01684	0.01677	0.03447
	(!CLK * D * SCD * !SCE * !Q)	0.00626	0.00610	0.02374
	(!CLK * D * SCD * !SCE * !Q)	0.01556	0.01544	0.03304
	(!CLK * D * !SCD * SCE * !Q)	-0.00297	-0.00307	-0.00305
	(!CLK * D * !SCD * SCE * !Q)	0.00399	0.00400	0.00397
	(!CLK * D * !SCD * !SCE * !Q)	0.00599	0.00586	0.02364
	(!CLK * D * !SCD * !SCE * !Q)	0.01484	0.01476	0.03255
	(!CLK * !D * SCD * SCE * !Q)	0.00682	0.00670	0.02468
	(!CLK * !D * SCD * SCE * !Q)	0.01659	0.01654	0.03450
	(!CLK * !D * SCD * !SCE * !Q)	-0.00291	-0.00300	-0.00302
	(!CLK * !D * SCD * !SCE * !Q)	0.00402	0.00401	0.00398
	(!CLK * !D * !SCD * SCE * !Q)	-0.00297	-0.00307	-0.00305
	(!CLK * !D * !SCD * SCE * !Q)	0.00399	0.00400	0.00397
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00292	-0.00305	-0.00303
	(!CLK * !D * !SCD * !SCE * !Q)	0.00403	0.00402	0.00398

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00062	0.00097	0.01497
	(CLK * D * SCD * SCE * !Q)	0.01008	0.01046	0.02444
	(CLK * D * SCD * !SCE * !Q)	-0.00024	0.00009	0.01407
	(CLK * D * SCD * !SCE * !Q)	0.00888	0.00926	0.02320
	(CLK * D * !SCD * SCE * !Q)	-0.00295	-0.00306	-0.00304
	(CLK * D * !SCD * SCE * !Q)	0.00403	0.00404	0.00401
	(CLK * D * !SCD * !SCE * !Q)	-0.00052	-0.00014	0.01399
	(CLK * D * !SCD * !SCE * !Q)	0.00816	0.00858	0.02269
	(CLK * !D * SCD * SCE * !Q)	0.00023	0.00062	0.01477
	(CLK * !D * SCD * SCE * !Q)	0.00983	0.01025	0.02439
	(CLK * !D * SCD * !SCE * !Q)	-0.00289	-0.00304	-0.00301
	(CLK * !D * SCD * !SCE * !Q)	0.00407	0.00405	0.00402
	(CLK * !D * !SCD * SCE * !Q)	-0.00295	-0.00306	-0.00304
	(CLK * !D * !SCD * SCE * !Q)	0.00403	0.00404	0.00401
	(CLK * !D * !SCD * !SCE * !Q)	-0.00291	-0.00303	-0.00302
	(CLK * !D * !SCD * !SCE * !Q)	0.00408	0.00406	0.00402
	(!CLK * D * SCD * SCE * !Q)	0.00763	0.00756	0.02526
	(!CLK * D * SCD * SCE * !Q)	0.01730	0.01722	0.03490
	(!CLK * D * SCD * !SCE * !Q)	0.00680	0.00667	0.02426
	(!CLK * D * SCD * !SCE * !Q)	0.01606	0.01597	0.03356
	(!CLK * D * !SCD * SCE * !Q)	-0.00295	-0.00305	-0.00303
	(!CLK * D * !SCD * SCE * !Q)	0.00404	0.00405	0.00402
	(!CLK * D * !SCD * !SCE * !Q)	0.00653	0.00636	0.02419
	(!CLK * D * !SCD * !SCE * !Q)	0.01534	0.01522	0.03303
	(!CLK * !D * SCD * SCE * !Q)	0.00728	0.00718	0.02514
	(!CLK * !D * SCD * SCE * !Q)	0.01701	0.01698	0.03493
	(!CLK * !D * SCD * !SCE * !Q)	-0.00289	-0.00302	-0.00301
	(!CLK * !D * SCD * !SCE * !Q)	0.00407	0.00406	0.00402
	(!CLK * !D * !SCD * SCE * !Q)	-0.00295	-0.00305	-0.00303
	(!CLK * !D * !SCD * SCE * !Q)	0.00404	0.00405	0.00402
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00291	-0.00303	-0.00301
	(!CLK * !D * !SCD * !SCE * !Q)	0.00408	0.00406	0.00403

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00064	0.00098	0.01498
	(CLK * D * SCD * SCE * !Q)	0.01007	0.01046	0.02442
	(CLK * D * SCD * !SCE * !Q)	-0.00023	0.00011	0.01407
	(CLK * D * SCD * !SCE * !Q)	0.00887	0.00922	0.02317
	(CLK * D * !SCD * SCE * !Q)	-0.00291	-0.00301	-0.00299
	(CLK * D * !SCD * SCE * !Q)	0.00401	0.00402	0.00399
	(CLK * D * !SCD * !SCE * !Q)	-0.00051	-0.00013	0.01398
	(CLK * D * !SCD * !SCE * !Q)	0.00814	0.00858	0.02265
	(CLK * !D * SCD * SCE * !Q)	0.00018	0.00058	0.01473
	(CLK * !D * SCD * SCE * !Q)	0.00976	0.01019	0.02432
	(CLK * !D * SCD * !SCE * !Q)	-0.00285	-0.00299	-0.00297
	(CLK * !D * SCD * !SCE * !Q)	0.00404	0.00403	0.00399
	(CLK * !D * !SCD * SCE * !Q)	-0.00291	-0.00301	-0.00299
	(CLK * !D * !SCD * SCE * !Q)	0.00401	0.00402	0.00399
	(CLK * !D * !SCD * !SCE * !Q)	-0.00287	-0.00298	-0.00297
	(CLK * !D * !SCD * !SCE * !Q)	0.00405	0.00404	0.00400
	(!CLK * D * SCD * SCE * !Q)	0.00740	0.00727	0.02511
	(!CLK * D * SCD * SCE * !Q)	0.01698	0.01691	0.03473
	(!CLK * D * SCD * !SCE * !Q)	0.00653	0.00637	0.02410
	(!CLK * D * SCD * !SCE * !Q)	0.01577	0.01567	0.03338
	(!CLK * D * !SCD * SCE * !Q)	-0.00290	-0.00300	-0.00298
	(!CLK * D * !SCD * SCE * !Q)	0.00402	0.00403	0.00400
	(!CLK * D * !SCD * !SCE * !Q)	0.00626	0.00613	0.02402
	(!CLK * D * !SCD * !SCE * !Q)	0.01506	0.01498	0.03286
	(!CLK * !D * SCD * SCE * !Q)	0.00695	0.00684	0.02496
	(!CLK * !D * SCD * SCE * !Q)	0.01667	0.01663	0.03469
	(!CLK * !D * SCD * !SCE * !Q)	-0.00284	-0.00298	-0.00295
	(!CLK * !D * SCD * !SCE * !Q)	0.00405	0.00404	0.00401
	(!CLK * !D * !SCD * SCE * !Q)	-0.00290	-0.00300	-0.00298
	(!CLK * !D * !SCD * SCE * !Q)	0.00402	0.00403	0.00400
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00286	-0.00298	-0.00296
	(!CLK * !D * !SCD * !SCE * !Q)	0.00406	0.00405	0.00401

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)	0.01313	0.01333	0.03528
	(D * RESET_B * SCD * SCE * Q)	0.00892	0.00911	0.03107
	(D * RESET_B * SCD * !SCE * Q)	0.01313	0.01333	0.03528
	(D * RESET_B * SCD * !SCE * Q)	0.00891	0.00911	0.03107
	(D * RESET_B * !SCD * !SCE * Q)	0.01313	0.01333	0.03528
	(D * RESET_B * !SCD * !SCE * Q)	0.00892	0.00912	0.03107
	(D * !SCD * SCE * !Q)	0.01346	0.01366	0.03571
	(D * !SCD * SCE * !Q)	0.00925	0.00944	0.03150
	(D * !RESET_B * SCD * SCE * !Q)	0.01346	0.01367	0.03572
	(D * !RESET_B * SCD * SCE * !Q)	0.00925	0.00945	0.03150
	(D * !RESET_B * SCD * !SCE * !Q)	0.01346	0.01367	0.03571
	(D * !RESET_B * SCD * !SCE * !Q)	0.00925	0.00945	0.03150
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01346	0.01367	0.03571
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00925	0.00945	0.03150
	(!D * RESET_B * SCD * SCE * Q)	0.01313	0.01334	0.03537
	(!D * RESET_B * SCD * SCE * Q)	0.00892	0.00912	0.03117
	(!D * !SCE * !Q)	0.01346	0.01366	0.03571
	(!D * !SCE * !Q)	0.00925	0.00944	0.03150
	(!D * !SCD * SCE * !Q)	0.01346	0.01367	0.03571
	(!D * !SCD * SCE * !Q)	0.00925	0.00944	0.03149
	(!D * !RESET_B * SCD * SCE * !Q)	0.01346	0.01367	0.03571
	(!D * !RESET_B * SCD * SCE * !Q)	0.00925	0.00945	0.03150

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01310	0.01330	0.03524
	(D * RESET_B * SCD * SCE * Q)	0.00886	0.00905	0.03100
	(D * RESET_B * SCD * !SCE * Q)	0.01310	0.01330	0.03524
	(D * RESET_B * SCD * !SCE * Q)	0.00886	0.00905	0.03100
	(D * RESET_B * !SCD * !SCE * Q)	0.01310	0.01330	0.03524
	(D * RESET_B * !SCD * !SCE * Q)	0.00886	0.00905	0.03100
	(D * !SCD * SCE * !Q)	0.01351	0.01370	0.03575
	(D * !SCD * SCE * !Q)	0.00926	0.00945	0.03150
	(D * !RESET_B * SCD * SCE * !Q)	0.01351	0.01371	0.03566
	(D * !RESET_B * SCD * SCE * !Q)	0.00926	0.00946	0.03141
	(D * !RESET_B * SCD * !SCE * !Q)	0.01350	0.01371	0.03565
	(D * !RESET_B * SCD * !SCE * !Q)	0.00926	0.00946	0.03141
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01350	0.01371	0.03565
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00926	0.00946	0.03141
	(!D * RESET_B * SCD * SCE * Q)	0.01310	0.01330	0.03524
	(!D * RESET_B * SCD * SCE * Q)	0.00886	0.00905	0.03101
	(!D * !SCE * !Q)	0.01350	0.01370	0.03574
	(!D * !SCE * !Q)	0.00926	0.00944	0.03150
	(!D * !SCD * SCE * !Q)	0.01351	0.01370	0.03575
	(!D * !SCD * SCE * !Q)	0.00926	0.00945	0.03150
	(!D * !RESET_B * SCD * SCE * !Q)	0.01351	0.01371	0.03575
	(!D * !RESET_B * SCD * SCE * !Q)	0.00927	0.00946	0.03150

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01292	0.01314	0.03510
	(D * RESET_B * SCD * SCE * Q)	0.00869	0.00889	0.03087
	(D * RESET_B * SCD * !SCE * Q)	0.01292	0.01313	0.03510
	(D * RESET_B * SCD * !SCE * Q)	0.00868	0.00889	0.03087
	(D * RESET_B * !SCD * !SCE * Q)	0.01292	0.01313	0.03510
	(D * RESET_B * !SCD * !SCE * Q)	0.00869	0.00889	0.03087
	(D * !SCD * SCE * !Q)	0.01329	0.01350	0.03557
	(D * !SCD * SCE * !Q)	0.00905	0.00925	0.03134
	(D * !RESET_B * SCD * SCE * !Q)	0.01329	0.01351	0.03548
	(D * !RESET_B * SCD * SCE * !Q)	0.00905	0.00926	0.03124
	(D * !RESET_B * SCD * !SCE * !Q)	0.01329	0.01350	0.03547
	(D * !RESET_B * SCD * !SCE * !Q)	0.00905	0.00925	0.03124
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01329	0.01350	0.03547
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00905	0.00925	0.03124
	(!D * RESET_B * SCD * SCE * Q)	0.01292	0.01314	0.03510
	(!D * RESET_B * SCD * SCE * Q)	0.00869	0.00889	0.03087
	(!D * !SCE * !Q)	0.01329	0.01349	0.03557
	(!D * !SCE * !Q)	0.00905	0.00924	0.03134
	(!D * !SCD * SCE * !Q)	0.01329	0.01350	0.03557
	(!D * !SCD * SCE * !Q)	0.00905	0.00925	0.03134
	(!D * !RESET_B * SCD * SCE * !Q)	0.01329	0.01351	0.03557
	(!D * !RESET_B * SCD * SCE * !Q)	0.00905	0.00926	0.03133

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)**	0.00688	0.00767	0.03031
	(D * RESET_B * SCD * SCE * Q)	0.01110	0.01188	0.03451
	(D * RESET_B * SCD * SCE * !Q)	0.01268	0.01339	0.03666
	(D * RESET_B * SCD * SCE * !Q)	0.01672	0.01742	0.04070
	(D * RESET_B * SCD * !SCE * Q)	0.00688	0.00767	0.03030
	(D * RESET_B * SCD * !SCE * Q)	0.01109	0.01188	0.03451
	(D * RESET_B * SCD * !SCE * !Q)	0.01265	0.01336	0.03662
	(D * RESET_B * SCD * !SCE * !Q)	0.01669	0.01740	0.04066
	(D * RESET_B * !SCD * SCE * Q)	0.01367	0.01455	0.03776
	(D * RESET_B * !SCD * SCE * Q)	0.01809	0.01896	0.04216
	(D * RESET_B * !SCD * !SCE * Q)	0.00688	0.00767	0.03031
	(D * RESET_B * !SCD * !SCE * Q)	0.01110	0.01188	0.03452
	(D * RESET_B * !SCD * !SCE * !Q)	0.01265	0.01336	0.03662
	(D * RESET_B * !SCD * !SCE * !Q)	0.01669	0.01740	0.04066
	(D * !SCD * SCE * !Q)	0.00641	0.00721	0.02989
	(D * !SCD * SCE * !Q)	0.01063	0.01141	0.03411
	(D * !RESET_B * SCD * SCE * !Q)	0.00641	0.00721	0.02988
	(D * !RESET_B * SCD * SCE * !Q)	0.01063	0.01142	0.03410
	(D * !RESET_B * SCD * !SCE * !Q)	0.00641	0.00721	0.02988
	(D * !RESET_B * SCD * !SCE * !Q)	0.01063	0.01142	0.03410
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00641	0.00721	0.02988
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01063	0.01142	0.03410
	(!D * RESET_B * SCD * SCE * Q)	0.00688	0.00767	0.03031
	(!D * RESET_B * SCD * SCE * Q)	0.01110	0.01188	0.03452
	(!D * RESET_B * SCD * SCE * !Q)	0.01271	0.01342	0.03670
	(!D * RESET_B * SCD * SCE * !Q)	0.01674	0.01745	0.04072
	(!D * RESET_B * !SCE * Q)	0.01364	0.01453	0.03774
	(!D * RESET_B * !SCE * Q)	0.01804	0.01891	0.04215
	(!D * RESET_B * !SCD * SCE * Q)	0.01366	0.01454	0.03776
	(!D * RESET_B * !SCD * SCE * Q)	0.01806	0.01894	0.04217
	(!D * !SCE * !Q)	0.00641	0.00720	0.02989
	(!D * !SCE * !Q)	0.01062	0.01141	0.03411
	(!D * !SCD * SCE * !Q)	0.00641	0.00721	0.02989
	(!D * !SCD * SCE * !Q)	0.01063	0.01141	0.03411
	(!D * !RESET_B * SCD * SCE * !Q)	0.00641	0.00721	0.02988
	(!D * !RESET_B * SCD * SCE * !Q)	0.01063	0.01142	0.03410

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00689	0.00768	0.03034
	(D * RESET_B * SCD * SCE * Q)	0.01114	0.01192	0.03458
	(D * RESET_B * SCD * SCE * !Q)	0.01299	0.01370	0.03697
	(D * RESET_B * SCD * SCE * !Q)	0.01707	0.01777	0.04105
	(D * RESET_B * SCD * !SCE * Q)	0.00689	0.00768	0.03034
	(D * RESET_B * SCD * !SCE * Q)	0.01114	0.01192	0.03458
	(D * RESET_B * SCD * !SCE * !Q)	0.01295	0.01367	0.03694
	(D * RESET_B * SCD * !SCE * !Q)	0.01703	0.01773	0.04102
	(D * RESET_B * !SCD * SCE * Q)	0.01425	0.01512	0.03835
	(D * RESET_B * !SCD * SCE * Q)	0.01869	0.01954	0.04276
	(D * RESET_B * !SCD * !SCE * Q)	0.00689	0.00768	0.03035
	(D * RESET_B * !SCD * !SCE * Q)	0.01114	0.01193	0.03458
	(D * RESET_B * !SCD * !SCE * !Q)	0.01295	0.01367	0.03694
	(D * RESET_B * !SCD * !SCE * !Q)	0.01703	0.01773	0.04102
	(D * !SCD * SCE * !Q)	0.00643	0.00723	0.02994
	(D * !SCD * SCE * !Q)	0.01068	0.01145	0.03418
	(D * !RESET_B * SCD * SCE * !Q)	0.00643	0.00723	0.02993
	(D * !RESET_B * SCD * SCE * !Q)	0.01068	0.01146	0.03416
	(D * !RESET_B * SCD * !SCE * !Q)	0.00643	0.00723	0.02992
	(D * !RESET_B * SCD * !SCE * !Q)	0.01068	0.01146	0.03416
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00643	0.00723	0.02992
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01068	0.01146	0.03416
	(!D * RESET_B * SCD * SCE * Q)	0.00689	0.00768	0.03035
	(!D * RESET_B * SCD * SCE * Q)	0.01114	0.01193	0.03458
	(!D * RESET_B * SCD * SCE * !Q)	0.01302	0.01374	0.03701
	(!D * RESET_B * SCD * SCE * !Q)	0.01709	0.01780	0.04108
	(!D * RESET_B * !SCE * Q)	0.01422	0.01509	0.03831
	(!D * RESET_B * !SCE * Q)	0.01863	0.01949	0.04271
	(!D * RESET_B * !SCD * SCE * Q)	0.01424	0.01511	0.03833
	(!D * RESET_B * !SCD * SCE * Q)	0.01867	0.01953	0.04274
	(!D * !SCE * !Q)	0.00643	0.00723	0.02994
	(!D * !SCE * !Q)	0.01068	0.01145	0.03418
	(!D * !SCD * SCE * !Q)	0.00643	0.00722	0.02993
	(!D * !SCD * SCE * !Q)	0.01068	0.01147	0.03416
	(!D * !RESET_B * SCD * SCE * !Q)	0.00643	0.00723	0.02993
	(!D * !RESET_B * SCD * SCE * !Q)	0.01068	0.01146	0.03417

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00686	0.00765	0.03031
	(D * RESET_B * SCD * SCE * Q)	0.01110	0.01189	0.03455
	(D * RESET_B * SCD * SCE * !Q)	0.01286	0.01358	0.03687
	(D * RESET_B * SCD * SCE * !Q)	0.01693	0.01764	0.04093
	(D * RESET_B * SCD * !SCE * Q)	0.00685	0.00765	0.03031
	(D * RESET_B * SCD * !SCE * Q)	0.01110	0.01189	0.03455
	(D * RESET_B * SCD * !SCE * !Q)	0.01282	0.01354	0.03683
	(D * RESET_B * SCD * !SCE * !Q)	0.01689	0.01761	0.04089
	(D * RESET_B * !SCD * SCE * Q)	0.01391	0.01479	0.03779
	(D * RESET_B * !SCD * SCE * Q)	0.01835	0.01922	0.04222
	(D * RESET_B * !SCD * !SCE * Q)	0.00686	0.00765	0.03031
	(D * RESET_B * !SCD * !SCE * Q)	0.01110	0.01189	0.03455
	(D * RESET_B * !SCD * !SCE * !Q)	0.01282	0.01354	0.03683
	(D * RESET_B * !SCD * !SCE * !Q)	0.01689	0.01761	0.04089
	(D * !SCD * SCE * !Q)	0.00635	0.00715	0.02987
	(D * !SCD * SCE * !Q)	0.01060	0.01139	0.03411
	(D * !RESET_B * SCD * SCE * !Q)	0.00636	0.00716	0.02986
	(D * !RESET_B * SCD * SCE * !Q)	0.01060	0.01139	0.03410
	(D * !RESET_B * SCD * !SCE * !Q)	0.00635	0.00716	0.02985
	(D * !RESET_B * SCD * !SCE * !Q)	0.01060	0.01139	0.03410
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00635	0.00716	0.02985
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01060	0.01139	0.03410
	(!D * RESET_B * SCD * SCE * Q)	0.00686	0.00765	0.03031
	(!D * RESET_B * SCD * SCE * Q)	0.01110	0.01189	0.03455
	(!D * RESET_B * SCD * SCE * !Q)	0.01289	0.01361	0.03691
	(!D * RESET_B * SCD * SCE * !Q)	0.01695	0.01766	0.04096
	(!D * RESET_B * !SCE * Q)	0.01387	0.01475	0.03776
	(!D * RESET_B * !SCE * Q)	0.01829	0.01916	0.04217
	(!D * RESET_B * !SCD * SCE * Q)	0.01390	0.01477	0.03777
	(!D * RESET_B * !SCD * SCE * Q)	0.01833	0.01918	0.04219
	(!D * !SCE * !Q)	0.00635	0.00715	0.02987
	(!D * !SCE * !Q)	0.01059	0.01139	0.03411
	(!D * !SCD * SCE * !Q)	0.00635	0.00715	0.02987
	(!D * !SCD * SCE * !Q)	0.01060	0.01139	0.03411
	(!D * !RESET_B * SCD * SCE * !Q)	0.00636	0.00716	0.02986
	(!D * !RESET_B * SCD * SCE * !Q)	0.01060	0.01139	0.03410

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00189	0.00208	0.00400	0.00342	0.00295	1.04249	0.98635
sky130_fd_sc_hs__sdfsbp_2	0.00195	0.00201	0.00420	0.00345	0.00298	2.10789	2.11245

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.60057	0.88844
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.61907	1.24370

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)	0.29291	0.80976	6.44175
	SET_B->Q (FR)	0.27561	1.06682	9.30811
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.32073	0.73545	6.45207
	SET_B->Q (FR)	0.37538	1.05753	9.52342

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.24543	0.50134	2.22546
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.27393	0.51155	2.39252

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)	0.20960	0.76364	6.41961
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.20773	0.65341	6.37085

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)	0.23080	0.56008	2.21216
	SET_B->Q_N (FF)	0.21193	0.81625	5.14660
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.23059	0.53313	2.52638
	SET_B->Q_N (FF)	0.26222	0.87192	5.68367

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)	-0.08632	-0.17478	-0.93300
	setup	CLK (R)	0.13463	0.20523	1.01511
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10812	-0.19906	-0.96488
	setup	CLK (R)	0.16867	0.23896	1.15126

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)	-0.09948	-0.23505	-2.21020
	setup	CLK (R)	0.26716	0.37650	3.02440
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13206	-0.25478	-1.73779
	setup	CLK (R)	0.32049	0.41801	3.20852

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)	-0.08632	-0.17478	-0.93300
	setup	CLK (R)	0.13463	0.20523	1.01511
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10812	-0.19906	-0.96488
	setup	CLK (R)	0.16867	0.23896	1.15126

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)	-0.09948	-0.23505	-2.21020
	setup	CLK (R)	0.26716	0.37650	3.02440
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13206	-0.25478	-1.73779
	setup	CLK (R)	0.32049	0.41801	3.20852

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)	-0.10454	-0.18603	-0.96508
	setup	CLK (R)	0.15706	0.21879	1.02996
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12435	-0.20690	-0.98140
	setup	CLK (R)	0.18643	0.24716	1.13719

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)	-0.13006	-0.26827	-2.46064
	setup	CLK (R)	0.32786	0.43153	3.19637
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.15973	-0.29412	-2.01983
	setup	CLK (R)	0.38021	0.47765	3.38224

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)	-0.10454	-0.18603	-0.96508
	hold	CLK (R)	-0.10640	-0.19267	-0.97208
	setup	CLK (R)	0.15367	0.21437	1.02578
	setup	CLK (R)	0.15706	0.21879	1.02996
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12435	-0.20690	-0.98140
	hold	CLK (R)	-0.12978	-0.21324	-0.98900
	setup	CLK (R)	0.18643	0.24080	1.13213
	setup	CLK (R)	0.18618	0.24716	1.13719

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)	-0.13850	-0.28122	-2.48842
	hold	CLK (R)	-0.13006	-0.26827	-2.46064
	setup	CLK (R)	0.32786	0.43153	3.19637
	setup	CLK (R)	0.32056	0.42577	3.19410
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17081	-0.30711	-2.06572
	hold	CLK (R)	-0.15973	-0.29412	-2.01983
	setup	CLK (R)	0.38021	0.47765	3.38224
	setup	CLK (R)	0.37684	0.47518	3.37402

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)	-0.09199	-0.18134	-0.13357
	setup	CLK (R)	0.32051	0.32721	1.03091
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11544	-0.20335	0.06176
	setup	CLK (R)	0.37427	0.37579	1.17247

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)	-0.11962	-0.24305	-2.31973
	setup	CLK (R)	0.28594	0.38825	3.07269
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14551	-0.26218	-1.89228
	setup	CLK (R)	0.33409	0.42918	3.24801

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)	-0.13393	-0.18134	-0.13357
	hold	CLK (R)	-0.09199	-0.18995	-0.95584
	setup	CLK (R)	0.32051	0.32721	0.60236
	setup	CLK (R)	0.14261	0.21679	1.03091
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16655	-0.20335	0.06176
	hold	CLK (R)	-0.11544	-0.21290	-0.99154
	setup	CLK (R)	0.37427	0.37579	1.10212
	setup	CLK (R)	0.17672	0.24953	1.17247

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)	-0.15301	-0.28955	-2.59448
	hold	CLK (R)	-0.11962	-0.24305	-2.31973
	setup	CLK (R)	0.19873	0.31604	2.60960
	setup	CLK (R)	0.28594	0.38825	3.07269
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17124	-0.30477	-2.55540
	hold	CLK (R)	-0.14551	-0.26218	-1.89228
	setup	CLK (R)	0.23116	0.33920	2.61271
	setup	CLK (R)	0.33409	0.42918	3.24801

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)	-0.09488	-0.13363	-0.39668
	removal	CLK (R)	0.11848	0.15603	0.45180
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.12984	-0.18919	-0.55845
	removal	CLK (R)	0.14871	0.20507	0.81086

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)	-0.09489	-0.13364	-0.40038
	recovery	CLK (R)	-0.09488	-0.13363	-0.40040
	recovery	CLK (R)	-0.09556	-0.13405	-0.39668
	removal	CLK (R)	0.11848	0.15380	0.45109
	removal	CLK (R)	0.11848	0.15380	0.45109
	removal	CLK (R)	0.11625	0.15603	0.45180
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.13086	-0.18919	-0.56120
	recovery	CLK (R)	-0.12984	-0.18923	-0.56138
	recovery	CLK (R)	-0.13309	-0.18938	-0.55845
	removal	CLK (R)	0.14823	0.20507	0.81086
	removal	CLK (R)	0.14626	0.20507	0.81086
	removal	CLK (R)	0.14871	0.20507	0.80686

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 ()	0.22051	0.67627	16.50020
	min_pulse_width	SET_B ()	0.21544	0.67627	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.25596	0.67627	16.50020
	min_pulse_width	SET_B ()	0.29227	0.68471	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 ()	0.18000	0.67627	16.50020
	min_pulse_width	CLK ()	0.09644	0.67627	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.18759	0.67627	16.50020
	min_pulse_width	CLK ()	0.11163	0.67627	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 ()	0.18000	0.67627	16.50020
	min_pulse_width	CLK ()	0.28128	0.67627	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.22811	0.67627	16.50020
	min_pulse_width	CLK ()	0.34711	0.67627	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	0.01397	0.01425	0.02579
	CLK	0.01198	0.01220	0.02379
	SET_B	0.01328	0.01339	0.01939
	SET_B	0.01545	0.01555	0.02130
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01956	0.01994	0.03180
	CLK	0.01748	0.01787	0.02968
	SET_B	0.01864	0.01878	0.02514
	SET_B	0.02089	0.02103	0.02674

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01455	0.01498	0.02613
	CLK	0.01244	0.01279	0.02401
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01944	0.02030	0.03152
	CLK	0.01735	0.01807	0.02942

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01458	0.01497	0.02636
	CLK	0.01246	0.01282	0.02428
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01948	0.02022	0.03192
	CLK	0.01739	0.01810	0.02983

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01394	0.01416	0.02549
	CLK	0.01195	0.01216	0.02353
	SET_B	0.01325	0.01336	0.01909
	SET_B	0.01542	0.01552	0.02106
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01953	0.01994	0.03145
	CLK	0.01745	0.01781	0.02933
	SET_B	0.01861	0.01874	0.02417
	SET_B	0.02086	0.02100	0.02640

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00113	0.00114	0.00113
	(CLK * SCD * SCE)	-0.00055	-0.00056	-0.00055
	(CLK * !SCE)	0.00386	0.00407	0.01681
	(CLK * !SCE)	0.00093	0.00114	0.01389
	(CLK * !SCD * SCE)	0.00060	0.00060	0.00059
	(CLK * !SCD * SCE)	-0.00121	-0.00123	-0.00125
	(!CLK * SCD * SCE)	0.00113	0.00114	0.00113
	(!CLK * SCD * SCE)	-0.00055	-0.00056	-0.00055
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01031	0.01045	0.02156
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00707	0.00719	0.01831
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00827	0.00842	0.01930
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00492	0.00506	0.01595
	(!CLK * !SCD * SCE)	0.00060	0.00060	0.00059
	(!CLK * !SCD * SCE)	-0.00120	-0.00122	-0.00125

	(CLK * SCD * SCE)	0.00120	0.00121	0.00121
	(CLK * SCD * SCE)	-0.00053	-0.00053	-0.00053
	(CLK * !SCE)	0.00404	0.00423	0.01699
	(CLK * !SCE)	0.00106	0.00124	0.01401
	(CLK * !SCD * SCE)	0.00063	0.00064	0.00062
	(CLK * !SCD * SCE)	-0.00122	-0.00125	-0.00126
	(!CLK * SCD * SCE)	0.00120	0.00121	0.00120
	(!CLK * SCD * SCE)	-0.00053	-0.00054	-0.00053
sky130_fd_sc_hs__sdfsbp_2	**(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)**	0.01159	0.01170	0.02244
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00844	0.00854	0.01927
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00961	0.00973	0.02019
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00633	0.00644	0.01690
	(!CLK * !SCD * SCE)	0.00063	0.00063	0.00062
	(!CLK * !SCD * SCE)	-0.00122	-0.00124	-0.00126

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00107	-0.00109	-0.00112
	(CLK * SCD * SCE)	0.00060	0.00060	0.00058
	(CLK * !SCE)	0.00075	0.00135	0.01414
	(CLK * !SCE)	0.00366	0.00428	0.01705
	(CLK * !SCD * SCE)	-0.00057	-0.00057	-0.00057
	(CLK * !SCD * SCE)	0.00125	0.00125	0.00125
	(!CLK * SCD * SCE)	-0.00107	-0.00109	-0.00112
	(!CLK * SCD * SCE)	0.00059	0.00060	0.00058
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00685	0.00725	0.01953
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01012	0.01050	0.02277
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00404	0.00435	0.01600
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00739	0.00771	0.01936
	(!CLK * !SCD * SCE)	-0.00057	-0.00058	-0.00057
	(!CLK * !SCD * SCE)	0.00125	0.00126	0.00125

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00115	-0.00116	-0.00119
	(CLK * SCD * SCE)	0.00058	0.00057	0.00055
	(CLK * !SCE)	0.00088	0.00145	0.01428
	(CLK * !SCE)	0.00387	0.00444	0.01726
	(CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00060
	(CLK * !SCD * SCE)	0.00126	0.00127	0.00127
	(!CLK * SCD * SCE)	-0.00115	-0.00116	-0.00119
	(!CLK * SCD * SCE)	0.00058	0.00058	0.00055
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00883	0.00916	0.02129
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01200	0.01232	0.02446
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00583	0.00607	0.01750
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00912	0.00936	0.02078
	(!CLK * !SCD * SCE)	-0.00060	-0.00062	-0.00060
	(!CLK * !SCD * SCE)	0.00126	0.00128	0.00126

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00553	0.00549	0.01378
	(CLK * D * SCE)	0.00143	0.00139	0.00969
	(CLK * !D * SCE)	0.00627	0.00622	0.01421
	(CLK * !D * SCE)	0.00202	0.00196	0.00997
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01184	0.01177	0.01934
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00742	0.00734	0.01493
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00979	0.00975	0.01715
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00527	0.00522	0.01263
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01258	0.01251	0.01986
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00801	0.00793	0.01529
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01054	0.01048	0.01764
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00587	0.00580	0.01297
	!SCE	0.00140	0.00126	0.00123
	!SCE	-0.00100	-0.00115	-0.00117

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00556	0.00555	0.01380
	(CLK * D * SCE)	0.00153	0.00150	0.00977
	(CLK * !D * SCE)	0.00630	0.00627	0.01424
	(CLK * !D * SCE)	0.00212	0.00208	0.01006
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01300	0.01297	0.02035
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00879	0.00875	0.01614
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01102	0.01099	0.01816
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00669	0.00666	0.01383
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01375	0.01370	0.02087
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00938	0.00934	0.01650
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01176	0.01173	0.01868
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00728	0.00724	0.01419
	!SCE	0.00132	0.00118	0.00116
	!SCE	-0.00101	-0.00116	-0.00118

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00177	0.00172	0.00998
	(CLK * D * SCE)	0.00587	0.00582	0.01405
	(CLK * !D * SCE)	0.00138	0.00135	0.00979
	(CLK * !D * SCE)	0.00562	0.00560	0.01402
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00800	0.00792	0.01595
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01243	0.01234	0.02035
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00517	0.00507	0.01254
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00970	0.00961	0.01705
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00763	0.00756	0.01575
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01220	0.01213	0.02030
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00478	0.00470	0.01228
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00946	0.00937	0.01694
	!SCE	-0.00119	-0.00122	-0.00122
	!SCE	0.00119	0.00119	0.00119

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00197	0.00194	0.01016
	(CLK * D * SCE)	0.00601	0.00598	0.01417
	(CLK * !D * SCE)	0.00158	0.00156	0.00996
	(CLK * !D * SCE)	0.00576	0.00576	0.01413
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01001	0.00997	0.01776
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01423	0.01419	0.02196
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00700	0.00692	0.01414
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01134	0.01127	0.01846
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00965	0.00959	0.01754
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01401	0.01395	0.02189
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00660	0.00654	0.01387
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01109	0.01102	0.01834
	!SCE	-0.00112	-0.00114	-0.00114
	!SCE	0.00120	0.00120	0.00120

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)**	0.00485	0.00500	0.02079
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00045	-0.00032	0.01548
	(CLK * D * !SCD)	0.00737	0.00751	0.02362
	(CLK * D * !SCD)	0.00361	0.00371	0.01981
	(CLK * !D * SCD)	0.00854	0.00892	0.03367
	(CLK * !D * SCD)	0.00190	0.00228	0.02705
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00486	0.00500	0.02079
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00045	-0.00032	0.01548
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01329	0.01358	0.02963
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00985	0.01011	0.02613
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01045	0.01074	0.02677
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00711	0.00738	0.02338
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01498	0.01529	0.03935
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00802	0.00833	0.03241
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01294	0.01327	0.03706
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00588	0.00620	0.03004
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00477	0.00503	0.02073
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00020	0.00006	0.01576

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00507	0.00522	0.02112
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00043	-0.00028	0.01562
	(CLK * D * !SCD)	0.00771	0.00787	0.02410
	(CLK * D * !SCD)	0.00376	0.00388	0.02011
	(CLK * !D * SCD)	0.00885	0.00923	0.03426
	(CLK * !D * SCD)	0.00201	0.00239	0.02748
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00507	0.00521	0.02112
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00042	-0.00029	0.01562
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01544	0.01574	0.03192
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01167	0.01196	0.02809
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01242	0.01273	0.02885
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00879	0.00907	0.02515
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01639	0.01671	0.04089
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00938	0.00971	0.03390
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01441	0.01474	0.03859
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00728	0.00762	0.03151
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00491	0.00517	0.02099
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00025	0.00001	0.01583

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)**	-0.00028	0.00054	0.01646
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00500	0.00585	0.02175
	(CLK * D * !SCD)	0.00367	0.00426	0.02038
	(CLK * D * !SCD)	0.00747	0.00808	0.02403
	(CLK * !D * SCD)	0.00108	0.00180	0.02640
	(CLK * !D * SCD)	0.00770	0.00842	0.03302
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00027	0.00054	0.01646
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00500	0.00585	0.02175
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01009	0.01078	0.02654
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01356	0.01424	0.02988
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00804	0.00873	0.02452
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01142	0.01212	0.02775
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00721	0.00784	0.03174
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01414	0.01478	0.03869
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00438	0.00500	0.02838
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01143	0.01206	0.03543
	(!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	0.00094	0.01663
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00504	0.00592	0.02160

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00045	0.00036	0.01642
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00502	0.00586	0.02191
	(CLK * D * !SCD)	0.00358	0.00419	0.02039
	(CLK * D * !SCD)	0.00756	0.00816	0.02422
	(CLK * !D * SCD)	0.00123	0.00192	0.02681
	(CLK * !D * SCD)	0.00803	0.00874	0.03363
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00045	0.00037	0.01642
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00503	0.00587	0.02191
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01109	0.01181	0.02766
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01489	0.01558	0.03133
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00911	0.00982	0.02569
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01280	0.01349	0.02923
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00918	0.00979	0.03375
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01617	0.01678	0.04075
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00618	0.00677	0.03018
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01329	0.01390	0.03730
	(!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	0.00087	0.01666
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00513	0.00604	0.02182

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)	0.00242	0.00245	0.00243
	(CLK * Q * !Q_N)	-0.00208	-0.00210	-0.00209
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00257	0.00258	0.00258
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00193	-0.00193	-0.00193
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00479	0.00485	0.01142
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00011	0.00014	0.00672
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00247	0.00249	0.00247
	(CLK * Q * !Q_N)	-0.00216	-0.00217	-0.00216
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00257	0.00260	0.00258
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00206	-0.00207	-0.00206
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00505	0.00508	0.01163
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00023	0.00027	0.00680

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)	-0.00238	-0.00243	-0.00242
	(CLK * Q * !Q_N)	0.00214	0.00213	0.00211
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00254	-0.00258	-0.00257
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00199	0.00198	0.00195
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00004	0.00029	0.00693
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00463	0.00499	0.01162
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00240	-0.00247	-0.00246
	(CLK * Q * !Q_N)	0.00219	0.00220	0.00218
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00250	-0.00258	-0.00257
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00209	0.00210	0.00208
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00024	0.00007	0.00669
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00458	0.00491	0.01152

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)	0.01327	0.01341	0.03537
	(D * SCD * SCE * Q * !Q_N)	0.00915	0.00928	0.03125
	(D * !SCE * Q * !Q_N)	0.01326	0.01341	0.03537
	(D * !SCE * Q * !Q_N)	0.00914	0.00928	0.03125
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01316	0.01329	0.03525
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00904	0.00916	0.03112
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02401	0.02436	0.04697
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01946	0.01981	0.04244
	(!D * SCD * SCE * Q * !Q_N)	0.01327	0.01341	0.03537
	(!D * SCD * SCE * Q * !Q_N)	0.00914	0.00928	0.03125
	(!D * !SCE * SET_B * !Q * Q_N)	0.01316	0.01328	0.03524
	(!D * !SCE * SET_B * !Q * Q_N)	0.00903	0.00916	0.03112
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02400	0.02436	0.04697
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01946	0.01980	0.04243
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01316	0.01329	0.03524
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00904	0.00916	0.03112
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02406	0.02438	0.04695
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01951	0.01982	0.04242

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01729	0.01735	0.03938
	(D * SCD * SCE * Q * !Q_N)	0.01313	0.01317	0.03523
	(D * !SCE * Q * !Q_N)	0.01729	0.01734	0.03938
	(D * !SCE * Q * !Q_N)	0.01313	0.01317	0.03522
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01704	0.01708	0.03915
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01288	0.01290	0.03499
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03888	0.03944	0.06278
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03443	0.03498	0.05833
	(!D * SCD * SCE * Q * !Q_N)	0.01729	0.01735	0.03938
	(!D * SCD * SCE * Q * !Q_N)	0.01313	0.01317	0.03523
	(!D * !SCE * SET_B * !Q * Q_N)	0.01704	0.01708	0.03915
	(!D * !SCE * SET_B * !Q * Q_N)	0.01287	0.01290	0.03499
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03887	0.03943	0.06295
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03441	0.03497	0.05849
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01705	0.01708	0.03915
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01288	0.01290	0.03498
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03897	0.03946	0.06290
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03451	0.03499	0.05844

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01364	0.01437	0.03751
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01744	0.01817	0.04131
	(D * SCD * SCE * Q * !Q_N)	0.00744	0.00823	0.03098
	(D * SCD * SCE * Q * !Q_N)	0.01156	0.01236	0.03510
	(D * !SCE * SET_B * !Q * Q_N)	0.01361	0.01434	0.03749
	(D * !SCE * SET_B * !Q * Q_N)	0.01741	0.01814	0.04129
	(D * !SCE * Q * !Q_N)	0.00743	0.00823	0.03098
	(D * !SCE * Q * !Q_N)	0.01156	0.01236	0.03510
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01506	0.01593	0.03918
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01952	0.02038	0.04365
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00756	0.00837	0.03115
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01168	0.01250	0.03528
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01217	0.01307	0.03631
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01670	0.01762	0.04086
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01367	0.01441	0.03755
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01746	0.01819	0.04133
	(!D * SCD * SCE * Q * !Q_N)	0.00744	0.00823	0.03098
	(!D * SCD * SCE * Q * !Q_N)	0.01156	0.01236	0.03510
	(!D * !SCE * SET_B * Q * !Q_N)	0.01504	0.01591	0.03916
	(!D * !SCE * SET_B * Q * !Q_N)	0.01949	0.02034	0.04360
	(!D * !SCE * SET_B * !Q * Q_N)	0.00755	0.00837	0.03115
	(!D * !SCE * SET_B * !Q * Q_N)	0.01168	0.01249	0.03527
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01220	0.01306	0.03631
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01675	0.01762	0.04086
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01505	0.01593	0.03921
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01951	0.02037	0.04367
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00756	0.00838	0.03115
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01168	0.01249	0.03528
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01221	0.01309	0.03635
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01676	0.01764	0.04091

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01643	0.01703	0.04005
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02042	0.02101	0.04404
	(D * SCD * SCE * Q * !Q_N)	0.00897	0.00960	0.03219
	(D * SCD * SCE * Q * !Q_N)	0.01314	0.01377	0.03636
	(D * !SCE * SET_B * !Q * Q_N)	0.01639	0.01700	0.04002
	(D * !SCE * SET_B * !Q * Q_N)	0.02039	0.02098	0.04401
	(D * !SCE * Q * !Q_N)	0.00897	0.00960	0.03219
	(D * !SCE * Q * !Q_N)	0.01314	0.01376	0.03636
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01900	0.01969	0.04286
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02337	0.02405	0.04723
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00923	0.00986	0.03256
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01340	0.01404	0.03673
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01588	0.01658	0.03976
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02035	0.02104	0.04423
sky130_fd_sc_hs__sdfsbp_2	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.01646	0.01707	0.04009
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02044	0.02105	0.04406
	(!D * SCD * SCE * Q * !Q_N)	0.00897	0.00960	0.03219
	(!D * SCD * SCE * Q * !Q_N)	0.01314	0.01377	0.03636
	(!D * !SCE * SET_B * Q * !Q_N)	0.01898	0.01966	0.04283
	(!D * !SCE * SET_B * Q * !Q_N)	0.02333	0.02400	0.04718
	(!D * !SCE * SET_B * !Q * Q_N)	0.00923	0.00986	0.03255
	(!D * !SCE * SET_B * !Q * Q_N)	0.01340	0.01403	0.03672
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01588	0.01658	0.03979
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02035	0.02103	0.04425
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01901	0.01969	0.04286
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02337	0.02404	0.04722
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00923	0.00986	0.03255
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01340	0.01404	0.03673
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01589	0.01658	0.03977
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02035	0.02105	0.04423

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00188	0.00208	0.00398	0.00333	0.00294	1.04223
sky130_fd_sc_hs__sdfstp_2	0.00188	0.00204	0.00398	0.00343	0.00294	2.12091
sky130_fd_sc_hs__sdfstp_4	0.00188	0.00209	0.00404	0.00344	0.00293	3.98275

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.56325	0.83556
sky130_fd_sc_hs__sdfstp_2	0.00000	0.54443	1.23131
sky130_fd_sc_hs__sdfstp_4	0.00000	0.88809	1.33482

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)	0.24057	0.76053	6.35465
	SET_B->Q (FR)	0.23632	1.01982	9.13639
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.21996	0.64051	6.35750
	SET_B->Q (FR)	0.27018	0.95832	9.28216
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.25432	0.60103	6.34787
	SET_B->Q (FR)	0.31489	0.93266	9.33123

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.23313	0.48881	2.22056
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.24730	0.47982	2.34273
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.25312	0.46219	2.37265

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)	-0.08901	-0.17711	-0.93242
	setup	CLK (R)	0.13597	0.20786	1.01043
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10493	-0.19694	-0.99356
	setup	CLK (R)	0.16910	0.23729	1.11629
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10461	-0.19848	-0.99974
	setup	CLK (R)	0.16462	0.23506	1.12479

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)	-0.08378	-0.22054	-2.27808
	setup	CLK (R)	0.25912	0.36879	2.99562
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09425	-0.22600	-2.30954
	setup	CLK (R)	0.29783	0.40364	3.11151
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10308	-0.23555	-2.21327
	setup	CLK (R)	0.29759	0.40632	3.12681

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)	-0.08901	-0.17711	-0.93242
	setup	CLK (R)	0.13597	0.20786	1.01043
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10493	-0.19694	-0.99356
	setup	CLK (R)	0.16910	0.23729	1.11629
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10461	-0.19848	-0.99974
	setup	CLK (R)	0.16462	0.23506	1.12479

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)	-0.08378	-0.22054	-2.27808
	setup	CLK (R)	0.25912	0.36879	2.99562
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09425	-0.22600	-2.30954
	setup	CLK (R)	0.29783	0.40364	3.11151
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10308	-0.23555	-2.21327
	setup	CLK (R)	0.29759	0.40632	3.12681

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)	-0.10641	-0.18774	-0.96418
	setup	CLK (R)	0.16128	0.22186	1.02222
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12313	-0.20603	-1.01343
	setup	CLK (R)	0.19153	0.24824	1.10911
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12288	-0.20661	-1.01778
	setup	CLK (R)	0.18398	0.24444	1.11801

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)	-0.11363	-0.25200	-2.52806
	setup	CLK (R)	0.31840	0.42183	3.17118
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12106	-0.25985	-2.56242
	setup	CLK (R)	0.35616	0.45974	3.28226
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13208	-0.27211	-2.46462
	setup	CLK (R)	0.35903	0.46255	3.29094

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)	-0.10641	-0.18774	-0.96418
	hold	CLK (R)	-0.10756	-0.19264	-0.96957
	setup	CLK (R)	0.15850	0.21551	1.01935
	setup	CLK (R)	0.16128	0.22186	1.02222
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12313	-0.20603	-1.01343
	hold	CLK (R)	-0.12956	-0.21162	-1.01761
	setup	CLK (R)	0.18935	0.24347	1.10459
	setup	CLK (R)	0.19153	0.24824	1.10911
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12288	-0.20661	-1.01778
	hold	CLK (R)	-0.12843	-0.21203	-1.02503
	setup	CLK (R)	0.18181	0.23999	1.11692
	setup	CLK (R)	0.18398	0.24444	1.11801

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)	-0.12013	-0.26239	-2.54675
	hold	CLK (R)	-0.11363	-0.25200	-2.52806
	setup	CLK (R)	0.31840	0.42183	3.17118
	setup	CLK (R)	0.30956	0.41941	3.16864
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12915	-0.27288	-2.61255
	hold	CLK (R)	-0.12106	-0.25985	-2.56242
	setup	CLK (R)	0.35616	0.45974	3.28226
	setup	CLK (R)	0.34890	0.45608	3.27857
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14073	-0.28469	-2.50442
	hold	CLK (R)	-0.13208	-0.27211	-2.46462
	setup	CLK (R)	0.35903	0.46255	3.28929
	setup	CLK (R)	0.34916	0.45548	3.29094

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)	-0.09559	-0.16371	-0.19675
	setup	CLK (R)	0.31320	0.32069	1.02156
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11506	-0.17135	-0.20963
	setup	CLK (R)	0.35201	0.35869	1.12800
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11398	-0.18234	-0.17122
	setup	CLK (R)	0.35305	0.35778	1.13727

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)	-0.10349	-0.22796	-2.39874
	setup	CLK (R)	0.27453	0.37732	3.04253
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11265	-0.23640	-2.44539
	setup	CLK (R)	0.31406	0.41208	3.16438
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11945	-0.24546	-2.34865
	setup	CLK (R)	0.31493	0.41728	3.17671

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)	-0.11796	-0.16371	-0.19675
	hold	CLK (R)	-0.09559	-0.18861	-0.95634
	setup	CLK (R)	0.31320	0.32069	0.58430
	setup	CLK (R)	0.14567	0.22080	1.02156
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.12483	-0.17135	-0.20963
	hold	CLK (R)	-0.11506	-0.21003	-1.01510
	setup	CLK (R)	0.35201	0.35869	0.69273
	setup	CLK (R)	0.17908	0.25080	1.12800
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.13736	-0.18234	-0.17122
	hold	CLK (R)	-0.11398	-0.21158	-1.02006
	setup	CLK (R)	0.35305	0.35778	0.72331
	setup	CLK (R)	0.17379	0.24652	1.13727

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)	-0.15108	-0.29307	-2.60046
	hold	CLK (R)	-0.10349	-0.22796	-2.39874
	setup	CLK (R)	0.20569	0.31745	2.61309
	setup	CLK (R)	0.27453	0.37732	3.04253
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.17290	-0.30799	-2.60584
	hold	CLK (R)	-0.11265	-0.23640	-2.44539
	setup	CLK (R)	0.23502	0.34061	2.63768
	setup	CLK (R)	0.31406	0.41208	3.16438
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17149	-0.30951	-2.60700
	hold	CLK (R)	-0.11945	-0.24546	-2.34865
	setup	CLK (R)	0.22923	0.34061	2.63935
	setup	CLK (R)	0.31493	0.41728	3.17671

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)	-0.09828	-0.14466	-0.42541
	removal	CLK (R)	0.12016	0.16049	0.52887
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.14095	-0.18724	-0.46943
	removal	CLK (R)	0.16885	0.38340	4.15501
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.13504	-0.18501	-0.48530
	removal	CLK (R)	0.15105	0.24297	2.78464

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)	-0.09828	-0.14466	-0.42541
	recovery	CLK (R)	-0.09828	-0.14466	-0.42541
	recovery	CLK (R)	-0.09828	-0.14466	-0.42541
	removal	CLK (R)	0.11726	0.16049	0.52887
	removal	CLK (R)	0.12016	0.16049	0.52887
	removal	CLK (R)	0.12016	0.16049	0.52487
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.14095	-0.18724	-0.46943
	recovery	CLK (R)	-0.14095	-0.18724	-0.46943
	recovery	CLK (R)	-0.14095	-0.18724	-0.47048
	removal	CLK (R)	0.16885	0.38340	4.14575
	removal	CLK (R)	0.16885	0.38340	4.15501
	removal	CLK (R)	0.16885	0.38340	4.10193
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.13504	-0.18501	-0.48530
	recovery	CLK (R)	-0.13504	-0.18501	-0.48530
	recovery	CLK (R)	-0.13504	-0.18501	-0.48530
	removal	CLK (R)	0.14882	0.24297	2.78464
	removal	CLK (R)	0.15105	0.24074	2.78157
	removal	CLK (R)	0.14839	0.24297	2.74655

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 ()	0.20025	0.67627	16.50020
	min_pulse_width	SET_B ()	0.17493	0.67627	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.21291	0.67627	16.50020
	min_pulse_width	SET_B ()	0.20278	0.67627	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.21798	0.67627	16.50020
	min_pulse_width	SET_B ()	0.22304	0.67627	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 ()	0.13189	0.67627	16.50020
	min_pulse_width	CLK ()	0.08884	0.67627	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.10910	0.67627	16.50020
	min_pulse_width	CLK ()	0.09897	0.67627	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.12936	0.67627	16.50020
	min_pulse_width	CLK ()	0.09897	0.67627	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 ()	0.18000	0.67627	16.50020
	min_pulse_width	CLK ()	0.27368	0.67627	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.22811	0.67627	16.50020
	min_pulse_width	CLK ()	0.32432	0.67627	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.22051	0.67627	16.50020
	min_pulse_width	CLK ()	0.31926	0.67627	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	0.02468	0.02488	0.04798
	CLK	0.02078	0.02100	0.04428
	SET_B	0.02332	0.02305	0.03436
	SET_B	0.02763	0.02735	0.03880
sky130_fd_sc_hs__sdfstp_2	CLK	0.03052	0.03094	0.05401
	CLK	0.02666	0.02710	0.05056
	SET_B	0.03058	0.03039	0.04136
	SET_B	0.03496	0.03474	0.04590
sky130_fd_sc_hs__sdfstp_4	CLK	0.03633	0.03727	0.06053
	CLK	0.03253	0.03350	0.05755
	SET_B	0.03635	0.03683	0.04796
	SET_B	0.04080	0.04126	0.05254

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.02653	0.02696	0.04940
	CLK	0.02232	0.02267	0.04504
sky130_fd_sc_hs__sdfstp_2	CLK	0.03250	0.03321	0.05561
	CLK	0.02837	0.02907	0.05101
sky130_fd_sc_hs__sdfstp_4	CLK	0.03882	0.04028	0.06308
	CLK	0.03457	0.03604	0.05831

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00112	0.00113	0.00112
	(CLK * SCD * SCE)	-0.00055	-0.00055	-0.00055
	(CLK * !SCE)	0.00390	0.00412	0.01688
	(CLK * !SCE)	0.00100	0.00121	0.01397
	(CLK * !SCD * SCE)	0.00059	0.00060	0.00058
	(CLK * !SCD * SCE)	-0.00120	-0.00122	-0.00124
	(!CLK * SCD * SCE)	0.00112	0.00113	0.00112
	(!CLK * SCD * SCE)	-0.00054	-0.00055	-0.00055
	(!CLK * !SCE * SET_B)	0.01001	0.01016	0.02129
	(!CLK * !SCE * SET_B)	0.00684	0.00697	0.01812
	(!CLK * !SCE * !SET_B * Q)	0.00809	0.00825	0.01914
	(!CLK * !SCE * !SET_B * Q)	0.00484	0.00498	0.01589
	(!CLK * !SCD * SCE)	0.00059	0.00059	0.00058
	(!CLK * !SCD * SCE)	-0.00120	-0.00121	-0.00124
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00112	0.00113	0.00112
	(CLK * SCD * SCE)	-0.00055	-0.00056	-0.00055
	(CLK * !SCE)	0.00386	0.00407	0.01683
	(CLK * !SCE)	0.00095	0.00117	0.01392
	(CLK * !SCD * SCE)	0.00059	0.00060	0.00058
	(CLK * !SCD * SCE)	-0.00120	-0.00122	-0.00124
	(!CLK * SCD * SCE)	0.00111	0.00112	0.00112
	(!CLK * SCD * SCE)	-0.00055	-0.00056	-0.00055
	(!CLK * !SCE * SET_B)	0.01145	0.01160	0.02238
	(!CLK * !SCE * SET_B)	0.00816	0.00830	0.01908
	(!CLK * !SCE * !SET_B * Q)	0.00941	0.00956	0.02005
	(!CLK * !SCE * !SET_B * Q)	0.00603	0.00618	0.01667
	(!CLK * !SCD * SCE)	0.00059	0.00060	0.00058
	(!CLK * !SCD * SCE)	-0.00120	-0.00123	-0.00124

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00112	0.00113	0.00112
	(CLK * SCD * SCE)	-0.00055	-0.00055	-0.00055
	(CLK * !SCE)	0.00400	0.00420	0.01689
	(CLK * !SCE)	0.00110	0.00130	0.01398
	(CLK * !SCD * SCE)	0.00060	0.00060	0.00059
	(CLK * !SCD * SCE)	-0.00119	-0.00121	-0.00123
	(!CLK * SCD * SCE)	0.00112	0.00113	0.00112
	(!CLK * SCD * SCE)	-0.00055	-0.00055	-0.00055
	(!CLK * !SCE * SET_B)	0.01136	0.01150	0.02226
	(!CLK * !SCE * SET_B)	0.00815	0.00829	0.01905
	(!CLK * !SCE * !SET_B * Q)	0.00935	0.00950	0.01997
	(!CLK * !SCE * !SET_B * Q)	0.00606	0.00620	0.01667
	(!CLK * !SCD * SCE)	0.00060	0.00061	0.00059
	(!CLK * !SCD * SCE)	-0.00119	-0.00122	-0.00123

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00107	-0.00108	-0.00111
	(CLK * SCD * SCE)	0.00060	0.00059	0.00057
	(CLK * !SCE)	0.00064	0.00126	0.01405
	(CLK * !SCE)	0.00354	0.00416	0.01696
	(CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00057
	(CLK * !SCD * SCE)	0.00124	0.00124	0.00124
	(!CLK * SCD * SCE)	-0.00106	-0.00108	-0.00111
	(!CLK * SCD * SCE)	0.00059	0.00059	0.00057
	(!CLK * !SCE * SET_B)	0.00679	0.00721	0.01949
	(!CLK * !SCE * SET_B)	0.00997	0.01037	0.02266
	(!CLK * !SCE * !SET_B * Q)	0.00414	0.00445	0.01611
	(!CLK * !SCE * !SET_B * Q)	0.00740	0.00772	0.01938
	(!CLK * !SCD * SCE)	-0.00056	-0.00058	-0.00057
	(!CLK * !SCD * SCE)	0.00124	0.00125	0.00124
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00107	-0.00108	-0.00111
	(CLK * SCD * SCE)	0.00060	0.00059	0.00057
	(CLK * !SCE)	0.00069	0.00131	0.01410
	(CLK * !SCE)	0.00359	0.00421	0.01700
	(CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00057
	(CLK * !SCD * SCE)	0.00124	0.00124	0.00124
	(!CLK * SCD * SCE)	-0.00106	-0.00109	-0.00111
	(!CLK * SCD * SCE)	0.00059	0.00060	0.00057
	(!CLK * !SCE * SET_B)	0.00795	0.00826	0.02043
	(!CLK * !SCE * SET_B)	0.01126	0.01155	0.02372
	(!CLK * !SCE * !SET_B * Q)	0.00516	0.00544	0.01686
	(!CLK * !SCE * !SET_B * Q)	0.00854	0.00882	0.02025
	(!CLK * !SCD * SCE)	-0.00056	-0.00058	-0.00057
	(!CLK * !SCD * SCE)	0.00124	0.00125	0.00124

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00106	-0.00108	-0.00110
	(CLK * SCD * SCE)	0.00060	0.00059	0.00057
	(CLK * !SCE)	0.00081	0.00140	0.01414
	(CLK * !SCE)	0.00371	0.00431	0.01705
	(CLK * !SCD * SCE)	-0.00056	-0.00057	-0.00057
	(CLK * !SCD * SCE)	0.00123	0.00123	0.00123
	(!CLK * SCD * SCE)	-0.00105	-0.00108	-0.00110
	(!CLK * SCD * SCE)	0.00059	0.00060	0.00057
	(!CLK * !SCE * SET_B)	0.00805	0.00842	0.02052
	(!CLK * !SCE * SET_B)	0.01127	0.01163	0.02373
	(!CLK * !SCE * !SET_B * Q)	0.00529	0.00556	0.01698
	(!CLK * !SCE * !SET_B * Q)	0.00859	0.00887	0.02029
	(!CLK * !SCD * SCE)	-0.00056	-0.00058	-0.00056
	(!CLK * !SCD * SCE)	0.00124	0.00125	0.00124

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00556	0.00552	0.01382
	(CLK * D * SCE)	0.00146	0.00142	0.00973
	(CLK * !D * SCE)	0.00631	0.00625	0.01425
	(CLK * !D * SCE)	0.00206	0.00199	0.01001
	(!CLK * D * SCE * SET_B)	0.01153	0.01146	0.01906
	(!CLK * D * SCE * SET_B)	0.00717	0.00710	0.01470
	(!CLK * D * SCE * !SET_B * Q)	0.00961	0.00957	0.01697
	(!CLK * D * SCE * !SET_B * Q)	0.00517	0.00511	0.01252
	(!CLK * !D * SCE * SET_B)	0.01228	0.01221	0.01957
	(!CLK * !D * SCE * SET_B)	0.00777	0.00769	0.01507
	(!CLK * !D * SCE * !SET_B * Q)	0.01036	0.01030	0.01746
	(!CLK * !D * SCE * !SET_B * Q)	0.00576	0.00570	0.01288
	!SCE	0.00139	0.00125	0.00122
	!SCE	-0.00101	-0.00117	-0.00118
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00548	0.00545	0.01374
	(CLK * D * SCE)	0.00143	0.00138	0.00969
	(CLK * !D * SCE)	0.00622	0.00618	0.01417
	(CLK * !D * SCE)	0.00202	0.00196	0.00996
	(!CLK * D * SCE * SET_B)	0.01294	0.01290	0.02031
	(!CLK * D * SCE * SET_B)	0.00850	0.00845	0.01587
	(!CLK * D * SCE * !SET_B * Q)	0.01090	0.01086	0.01806
	(!CLK * D * SCE * !SET_B * Q)	0.00638	0.00632	0.01353
	(!CLK * !D * SCE * SET_B)	0.01369	0.01363	0.02081
	(!CLK * !D * SCE * SET_B)	0.00910	0.00903	0.01622
	(!CLK * !D * SCE * !SET_B * Q)	0.01165	0.01160	0.01857
	(!CLK * !D * SCE * !SET_B * Q)	0.00697	0.00690	0.01390
	!SCE	0.00136	0.00122	0.00119
	!SCE	-0.00101	-0.00117	-0.00118

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00566	0.00562	0.01388
	(CLK * D * SCE)	0.00156	0.00151	0.00979
	(CLK * !D * SCE)	0.00640	0.00634	0.01431
	(CLK * !D * SCE)	0.00215	0.00209	0.01007
	(!CLK * D * SCE * SET_B)	0.01288	0.01282	0.02023
	(!CLK * D * SCE * SET_B)	0.00848	0.00842	0.01583
	(!CLK * D * SCE * !SET_B * Q)	0.01087	0.01082	0.01802
	(!CLK * D * SCE * !SET_B * Q)	0.00638	0.00634	0.01354
	(!CLK * !D * SCE * SET_B)	0.01362	0.01357	0.02076
	(!CLK * !D * SCE * SET_B)	0.00907	0.00901	0.01621
	(!CLK * !D * SCE * !SET_B * Q)	0.01162	0.01156	0.01853
	(!CLK * !D * SCE * !SET_B * Q)	0.00698	0.00692	0.01391
	!SCE	0.00139	0.00125	0.00122
	!SCE	-0.00101	-0.00117	-0.00118

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00168	0.00163	0.00990
	(CLK * D * SCE)	0.00579	0.00573	0.01398
	(CLK * !D * SCE)	0.00129	0.00126	0.00971
	(CLK * !D * SCE)	0.00553	0.00552	0.01394
	(!CLK * D * SCE * SET_B)	0.00794	0.00786	0.01591
	(!CLK * D * SCE * SET_B)	0.01231	0.01222	0.02025
	(!CLK * D * SCE * !SET_B * Q)	0.00528	0.00518	0.01264
	(!CLK * D * SCE * !SET_B * Q)	0.00973	0.00964	0.01708
	(!CLK * !D * SCE * SET_B)	0.00757	0.00751	0.01571
	(!CLK * !D * SCE * SET_B)	0.01208	0.01202	0.02020
	(!CLK * !D * SCE * !SET_B * Q)	0.00489	0.00480	0.01239
	(!CLK * !D * SCE * !SET_B * Q)	0.00949	0.00940	0.01697
	!SCE	-0.00118	-0.00121	-0.00121
	!SCE	0.00120	0.00121	0.00121
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00179	0.00174	0.01000
	(CLK * D * SCE)	0.00586	0.00581	0.01405
	(CLK * !D * SCE)	0.00140	0.00138	0.00982
	(CLK * !D * SCE)	0.00561	0.00559	0.01401
	(!CLK * D * SCE * SET_B)	0.00916	0.00913	0.01695
	(!CLK * D * SCE * SET_B)	0.01361	0.01358	0.02138
	(!CLK * D * SCE * !SET_B * Q)	0.00635	0.00626	0.01354
	(!CLK * D * SCE * !SET_B * Q)	0.01089	0.01080	0.01806
	(!CLK * !D * SCE * SET_B)	0.00879	0.00871	0.01674
	(!CLK * !D * SCE * SET_B)	0.01338	0.01331	0.02132
	(!CLK * !D * SCE * !SET_B * Q)	0.00596	0.00588	0.01327
	(!CLK * !D * SCE * !SET_B * Q)	0.01064	0.01056	0.01795
	!SCE	-0.00116	-0.00118	-0.00118
	!SCE	0.00119	0.00120	0.00120

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00184	0.00179	0.01002
	(CLK * D * SCE)	0.00595	0.00589	0.01409
	(CLK * !D * SCE)	0.00145	0.00142	0.00983
	(CLK * !D * SCE)	0.00570	0.00567	0.01406
	(!CLK * D * SCE * SET_B)	0.00920	0.00917	0.01699
	(!CLK * D * SCE * SET_B)	0.01361	0.01358	0.02138
	(!CLK * D * SCE * !SET_B * Q)	0.00643	0.00633	0.01361
	(!CLK * D * SCE * !SET_B * Q)	0.01093	0.01083	0.01809
	(!CLK * !D * SCE * SET_B)	0.00884	0.00876	0.01678
	(!CLK * !D * SCE * SET_B)	0.01339	0.01331	0.02132
	(!CLK * !D * SCE * !SET_B * Q)	0.00604	0.00595	0.01335
	(!CLK * !D * SCE * !SET_B * Q)	0.01068	0.01060	0.01798
	!SCE	-0.00118	-0.00121	-0.00121
	!SCE	0.00120	0.00121	0.00121

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00487	0.00501	0.02079
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00043	-0.00029	0.01549
	(CLK * D * !SCD)	0.00729	0.00743	0.02354
	(CLK * D * !SCD)	0.00354	0.00365	0.01973
	(CLK * !D * SCD)	0.00859	0.00896	0.03373
	(CLK * !D * SCD)	0.00197	0.00236	0.02713
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00487	0.00501	0.02079
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00043	-0.00029	0.01549
	(!CLK * D * !SCD * SET_B)	0.01326	0.01354	0.02958
	(!CLK * D * !SCD * SET_B)	0.00976	0.01003	0.02606
	(!CLK * D * !SCD * !SET_B * Q)	0.01057	0.01088	0.02686
	(!CLK * D * !SCD * !SET_B * Q)	0.00717	0.00744	0.02341
	(!CLK * !D * SCD * SET_B)	0.01469	0.01499	0.03910
	(!CLK * !D * SCD * SET_B)	0.00780	0.00812	0.03224
	(!CLK * !D * SCD * !SET_B * Q)	0.01277	0.01309	0.03691
	(!CLK * !D * SCD * !SET_B * Q)	0.00580	0.00613	0.02997
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00478	0.00506	0.02074
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00016	0.00009	0.01579

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00487	0.00501	0.02078
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00042	-0.00029	0.01548
	(CLK * D * !SCD)	0.00738	0.00753	0.02360
	(CLK * D * !SCD)	0.00362	0.00373	0.01978
	(CLK * !D * SCD)	0.00855	0.00892	0.03367
	(CLK * !D * SCD)	0.00193	0.00231	0.02707
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00487	0.00501	0.02078
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00042	-0.00029	0.01548
	(!CLK * D * !SCD * SET_B)	0.01442	0.01473	0.03076
	(!CLK * D * !SCD * SET_B)	0.01104	0.01133	0.02732
	(!CLK * D * !SCD * !SET_B * Q)	0.01162	0.01193	0.02789
	(!CLK * D * !SCD * !SET_B * Q)	0.00832	0.00861	0.02455
	(!CLK * !D * SCD * SET_B)	0.01613	0.01644	0.04034
	(!CLK * !D * SCD * SET_B)	0.00913	0.00945	0.03335
	(!CLK * !D * SCD * !SET_B * Q)	0.01409	0.01442	0.03800
	(!CLK * !D * SCD * !SET_B * Q)	0.00701	0.00732	0.03093
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00480	0.00508	0.02074
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00015	0.00010	0.01578

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00491	0.00506	0.02083
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00043	-0.00030	0.01548
	(CLK * D * !SCD)	0.00749	0.00763	0.02373
	(CLK * D * !SCD)	0.00368	0.00378	0.01988
	(CLK * !D * SCD)	0.00873	0.00911	0.03382
	(CLK * !D * SCD)	0.00206	0.00242	0.02717
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00491	0.00505	0.02083
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00042	-0.00030	0.01548
	(!CLK * D * !SCD * SET_B)	0.01452	0.01482	0.03085
	(!CLK * D * !SCD * SET_B)	0.01102	0.01129	0.02730
	(!CLK * D * !SCD * !SET_B * Q)	0.01175	0.01206	0.02803
	(!CLK * D * !SCD * !SET_B * Q)	0.00833	0.00861	0.02456
	(!CLK * !D * SCD * SET_B)	0.01608	0.01639	0.04030
	(!CLK * !D * SCD * SET_B)	0.00911	0.00942	0.03334
	(!CLK * !D * SCD * !SET_B * Q)	0.01408	0.01440	0.03799
	(!CLK * !D * SCD * !SET_B * Q)	0.00702	0.00733	0.03094
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00484	0.00511	0.02079
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00016	0.00008	0.01578

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)**	-0.00026	0.00056	0.01646
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00503	0.00585	0.02175
	(CLK * D * !SCD)	0.00374	0.00433	0.02042
	(CLK * D * !SCD)	0.00753	0.00813	0.02407
	(CLK * !D * SCD)	0.00100	0.00171	0.02631
	(CLK * !D * SCD)	0.00759	0.00831	0.03292
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00025	0.00056	0.01646
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00501	0.00586	0.02175
	(!CLK * D * !SCD * SET_B)	0.00981	0.01050	0.02625
	(!CLK * D * !SCD * SET_B)	0.01334	0.01402	0.02964
	(!CLK * D * !SCD * !SET_B * Q)	0.00789	0.00858	0.02436
	(!CLK * D * !SCD * !SET_B * Q)	0.01133	0.01201	0.02766
	(!CLK * !D * SCD * SET_B)	0.00715	0.00779	0.03169
	(!CLK * !D * SCD * SET_B)	0.01401	0.01465	0.03854
	(!CLK * !D * SCD * !SET_B * Q)	0.00450	0.00511	0.02848
	(!CLK * !D * SCD * !SET_B * Q)	0.01145	0.01207	0.03544
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00010	0.00096	0.01662
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00504	0.00592	0.02158

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00027	0.00055	0.01645
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00503	0.00585	0.02174
	(CLK * D * !SCD)	0.00368	0.00427	0.02037
	(CLK * D * !SCD)	0.00749	0.00809	0.02403
	(CLK * !D * SCD)	0.00104	0.00175	0.02635
	(CLK * !D * SCD)	0.00763	0.00836	0.03295
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00025	0.00055	0.01645
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00501	0.00586	0.02174
	(!CLK * D * !SCD * SET_B)	0.01123	0.01193	0.02765
	(!CLK * D * !SCD * SET_B)	0.01466	0.01535	0.03092
	(!CLK * D * !SCD * !SET_B * Q)	0.00919	0.00989	0.02562
	(!CLK * D * !SCD * !SET_B * Q)	0.01253	0.01321	0.02881
	(!CLK * !D * SCD * SET_B)	0.00830	0.00892	0.03261
	(!CLK * !D * SCD * SET_B)	0.01529	0.01592	0.03959
	(!CLK * !D * SCD * !SET_B * Q)	0.00551	0.00611	0.02925
	(!CLK * !D * SCD * !SET_B * Q)	0.01259	0.01321	0.03634
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00009	0.00093	0.01660
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00504	0.00591	0.02158

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00029	0.00050	0.01642
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00501	0.00587	0.02176
	(CLK * D * !SCD)	0.00378	0.00437	0.02044
	(CLK * D * !SCD)	0.00763	0.00823	0.02415
	(CLK * !D * SCD)	0.00112	0.00182	0.02637
	(CLK * !D * SCD)	0.00777	0.00849	0.03302
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00029	0.00051	0.01642
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00502	0.00587	0.02176
	(!CLK * D * !SCD * SET_B)	0.01110	0.01180	0.02752
	(!CLK * D * !SCD * SET_B)	0.01465	0.01534	0.03092
	(!CLK * D * !SCD * !SET_B * Q)	0.00910	0.00979	0.02553
	(!CLK * D * !SCD * !SET_B * Q)	0.01256	0.01324	0.02884
	(!CLK * !D * SCD * SET_B)	0.00836	0.00898	0.03268
	(!CLK * !D * SCD * SET_B)	0.01533	0.01595	0.03964
	(!CLK * !D * SCD * !SET_B * Q)	0.00561	0.00621	0.02934
	(!CLK * !D * SCD * !SET_B * Q)	0.01266	0.01328	0.03640
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00006	0.00090	0.01658
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00506	0.00592	0.02160

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00224	0.00225	0.00224
	(CLK * Q)	-0.00211	-0.00211	-0.00211
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00243	0.00245	0.00244
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00191	-0.00192	-0.00191
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00459	0.00466	0.01127
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00009	0.00013	0.00676
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00249	0.00251	0.00249
	(CLK * Q)	-0.00205	-0.00207	-0.00205
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00271	0.00271	0.00272
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00183	-0.00182	-0.00183
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00483	0.00489	0.01148
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00012	0.00016	0.00677

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00231	0.00233	0.00231
	(CLK * Q)	-0.00215	-0.00216	-0.00215
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00254	0.00256	0.00254
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00192	-0.00194	-0.00193
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00470	0.00477	0.01133
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00008	0.00011	0.00670

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00220	-0.00224	-0.00223
	(CLK * Q)	0.00216	0.00214	0.00213
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00240	-0.00244	-0.00243
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00197	0.00195	0.00193
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00007	0.00022	0.00693
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00442	0.00475	0.01145

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00245	-0.00249	-0.00248
	(CLK * Q)	0.00211	0.00209	0.00207
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00268	-0.00271	-0.00271
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00188	0.00186	0.00184
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00013	0.00022	0.00687
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00456	0.00495	0.01158
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00227	-0.00231	-0.00230
	(CLK * Q)	0.00221	0.00219	0.00218
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00249	-0.00254	-0.00252
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00199	0.00197	0.00195
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00005	0.00028	0.00691
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00457	0.00492	0.01155

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)**	0.01335	0.01351	0.03546
	(D * SCD * SCE * Q)	0.00930	0.00945	0.03140
	(D * !SCE * Q)	0.01335	0.01350	0.03546
	(D * !SCE * Q)	0.00929	0.00945	0.03141
	(D * !SCD * SCE * SET_B * !Q)	0.01313	0.01327	0.03523
	(D * !SCD * SCE * SET_B * !Q)	0.00908	0.00921	0.03117
	(D * !SCD * SCE * !SET_B * Q)	0.02402	0.02438	0.04696
	(D * !SCD * SCE * !SET_B * Q)	0.01962	0.01997	0.04256
	(!D * SCD * SCE * Q)	0.01335	0.01351	0.03546
	(!D * SCD * SCE * Q)	0.00929	0.00945	0.03141
	(!D * !SCE * SET_B * !Q)	0.01313	0.01327	0.03522
	(!D * !SCE * SET_B * !Q)	0.00908	0.00921	0.03117
	(!D * !SCE * !SET_B * Q)	0.02402	0.02438	0.04696
	(!D * !SCE * !SET_B * Q)	0.01962	0.01997	0.04255
	(!D * !SCD * SCE * SET_B * !Q)	0.01314	0.01328	0.03523
	(!D * !SCD * SCE * SET_B * !Q)	0.00908	0.00921	0.03117
	(!D * !SCD * SCE * !SET_B * Q)	0.02407	0.02439	0.04694
	(!D * !SCD * SCE * !SET_B * Q)	0.01967	0.01998	0.04254

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01538	0.01545	0.03695
	(D * SCD * SCE * Q)	0.01137	0.01143	0.03294
	(D * !SCE * Q)	0.01538	0.01545	0.03695
	(D * !SCE * Q)	0.01136	0.01143	0.03294
	(D * !SCD * SCE * SET_B * !Q)	0.01557	0.01562	0.03713
	(D * !SCD * SCE * SET_B * !Q)	0.01154	0.01158	0.03310
	(D * !SCD * SCE * !SET_B * Q)	0.03547	0.03591	0.05907
	(D * !SCD * SCE * !SET_B * Q)	0.03103	0.03147	0.05463
	(!D * SCD * SCE * Q)	0.01538	0.01545	0.03695
	(!D * SCD * SCE * Q)	0.01136	0.01143	0.03294
	(!D * !SCE * SET_B * !Q)	0.01557	0.01562	0.03712
	(!D * !SCE * SET_B * !Q)	0.01154	0.01158	0.03309
	(!D * !SCE * !SET_B * Q)	0.03545	0.03590	0.05906
	(!D * !SCE * !SET_B * Q)	0.03100	0.03144	0.05461
	(!D * !SCD * SCE * SET_B * !Q)	0.01558	0.01563	0.03713
	(!D * !SCD * SCE * SET_B * !Q)	0.01154	0.01158	0.03310
	(!D * !SCD * SCE * !SET_B * Q)	0.03554	0.03593	0.05903
	(!D * !SCD * SCE * !SET_B * Q)	0.03110	0.03147	0.05458

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01519	0.01528	0.03681
	(D * SCD * SCE * Q)	0.01117	0.01125	0.03280
	(D * !SCE * Q)	0.01519	0.01528	0.03681
	(D * !SCE * Q)	0.01116	0.01125	0.03280
	(D * !SCD * SCE * SET_B * !Q)	0.01544	0.01551	0.03707
	(D * !SCD * SCE * SET_B * !Q)	0.01140	0.01146	0.03304
	(D * !SCD * SCE * !SET_B * Q)	0.03514	0.03564	0.05883
	(D * !SCD * SCE * !SET_B * Q)	0.03076	0.03126	0.05446
	(!D * SCD * SCE * Q)	0.01519	0.01528	0.03681
	(!D * SCD * SCE * Q)	0.01117	0.01125	0.03280
	(!D * !SCE * SET_B * !Q)	0.01544	0.01551	0.03707
	(!D * !SCE * SET_B * !Q)	0.01140	0.01146	0.03303
	(!D * !SCE * !SET_B * Q)	0.03513	0.03568	0.05882
	(!D * !SCE * !SET_B * Q)	0.03074	0.03129	0.05444
	(!D * !SCD * SCE * SET_B * !Q)	0.01544	0.01551	0.03707
	(!D * !SCD * SCE * SET_B * !Q)	0.01140	0.01146	0.03304
	(!D * !SCD * SCE * !SET_B * Q)	0.03523	0.03567	0.05881
	(!D * !SCD * SCE * !SET_B * Q)	0.03084	0.03128	0.05444

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)**	0.01336	0.01409	0.03722
	(D * SCD * SCE * SET_B * !Q)	0.01717	0.01790	0.04102
	(D * SCD * SCE * Q)	0.00740	0.00822	0.03092
	(D * SCD * SCE * Q)	0.01145	0.01228	0.03497
	(D * !SCE * SET_B * !Q)	0.01332	0.01406	0.03719
	(D * !SCE * SET_B * !Q)	0.01714	0.01787	0.04100
	(D * !SCE * Q)	0.00739	0.00822	0.03092
	(D * !SCE * Q)	0.01145	0.01228	0.03497
	(D * !SCD * SCE * SET_B * Q)	0.01514	0.01614	0.03923
	(D * !SCD * SCE * SET_B * Q)	0.01947	0.02046	0.04357
	(D * !SCD * SCE * SET_B * !Q)	0.00762	0.00844	0.03120
	(D * !SCD * SCE * SET_B * !Q)	0.01168	0.01250	0.03526
	(D * !SCD * SCE * !SET_B * Q)	0.01240	0.01329	0.03651
	(D * !SCD * SCE * !SET_B * Q)	0.01678	0.01771	0.04092
	(!D * SCD * SCE * SET_B * !Q)	0.01339	0.01412	0.03726
	(!D * SCD * SCE * SET_B * !Q)	0.01719	0.01792	0.04105
	(!D * SCD * SCE * Q)	0.00740	0.00822	0.03092
	(!D * SCD * SCE * Q)	0.01145	0.01228	0.03497
	(!D * !SCE * SET_B * Q)	0.01512	0.01611	0.03920
	(!D * !SCE * SET_B * Q)	0.01944	0.02041	0.04352
	(!D * !SCE * SET_B * !Q)	0.00762	0.00844	0.03120
	(!D * !SCE * SET_B * !Q)	0.01168	0.01250	0.03526
	(!D * !SCE * !SET_B * Q)	0.01243	0.01329	0.03651
	(!D * !SCE * !SET_B * Q)	0.01684	0.01771	0.04092
	(!D * !SCD * SCE * SET_B * Q)	0.01513	0.01614	0.03925
	(!D * !SCD * SCE * SET_B * Q)	0.01946	0.02045	0.04359
	(!D * !SCD * SCE * SET_B * !Q)	0.00763	0.00844	0.03120
	(!D * !SCD * SCE * SET_B * !Q)	0.01168	0.01250	0.03526
	(!D * !SCD * SCE * !SET_B * Q)	0.01244	0.01343	0.03655
	(!D * !SCD * SCE * !SET_B * Q)	0.01684	0.01784	0.04096

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01577	0.01648	0.03925
	(D * SCD * SCE * SET_B * !Q)	0.01941	0.02010	0.04289
	(D * SCD * SCE * Q)	0.00859	0.00931	0.03167
	(D * SCD * SCE * Q)	0.01261	0.01334	0.03569
	(D * !SCE * SET_B * !Q)	0.01573	0.01645	0.03922
	(D * !SCE * SET_B * !Q)	0.01938	0.02007	0.04287
	(D * !SCE * Q)	0.00859	0.00931	0.03167
	(D * !SCE * Q)	0.01261	0.01334	0.03569
	(D * !SCD * SCE * SET_B * Q)	0.01784	0.01866	0.04155
	(D * !SCD * SCE * SET_B * Q)	0.02222	0.02302	0.04593
	(D * !SCD * SCE * SET_B * !Q)	0.00840	0.00918	0.03163
	(D * !SCD * SCE * SET_B * !Q)	0.01244	0.01319	0.03565
	(D * !SCD * SCE * !SET_B * Q)	0.01493	0.01575	0.03866
	(D * !SCD * SCE * !SET_B * Q)	0.01938	0.02021	0.04313
	(!D * SCD * SCE * SET_B * !Q)	0.01580	0.01651	0.03928
	(!D * SCD * SCE * SET_B * !Q)	0.01943	0.02012	0.04292
	(!D * SCD * SCE * Q)	0.00859	0.00931	0.03167
	(!D * SCD * SCE * Q)	0.01261	0.01334	0.03569
	(!D * !SCE * SET_B * Q)	0.01782	0.01864	0.04153
	(!D * !SCE * SET_B * Q)	0.02218	0.02298	0.04588
	(!D * !SCE * SET_B * !Q)	0.00840	0.00917	0.03162
	(!D * !SCE * SET_B * !Q)	0.01244	0.01319	0.03565
	(!D * !SCE * !SET_B * Q)	0.01492	0.01574	0.03865
	(!D * !SCE * !SET_B * Q)	0.01938	0.02019	0.04310
	(!D * !SCD * SCE * SET_B * Q)	0.01784	0.01868	0.04158
	(!D * !SCD * SCE * SET_B * Q)	0.02221	0.02303	0.04594
	(!D * !SCD * SCE * SET_B * !Q)	0.00840	0.00918	0.03163
	(!D * !SCD * SCE * SET_B * !Q)	0.01244	0.01319	0.03565
	(!D * !SCD * SCE * !SET_B * Q)	0.01493	0.01578	0.03869
	(!D * !SCD * SCE * !SET_B * Q)	0.01938	0.02022	0.04314

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01536	0.01608	0.03887
	(D * SCD * SCE * SET_B * !Q)	0.01909	0.01980	0.04260
	(D * SCD * SCE * Q)	0.00841	0.00915	0.03153
	(D * SCD * SCE * Q)	0.01244	0.01316	0.03556
	(D * !SCE * SET_B * !Q)	0.01533	0.01605	0.03884
	(D * !SCE * SET_B * !Q)	0.01906	0.01977	0.04258
	(D * !SCE * Q)	0.00841	0.00915	0.03153
	(D * !SCE * Q)	0.01244	0.01316	0.03556
	(D * !SCD * SCE * SET_B * Q)	0.01749	0.01832	0.04125
	(D * !SCD * SCE * SET_B * Q)	0.02181	0.02262	0.04557
	(D * !SCD * SCE * SET_B * !Q)	0.00817	0.00895	0.03143
	(D * !SCD * SCE * SET_B * !Q)	0.01221	0.01297	0.03546
	(D * !SCD * SCE * !SET_B * Q)	0.01459	0.01546	0.03835
	(D * !SCD * SCE * !SET_B * Q)	0.01898	0.01985	0.04275
	(!D * SCD * SCE * SET_B * !Q)	0.01539	0.01612	0.03891
	(!D * SCD * SCE * SET_B * !Q)	0.01911	0.01982	0.04263
	(!D * SCD * SCE * Q)	0.00841	0.00915	0.03154
	(!D * SCD * SCE * Q)	0.01244	0.01316	0.03556
	(!D * !SCE * SET_B * Q)	0.01747	0.01829	0.04123
	(!D * !SCE * SET_B * Q)	0.02177	0.02257	0.04553
	(!D * !SCE * SET_B * !Q)	0.00817	0.00895	0.03143
	(!D * !SCE * SET_B * !Q)	0.01221	0.01297	0.03546
	(!D * !SCE * !SET_B * Q)	0.01459	0.01543	0.03834
	(!D * !SCE * !SET_B * Q)	0.01899	0.01982	0.04274
	(!D * !SCD * SCE * SET_B * Q)	0.01749	0.01833	0.04126
	(!D * !SCD * SCE * SET_B * Q)	0.02180	0.02263	0.04557
	(!D * !SCD * SCE * SET_B * !Q)	0.00817	0.00895	0.03143
	(!D * !SCD * SCE * SET_B * !Q)	0.01221	0.01298	0.03546
	(!D * !SCD * SCE * !SET_B * Q)	0.01460	0.01546	0.03844
	(!D * !SCD * SCE * !SET_B * Q)	0.01899	0.01986	0.04284

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00189	0.00190	0.00405	0.00294	1.08040	1.04672
sky130_fd_sc_hs__sdfxbp_2	0.00187	0.00187	0.00410	0.00293	2.11511	2.10450

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	0.80753	1.17625
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.78876	1.14097

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)	0.21915	0.73544	6.32338
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.21247	0.62848	6.28143

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.23494	0.50775	2.31682
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.25129	0.49773	2.29715

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)	0.27879	0.80067	6.41597
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.32305	0.73083	6.39618

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)	0.25527	0.50760	2.24820
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.27329	0.49484	2.37560

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)	-0.06234	-0.14266	-0.79495
	setup	CLK (R)	0.13820	0.18982	0.90515
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06321	-0.14344	-0.80089
	setup	CLK (R)	0.13853	0.19068	0.90692

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)	-0.08703	-0.22004	-2.38388
	setup	CLK (R)	0.21897	0.33286	2.88241
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08642	-0.22047	-2.40776
	setup	CLK (R)	0.22230	0.33519	2.89585

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)	-0.06234	-0.14266	-0.79495
	setup	CLK (R)	0.13820	0.18982	0.90515
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06321	-0.14344	-0.80089
	setup	CLK (R)	0.13853	0.19068	0.90692

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)	-0.08703	-0.22004	-2.38388
	setup	CLK (R)	0.21897	0.33286	2.88241
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08642	-0.22047	-2.40776
	setup	CLK (R)	0.22230	0.33519	2.89585

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)	-0.08062	-0.15498	-0.84253
	setup	CLK (R)	0.16381	0.20799	0.95218
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08076	-0.15475	-0.83825
	setup	CLK (R)	0.16224	0.20574	0.94119

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)	-0.12451	-0.26277	-2.81959
	setup	CLK (R)	0.28287	0.39100	3.08887
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11887	-0.25796	-2.85581
	setup	CLK (R)	0.28542	0.39492	3.10894

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)	-0.08062	-0.15498	-0.84253
	hold	CLK (R)	-0.08706	-0.16049	-0.84584
	setup	CLK (R)	0.15994	0.20291	0.94774
	setup	CLK (R)	0.16381	0.20799	0.95218
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08076	-0.15475	-0.83825
	hold	CLK (R)	-0.08529	-0.16206	-0.84185
	setup	CLK (R)	0.15879	0.20098	0.93545
	setup	CLK (R)	0.16224	0.20574	0.94119

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)	-0.13450	-0.27659	-2.84077
	hold	CLK (R)	-0.12451	-0.26277	-2.81959
	setup	CLK (R)	0.28287	0.39100	3.08887
	setup	CLK (R)	0.27934	0.38704	3.08841
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13219	-0.27534	-2.87645
	hold	CLK (R)	-0.11887	-0.25796	-2.85581
	setup	CLK (R)	0.28542	0.39492	3.10862
	setup	CLK (R)	0.27871	0.39081	3.10894

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)	-0.07437	-0.15584	-0.34226
	setup	CLK (R)	0.27643	0.28746	0.97259
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.07171	-0.15708	-0.35383
	setup	CLK (R)	0.28108	0.29363	0.95663

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)	-0.10924	-0.23156	-2.33228
	setup	CLK (R)	0.23800	0.34060	2.89672
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10833	-0.22923	-2.41472
	setup	CLK (R)	0.24395	0.34836	2.92213

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)	-0.12707	-0.17421	-0.34226
	hold	CLK (R)	-0.07437	-0.15584	-0.83540
	setup	CLK (R)	0.27643	0.28746	0.47029
	setup	CLK (R)	0.15055	0.20536	0.97259
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12615	-0.17641	-0.35383
	hold	CLK (R)	-0.07171	-0.15708	-0.83467
	setup	CLK (R)	0.28108	0.29363	0.48809
	setup	CLK (R)	0.14963	0.20437	0.95663

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)	-0.12921	-0.26409	-2.51405
	hold	CLK (R)	-0.10924	-0.23156	-2.33228
	setup	CLK (R)	0.20562	0.30182	2.56811
	setup	CLK (R)	0.23800	0.34060	2.89672
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13252	-0.26657	-2.52637
	hold	CLK (R)	-0.10833	-0.22923	-2.41472
	setup	CLK (R)	0.20570	0.30807	2.57796
	setup	CLK (R)	0.24395	0.34836	2.92213

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 ()	0.10404	0.67627	16.50020
	min_pulse_width	CLK ()	0.07872	0.67627	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.10404	0.67627	16.50020
	min_pulse_width	CLK ()	0.08125	0.67627	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 ()	0.18506	0.67627	16.50020
	min_pulse_width	CLK ()	0.23064	0.67627	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.18759	0.67627	16.50020
	min_pulse_width	CLK ()	0.23570	0.67627	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	0.01358	0.01394	0.02589
	CLK	0.01154	0.01185	0.02385
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01634	0.01714	0.02931
	CLK	0.01432	0.01501	0.02721

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01394	0.01444	0.02621
	CLK	0.01191	0.01237	0.02416
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01664	0.01742	0.02946
	CLK	0.01462	0.01539	0.02742

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01396	0.01453	0.02653
	CLK	0.01192	0.01239	0.02452
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01666	0.01745	0.02983
	CLK	0.01463	0.01539	0.02781

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01356	0.01386	0.02570
	CLK	0.01153	0.01183	0.02367
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01632	0.01711	0.02887
	CLK	0.01430	0.01499	0.02680

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00121	0.00123	0.00121
	(CLK * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(CLK * !SCE)	0.00397	0.00418	0.01696
	(CLK * !SCE)	0.00093	0.00113	0.01392
	(CLK * !SCD * SCE)	0.00070	0.00070	0.00068
	(CLK * !SCD * SCE)	-0.00119	-0.00120	-0.00122
	(!CLK * SCD * SCE)	0.00120	0.00121	0.00120
	(!CLK * SCD * SCE)	-0.00055	-0.00055	-0.00055
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00924	0.00944	0.02231
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00620	0.00639	0.01926
	(!CLK * !SCD * SCE)	0.00070	0.00070	0.00068
	(!CLK * !SCD * SCE)	-0.00119	-0.00120	-0.00122
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00122	0.00123	0.00122
	(CLK * SCD * SCE)	-0.00054	-0.00054	-0.00053
	(CLK * !SCE)	0.00389	0.00410	0.01687
	(CLK * !SCE)	0.00088	0.00108	0.01386
	(CLK * !SCD * SCE)	0.00072	0.00072	0.00071
	(CLK * !SCD * SCE)	-0.00116	-0.00118	-0.00120
	(!CLK * SCD * SCE)	0.00121	0.00122	0.00122
	(!CLK * SCD * SCE)	-0.00053	-0.00054	-0.00053
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00929	0.00949	0.02233
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00628	0.00647	0.01931
	(!CLK * !SCD * SCE)	0.00073	0.00072	0.00071
	(!CLK * !SCD * SCE)	-0.00117	-0.00117	-0.00119

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00115	-0.00116	-0.00119
	(CLK * SCD * SCE)	0.00060	0.00059	0.00057
	(CLK * !SCE)	0.00085	0.00137	0.01429
	(CLK * !SCE)	0.00390	0.00442	0.01733
	(CLK * !SCD * SCE)	-0.00065	-0.00066	-0.00066
	(CLK * !SCD * SCE)	0.00122	0.00123	0.00123
	(!CLK * SCD * SCE)	-0.00115	-0.00116	-0.00119
	(!CLK * SCD * SCE)	0.00059	0.00059	0.00057
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00678	0.00726	0.02147
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00982	0.01031	0.02451
	(!CLK * !SCD * SCE)	-0.00065	-0.00067	-0.00066
	(!CLK * !SCD * SCE)	0.00122	0.00124	0.00123
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00116	-0.00118	-0.00120
	(CLK * SCD * SCE)	0.00058	0.00058	0.00056
	(CLK * !SCE)	0.00096	0.00148	0.01439
	(CLK * !SCE)	0.00398	0.00450	0.01740
	(CLK * !SCD * SCE)	-0.00068	-0.00068	-0.00068
	(CLK * !SCD * SCE)	0.00120	0.00120	0.00120
	(!CLK * SCD * SCE)	-0.00116	-0.00118	-0.00121
	(!CLK * SCD * SCE)	0.00058	0.00058	0.00055
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00679	0.00728	0.02146
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00980	0.01029	0.02448
	(!CLK * !SCD * SCE)	-0.00068	-0.00069	-0.00068
	(!CLK * !SCD * SCE)	0.00120	0.00122	0.00120

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00555	0.00552	0.01376
	(CLK * D * SCE)	0.00164	0.00160	0.00986
	(CLK * !D * SCE)	0.00629	0.00625	0.01420
	(CLK * !D * SCE)	0.00223	0.00217	0.01014
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01080	0.01080	0.01943
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00689	0.00688	0.01552
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01154	0.01153	0.02004
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00748	0.00746	0.01599
	!SCE	0.00115	0.00101	0.00099
	!SCE	-0.00102	-0.00117	-0.00118
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00544	0.00542	0.01368
	(CLK * D * SCE)	0.00158	0.00156	0.00983
	(CLK * !D * SCE)	0.00618	0.00615	0.01412
	(CLK * !D * SCE)	0.00218	0.00213	0.01011
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01082	0.01084	0.01947
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00697	0.00697	0.01561
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01157	0.01157	0.02004
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00756	0.00755	0.01603
	!SCE	0.00112	0.00097	0.00095
	!SCE	-0.00102	-0.00118	-0.00119

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00199	0.00195	0.01016
	(CLK * D * SCE)	0.00591	0.00587	0.01405
	(CLK * !D * SCE)	0.00160	0.00157	0.00997
	(CLK * !D * SCE)	0.00566	0.00564	0.01401
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00793	0.00793	0.01735
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01184	0.01184	0.02125
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00760	0.00761	0.01736
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01166	0.01168	0.02141
	!SCE	-0.00094	-0.00097	-0.00097
	!SCE	0.00120	0.00121	0.00121
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00208	0.00205	0.01028
	(CLK * D * SCE)	0.00595	0.00592	0.01412
	(CLK * !D * SCE)	0.00169	0.00168	0.01008
	(CLK * !D * SCE)	0.00570	0.00569	0.01408
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00792	0.00794	0.01736
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01178	0.01180	0.02120
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00759	0.00764	0.01736
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01159	0.01165	0.02136
	!SCE	-0.00091	-0.00093	-0.00094
	!SCE	0.00121	0.00122	0.00122

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)**	0.00512	0.00532	0.02118
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00039	-0.00021	0.01566
	(CLK * D * !SCD)	0.00757	0.00776	0.02402
	(CLK * D * !SCD)	0.00364	0.00380	0.02003
	(CLK * !D * SCD)	0.00898	0.00942	0.03443
	(CLK * !D * SCD)	0.00209	0.00251	0.02755
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00511	0.00531	0.02118
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00039	-0.00021	0.01566
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01334	0.01365	0.02997
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00941	0.00969	0.02599
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01424	0.01473	0.04034
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00735	0.00783	0.03346
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00493	0.00528	0.02102
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00025	0.00008	0.01583

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00532	0.00548	0.02132
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00031	-0.00016	0.01568
	(CLK * D * !SCD)	0.00786	0.00803	0.02424
	(CLK * D * !SCD)	0.00378	0.00391	0.02012
	(CLK * !D * SCD)	0.00913	0.00953	0.03451
	(CLK * !D * SCD)	0.00215	0.00254	0.02754
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00532	0.00549	0.02132
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00031	-0.00017	0.01568
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01353	0.01382	0.03011
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00945	0.00972	0.02598
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01451	0.01498	0.04053
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00753	0.00798	0.03356
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00511	0.00543	0.02114
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00018	0.00012	0.01584

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)**	-0.00045	0.00035	0.01639
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00506	0.00587	0.02190
	(CLK * D * !SCD)	0.00363	0.00421	0.02040
	(CLK * D * !SCD)	0.00759	0.00819	0.02423
	(CLK * !D * SCD)	0.00115	0.00183	0.02669
	(CLK * !D * SCD)	0.00804	0.00873	0.03359
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00045	0.00033	0.01639
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00506	0.00587	0.02190
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00885	0.00951	0.02552
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01281	0.01348	0.02935
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00707	0.00773	0.03332
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01394	0.01462	0.04019
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00001	0.00076	0.01666
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00520	0.00596	0.02185

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00049	0.00029	0.01630
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00514	0.00593	0.02193
	(CLK * D * !SCD)	0.00353	0.00409	0.02026
	(CLK * D * !SCD)	0.00764	0.00821	0.02423
	(CLK * !D * SCD)	0.00125	0.00188	0.02671
	(CLK * !D * SCD)	0.00820	0.00887	0.03369
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00049	0.00028	0.01630
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00514	0.00592	0.02193
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00888	0.00953	0.02551
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01299	0.01365	0.02949
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00705	0.00770	0.03322
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01402	0.01466	0.04021
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00001	0.00073	0.01659
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00530	0.00604	0.02190

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)	0.01252	0.01275	0.03519
	(D * SCD * SCE * Q * !Q_N)	0.00845	0.00867	0.03112
	(D * !SCE * Q * !Q_N)	0.01250	0.01275	0.03518
	(D * !SCE * Q * !Q_N)	0.00843	0.00867	0.03111
	(D * !SCD * SCE * !Q * Q_N)	0.01234	0.01252	0.03512
	(D * !SCD * SCE * !Q * Q_N)	0.00827	0.00844	0.03105
	(!D * SCD * SCE * Q * !Q_N)	0.01252	0.01275	0.03519
	(!D * SCD * SCE * Q * !Q_N)	0.00845	0.00868	0.03112
	(!D * !SCE * !Q * Q_N)	0.01234	0.01256	0.03513
	(!D * !SCE * !Q * Q_N)	0.00827	0.00848	0.03105
	(!D * !SCD * SCE * !Q * Q_N)	0.01234	0.01252	0.03501
	(!D * !SCD * SCE * !Q * Q_N)	0.00827	0.00844	0.03094
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01279	0.01303	0.03545
	(D * SCD * SCE * Q * !Q_N)	0.00872	0.00895	0.03139
	(D * !SCE * Q * !Q_N)	0.01277	0.01303	0.03545
	(D * !SCE * Q * !Q_N)	0.00871	0.00894	0.03138
	(D * !SCD * SCE * !Q * Q_N)	0.01263	0.01279	0.03540
	(D * !SCD * SCE * !Q * Q_N)	0.00856	0.00871	0.03134
	(!D * SCD * SCE * Q * !Q_N)	0.01279	0.01303	0.03546
	(!D * SCD * SCE * Q * !Q_N)	0.00872	0.00895	0.03139
	(!D * !SCE * !Q * Q_N)	0.01262	0.01285	0.03531
	(!D * !SCE * !Q * Q_N)	0.00856	0.00879	0.03125
	(!D * !SCD * SCE * !Q * Q_N)	0.01263	0.01280	0.03531
	(!D * !SCD * SCE * !Q * Q_N)	0.00856	0.00872	0.03125

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)**	0.00706	0.00776	0.03077
	(D * SCD * SCE * Q * !Q_N)	0.01114	0.01184	0.03484
	(D * SCD * SCE * !Q * Q_N)	0.01206	0.01265	0.03620
	(D * SCD * SCE * !Q * Q_N)	0.01613	0.01672	0.04027
	(D * !SCE * Q * !Q_N)	0.00706	0.00776	0.03076
	(D * !SCE * Q * !Q_N)	0.01114	0.01184	0.03483
	(D * !SCE * !Q * Q_N)	0.01202	0.01262	0.03632
	(D * !SCE * !Q * Q_N)	0.01609	0.01669	0.04040
	(D * !SCD * SCE * Q * !Q_N)	0.01410	0.01484	0.03852
	(D * !SCD * SCE * Q * !Q_N)	0.01819	0.01893	0.04261
	(D * !SCD * SCE * !Q * Q_N)	0.00712	0.00782	0.03091
	(D * !SCD * SCE * !Q * Q_N)	0.01119	0.01189	0.03497
	(!D * SCD * SCE * Q * !Q_N)	0.00706	0.00776	0.03077
	(!D * SCD * SCE * Q * !Q_N)	0.01114	0.01184	0.03484
	(!D * SCD * SCE * !Q * Q_N)	0.01209	0.01268	0.03624
	(!D * SCD * SCE * !Q * Q_N)	0.01615	0.01673	0.04030
	(!D * !SCE * Q * !Q_N)	0.01407	0.01479	0.03838
	(!D * !SCE * Q * !Q_N)	0.01814	0.01886	0.04245
	(!D * !SCE * !Q * Q_N)	0.00711	0.00782	0.03088
	(!D * !SCE * !Q * Q_N)	0.01118	0.01188	0.03495
	(!D * !SCD * SCE * Q * !Q_N)	0.01410	0.01485	0.03850
	(!D * !SCD * SCE * Q * !Q_N)	0.01818	0.01894	0.04258
	(!D * !SCD * SCE * !Q * Q_N)	0.00712	0.00782	0.03090
	(!D * !SCD * SCE * !Q * Q_N)	0.01119	0.01189	0.03497

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00715	0.00788	0.03087
	(D * SCD * SCE * Q * !Q_N)	0.01123	0.01193	0.03494
	(D * SCD * SCE * !Q * Q_N)	0.01226	0.01287	0.03647
	(D * SCD * SCE * !Q * Q_N)	0.01633	0.01693	0.04054
	(D * !SCE * Q * !Q_N)	0.00715	0.00788	0.03087
	(D * !SCE * Q * !Q_N)	0.01122	0.01193	0.03494
	(D * !SCE * !Q * Q_N)	0.01222	0.01284	0.03653
	(D * !SCE * !Q * Q_N)	0.01630	0.01690	0.04061
	(D * !SCD * SCE * Q * !Q_N)	0.01409	0.01487	0.03848
	(D * !SCD * SCE * Q * !Q_N)	0.01818	0.01895	0.04257
	(D * !SCD * SCE * !Q * Q_N)	0.00719	0.00791	0.03098
	(D * !SCD * SCE * !Q * Q_N)	0.01126	0.01197	0.03505
	(!D * SCD * SCE * Q * !Q_N)	0.00715	0.00788	0.03088
	(!D * SCD * SCE * Q * !Q_N)	0.01123	0.01193	0.03494
	(!D * SCD * SCE * !Q * Q_N)	0.01229	0.01291	0.03651
	(!D * SCD * SCE * !Q * Q_N)	0.01635	0.01695	0.04056
	(!D * !SCE * Q * !Q_N)	0.01405	0.01478	0.03838
	(!D * !SCE * Q * !Q_N)	0.01812	0.01885	0.04243
	(!D * !SCE * !Q * Q_N)	0.00718	0.00790	0.03096
	(!D * !SCE * !Q * Q_N)	0.01125	0.01196	0.03503
	(!D * !SCD * SCE * Q * !Q_N)	0.01409	0.01486	0.03847
	(!D * !SCD * SCE * Q * !Q_N)	0.01817	0.01894	0.04255
	(!D * !SCD * SCE * !Q * Q_N)	0.00719	0.00791	0.03098
	(!D * !SCD * SCE * !Q * Q_N)	0.01126	0.01197	0.03505

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00190	0.00200	0.00419	0.00291	1.06532
sky130_fd_sc_hs__sdfxtp_2	0.00193	0.00196	0.00406	0.00294	2.09023
sky130_fd_sc_hs__sdfxtp_4	0.00191	0.00194	0.00418	0.00292	3.98570

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.70644	1.17892
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.65813	1.02677
sky130_fd_sc_hs__sdfxtp_4	0.00000	0.94288	1.49052

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)**	0.20217	0.71842	6.27554
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.20556	0.62277	6.26896
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.24553	0.59047	6.42640

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.22337	0.48615	2.25004
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.23205	0.46718	2.26552
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.23344	0.43722	2.30725

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)	-0.06419	-0.14489	-0.80359
	setup	CLK (R)	0.14001	0.19133	0.90872
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06558	-0.14958	-0.81204
	setup	CLK (R)	0.14880	0.19627	0.92263
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06548	-0.14266	-0.79609
	setup	CLK (R)	0.13528	0.18880	0.91421

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)	-0.08900	-0.22468	-2.43959
	setup	CLK (R)	0.22571	0.34054	2.89987
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09478	-0.23117	-2.37985
	setup	CLK (R)	0.23808	0.35113	2.93024
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09402	-0.22633	-2.29728
	setup	CLK (R)	0.22653	0.33790	2.89118

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)	-0.06419	-0.14489	-0.80359
	setup	CLK (R)	0.14001	0.19133	0.90872
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06558	-0.14958	-0.81204
	setup	CLK (R)	0.14880	0.19627	0.92263
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06548	-0.14266	-0.79609
	setup	CLK (R)	0.13528	0.18880	0.91421

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)	-0.08900	-0.22468	-2.43959
	setup	CLK (R)	0.22571	0.34054	2.89987
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09478	-0.23117	-2.37985
	setup	CLK (R)	0.23808	0.35113	2.93024
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09402	-0.22633	-2.29728
	setup	CLK (R)	0.22653	0.33790	2.89118

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)	-0.08208	-0.15771	-0.85399
	setup	CLK (R)	0.16500	0.20999	0.96007
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08383	-0.16049	-0.85708
	setup	CLK (R)	0.17285	0.21599	0.96838
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08316	-0.15540	-0.84060
	setup	CLK (R)	0.16319	0.20799	0.96363

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)	-0.12741	-0.26424	-2.84549
	setup	CLK (R)	0.29090	0.39937	3.10676
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.12800	-0.26930	-2.84098
	setup	CLK (R)	0.30256	0.40637	3.12838
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13174	-0.26472	-2.80258
	setup	CLK (R)	0.29232	0.39692	3.09626

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)	-0.08208	-0.15771	-0.85399
	hold	CLK (R)	-0.08918	-0.16449	-0.85867
	setup	CLK (R)	0.16134	0.20530	0.95674
	setup	CLK (R)	0.16500	0.20999	0.96007
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08383	-0.16049	-0.85708
	hold	CLK (R)	-0.08992	-0.16539	-0.86300
	setup	CLK (R)	0.16994	0.21199	0.96590
	setup	CLK (R)	0.17285	0.21599	0.96838
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08316	-0.15540	-0.84060
	hold	CLK (R)	-0.08449	-0.16049	-0.84413
	setup	CLK (R)	0.16104	0.20222	0.95819
	setup	CLK (R)	0.16319	0.20799	0.96363

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)	-0.13883	-0.27902	-2.87450
	hold	CLK (R)	-0.12741	-0.26424	-2.84549
	setup	CLK (R)	0.29090	0.39937	3.10676
	setup	CLK (R)	0.28604	0.39696	3.10340
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13919	-0.28204	-2.87120
	hold	CLK (R)	-0.12800	-0.26930	-2.84098
	setup	CLK (R)	0.30256	0.40637	3.12772
	setup	CLK (R)	0.29854	0.40400	3.12838
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14243	-0.27956	-2.82832
	hold	CLK (R)	-0.13174	-0.26472	-2.80258
	setup	CLK (R)	0.29232	0.39692	3.09435
	setup	CLK (R)	0.28623	0.39273	3.09626

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)	-0.07313	-0.15849	-0.35812
	setup	CLK (R)	0.28547	0.29839	0.97577
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07664	-0.16049	-0.34134
	setup	CLK (R)	0.29808	0.30793	0.98860
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07325	-0.15637	-0.34728
	setup	CLK (R)	0.28533	0.29618	0.98550

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)	-0.10816	-0.23441	-2.37852
	setup	CLK (R)	0.24456	0.34924	2.91067
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11366	-0.23586	-2.31475
	setup	CLK (R)	0.25733	0.35828	2.94151
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11554	-0.23575	-2.23794
	setup	CLK (R)	0.24642	0.34791	2.90536

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)	-0.13112	-0.18003	-0.35812
	hold	CLK (R)	-0.07313	-0.15849	-0.84654
	setup	CLK (R)	0.28547	0.29839	0.48778
	setup	CLK (R)	0.15323	0.20799	0.97577
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13274	-0.18215	-0.34134
	hold	CLK (R)	-0.07664	-0.16049	-0.85145
	setup	CLK (R)	0.29808	0.30793	0.48646
	setup	CLK (R)	0.15902	0.21399	0.98860
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13648	-0.18018	-0.34728
	hold	CLK (R)	-0.07325	-0.15637	-0.83742
	setup	CLK (R)	0.28533	0.29618	0.48684
	setup	CLK (R)	0.14844	0.20488	0.98550

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)	-0.13310	-0.27019	-2.53375
	hold	CLK (R)	-0.10816	-0.23441	-2.37852
	setup	CLK (R)	0.20680	0.31033	2.58443
	setup	CLK (R)	0.24456	0.34924	2.91067
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13419	-0.27008	-2.52358
	hold	CLK (R)	-0.11366	-0.23586	-2.31475
	setup	CLK (R)	0.21467	0.31032	2.57726
	setup	CLK (R)	0.25733	0.35828	2.94151
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.13063	-0.27019	-2.52642
	hold	CLK (R)	-0.11554	-0.23575	-2.23794
	setup	CLK (R)	0.20366	0.30807	2.58453
	setup	CLK (R)	0.24642	0.34791	2.90536

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 ()	0.09644	0.67627	16.50020
	min_pulse_width	CLK ()	0.07872	0.67627	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.10150	0.67627	16.50020
	min_pulse_width	CLK ()	0.08125	0.67627	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.12936	0.67627	16.50020
	min_pulse_width	CLK ()	0.08378	0.67627	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 ()	0.18506	0.67627	16.50020
	min_pulse_width	CLK ()	0.23064	0.67627	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.19519	0.67627	16.50020
	min_pulse_width	CLK ()	0.24077	0.67627	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.18253	0.67627	16.50020
	min_pulse_width	CLK ()	0.23570	0.67627	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	0.02102	0.02148	0.04528
	CLK	0.01699	0.01746	0.04152
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02408	0.02487	0.04861
	CLK	0.02003	0.02083	0.04511
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03016	0.03127	0.05519
	CLK	0.02611	0.02725	0.05179

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.02207	0.02288	0.04691
	CLK	0.01804	0.01874	0.04275
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02498	0.02601	0.05004
	CLK	0.02093	0.02195	0.04553
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03123	0.03294	0.05763
	CLK	0.02718	0.02882	0.05271

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00124	0.00125	0.00124
	(CLK * SCD * SCE)	-0.00054	-0.00054	-0.00054
	(CLK * !SCE)	0.00399	0.00419	0.01693
	(CLK * !SCE)	0.00087	0.00106	0.01381
	(CLK * !SCD * SCE)	0.00072	0.00073	0.00071
	(CLK * !SCD * SCE)	-0.00119	-0.00120	-0.00122
	(!CLK * SCD * SCE)	0.00124	0.00124	0.00124
	(!CLK * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK * !SCE)	0.00944	0.00965	0.02247
	(!CLK * !SCE)	0.00632	0.00651	0.01934
	(!CLK * !SCD * SCE)	0.00073	0.00073	0.00071
	(!CLK * !SCD * SCE)	-0.00119	-0.00120	-0.00122
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00128	0.00128	0.00128
	(CLK * SCD * SCE)	-0.00055	-0.00054	-0.00054
	(CLK * !SCE)	0.00431	0.00449	0.01713
	(CLK * !SCE)	0.00113	0.00130	0.01395
	(CLK * !SCD * SCE)	0.00075	0.00075	0.00074
	(CLK * !SCD * SCE)	-0.00120	-0.00122	-0.00123
	(!CLK * SCD * SCE)	0.00127	0.00128	0.00128
	(!CLK * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK * !SCE)	0.01021	0.01042	0.02307
	(!CLK * !SCE)	0.00703	0.00723	0.01989
	(!CLK * !SCD * SCE)	0.00076	0.00075	0.00074
	(!CLK * !SCD * SCE)	-0.00120	-0.00121	-0.00123

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00126	0.00128	0.00126
	(CLK * SCD * SCE)	-0.00053	-0.00054	-0.00053
	(CLK * !SCE)	0.00400	0.00420	0.01696
	(CLK * !SCE)	0.00089	0.00108	0.01385
	(CLK * !SCD * SCE)	0.00075	0.00075	0.00074
	(CLK * !SCD * SCE)	-0.00118	-0.00119	-0.00121
	(!CLK * SCD * SCE)	0.00126	0.00127	0.00126
	(!CLK * SCD * SCE)	-0.00053	-0.00054	-0.00053
	(!CLK * !SCE)	0.00948	0.00967	0.02248
	(!CLK * !SCE)	0.00637	0.00655	0.01937
	(!CLK * !SCD * SCE)	0.00076	0.00076	0.00074
	(!CLK * !SCD * SCE)	-0.00118	-0.00119	-0.00121

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00118	-0.00120	-0.00123
	(CLK * SCD * SCE)	0.00059	0.00058	0.00056
	(CLK * !SCE)	0.00093	0.00144	0.01433
	(CLK * !SCE)	0.00406	0.00457	0.01746
	(CLK * !SCD * SCE)	-0.00069	-0.00069	-0.00069
	(CLK * !SCD * SCE)	0.00122	0.00122	0.00122
	(!CLK * SCD * SCE)	-0.00118	-0.00120	-0.00123
	(!CLK * SCD * SCE)	0.00059	0.00058	0.00056
	(!CLK * !SCE)	0.00660	0.00708	0.02131
	(!CLK * !SCE)	0.00973	0.01020	0.02444
	(!CLK * !SCD * SCE)	-0.00068	-0.00070	-0.00069
	(!CLK * !SCD * SCE)	0.00122	0.00124	0.00123

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00122	-0.00124	-0.00127
	(CLK * SCD * SCE)	0.00059	0.00059	0.00056
	(CLK * !SCE)	0.00099	0.00148	0.01430
	(CLK * !SCE)	0.00417	0.00466	0.01748
	(CLK * !SCD * SCE)	-0.00071	-0.00073	-0.00072
	(CLK * !SCD * SCE)	0.00123	0.00125	0.00124
	(!CLK * SCD * SCE)	-0.00123	-0.00124	-0.00127
	(!CLK * SCD * SCE)	0.00059	0.00058	0.00056
	(!CLK * !SCE)	0.00675	0.00721	0.02133
	(!CLK * !SCE)	0.00993	0.01039	0.02451
	(!CLK * !SCD * SCE)	-0.00071	-0.00073	-0.00071
	(!CLK * !SCD * SCE)	0.00123	0.00125	0.00124
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00120	-0.00122	-0.00125
	(CLK * SCD * SCE)	0.00058	0.00058	0.00056
	(CLK * !SCE)	0.00089	0.00141	0.01431
	(CLK * !SCE)	0.00401	0.00453	0.01743
	(CLK * !SCD * SCE)	-0.00071	-0.00071	-0.00071
	(CLK * !SCD * SCE)	0.00121	0.00121	0.00122
	(!CLK * SCD * SCE)	-0.00120	-0.00122	-0.00124
	(!CLK * SCD * SCE)	0.00059	0.00058	0.00056
	(!CLK * !SCE)	0.00695	0.00740	0.02157
	(!CLK * !SCE)	0.01006	0.01050	0.02469
	(!CLK * !SCD * SCE)	-0.00070	-0.00072	-0.00071
	(!CLK * !SCD * SCE)	0.00122	0.00124	0.00122

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00565	0.00561	0.01383
	(CLK * D * SCE)	0.00161	0.00156	0.00979
	(CLK * !D * SCE)	0.00640	0.00634	0.01427
	(CLK * !D * SCE)	0.00220	0.00213	0.01007
	(!CLK * D * SCE)	0.01109	0.01109	0.01968
	(!CLK * D * SCE)	0.00705	0.00703	0.01564
	(!CLK * !D * SCE)	0.01184	0.01184	0.02025
	(!CLK * !D * SCE)	0.00764	0.00763	0.01606
	!SCE	0.00117	0.00102	0.00101
	!SCE	-0.00108	-0.00123	-0.00125
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00581	0.00577	0.01395
	(CLK * D * SCE)	0.00180	0.00174	0.00994
	(CLK * !D * SCE)	0.00655	0.00649	0.01438
	(CLK * !D * SCE)	0.00239	0.00233	0.01023
	(!CLK * D * SCE)	0.01170	0.01168	0.02023
	(!CLK * D * SCE)	0.00768	0.00767	0.01622
	(!CLK * !D * SCE)	0.01244	0.01242	0.02077
	(!CLK * !D * SCE)	0.00828	0.00825	0.01661
	!SCE	0.00118	0.00104	0.00102
	!SCE	-0.00101	-0.00117	-0.00118
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00561	0.00558	0.01382
	(CLK * D * SCE)	0.00165	0.00161	0.00986
	(CLK * !D * SCE)	0.00636	0.00631	0.01425
	(CLK * !D * SCE)	0.00224	0.00218	0.01014
	(!CLK * D * SCE)	0.01108	0.01107	0.01967
	(!CLK * D * SCE)	0.00712	0.00710	0.01571
	(!CLK * !D * SCE)	0.01183	0.01180	0.02024
	(!CLK * !D * SCE)	0.00771	0.00769	0.01613
	!SCE	0.00115	0.00100	0.00098
	!SCE	-0.00105	-0.00120	-0.00122

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00201	0.00195	0.01013
	(CLK * D * SCE)	0.00606	0.00600	0.01416
	(CLK * !D * SCE)	0.00161	0.00157	0.00994
	(CLK * !D * SCE)	0.00581	0.00578	0.01412
	(!CLK * D * SCE)	0.00771	0.00768	0.01711
	(!CLK * D * SCE)	0.01177	0.01173	0.02114
	(!CLK * !D * SCE)	0.00739	0.00738	0.01712
	(!CLK * !D * SCE)	0.01159	0.01158	0.02130
	!SCE	-0.00097	-0.00099	-0.00099
	!SCE	0.00127	0.00127	0.00127
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00215	0.00210	0.01025
	(CLK * D * SCE)	0.00617	0.00611	0.01425
	(CLK * !D * SCE)	0.00176	0.00172	0.01005
	(CLK * !D * SCE)	0.00592	0.00589	0.01420
	(!CLK * D * SCE)	0.00795	0.00794	0.01726
	(!CLK * D * SCE)	0.01197	0.01196	0.02126
	(!CLK * !D * SCE)	0.00761	0.00762	0.01726
	(!CLK * !D * SCE)	0.01177	0.01178	0.02141
	!SCE	-0.00098	-0.00100	-0.00100
	!SCE	0.00120	0.00121	0.00121

sky130_fd_sc_hs__sdfxtp_4	(CLK * D * SCE)	0.00200	0.00195	0.01015
	(CLK * D * SCE)	0.00597	0.00591	0.01409
	(CLK * !D * SCE)	0.00160	0.00157	0.00995
	(CLK * !D * SCE)	0.00572	0.00569	0.01405
	(!CLK * D * SCE)	0.00806	0.00805	0.01742
	(!CLK * D * SCE)	0.01202	0.01202	0.02138
	(!CLK * !D * SCE)	0.00772	0.00774	0.01743
	(!CLK * !D * SCE)	0.01184	0.01185	0.02153
	!SCE	-0.00094	-0.00096	-0.00097
	!SCE	0.00124	0.00124	0.00124

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)	0.00540	0.00552	0.02137
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00040	-0.00029	0.01555
	(CLK * D * !SCD)	0.00794	0.00808	0.02428
	(CLK * D * !SCD)	0.00377	0.00388	0.02005
	(CLK * !D * SCD)	0.00929	0.00964	0.03461
	(CLK * !D * SCD)	0.00205	0.00240	0.02738
	(!CLK * D * SCD)	0.00540	0.00552	0.02137
	(!CLK * D * SCD)	-0.00040	-0.00029	0.01555
	(!CLK * D * !SCD)	0.01346	0.01373	0.02999
	(!CLK * D * !SCD)	0.00929	0.00952	0.02576
	(!CLK * !D * SCD)	0.01473	0.01516	0.04072
	(!CLK * !D * SCD)	0.00749	0.00791	0.03351
	(!CLK * !D * !SCD)	0.00521	0.00550	0.02120
	(!CLK * !D * !SCD)	-0.00026	0.00001	0.01572

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00519	0.00540	0.02123
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00039	-0.00023	0.01562
	(CLK * D * !SCD)	0.00784	0.00802	0.02424
	(CLK * D * !SCD)	0.00390	0.00404	0.02026
	(CLK * !D * SCD)	0.00934	0.00976	0.03467
	(CLK * !D * SCD)	0.00229	0.00269	0.02765
	(!CLK * D * SCD)	0.00519	0.00539	0.02123
	(!CLK * D * SCD)	-0.00040	-0.00023	0.01562
	(!CLK * D * !SCD)	0.01346	0.01377	0.03005
	(!CLK * D * !SCD)	0.00954	0.00981	0.02606
	(!CLK * !D * SCD)	0.01523	0.01571	0.04119
	(!CLK * !D * SCD)	0.00818	0.00865	0.03418
	(!CLK * !D * !SCD)	0.00504	0.00538	0.02110
	(!CLK * !D * !SCD)	-0.00022	0.00010	0.01583
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00540	0.00555	0.02134
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00039	-0.00028	0.01554
	(CLK * D * !SCD)	0.00790	0.00803	0.02421
	(CLK * D * !SCD)	0.00371	0.00381	0.01997
	(CLK * !D * SCD)	0.00930	0.00968	0.03461
	(CLK * !D * SCD)	0.00210	0.00247	0.02742
	(!CLK * D * SCD)	0.00540	0.00551	0.02135
	(!CLK * D * SCD)	-0.00038	-0.00028	0.01554
	(!CLK * D * !SCD)	0.01379	0.01404	0.03028
	(!CLK * D * !SCD)	0.00960	0.00983	0.02604
	(!CLK * !D * SCD)	0.01477	0.01520	0.04071
	(!CLK * !D * SCD)	0.00757	0.00798	0.03353
	(!CLK * !D * !SCD)	0.00520	0.00549	0.02117
	(!CLK * !D * !SCD)	-0.00026	0.00001	0.01570

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)	-0.00047	0.00028	0.01628
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00533	0.00610	0.02209
	(CLK * D * !SCD)	0.00365	0.00418	0.02034
	(CLK * D * !SCD)	0.00785	0.00840	0.02441
	(CLK * !D * SCD)	0.00122	0.00183	0.02662
	(CLK * !D * SCD)	0.00843	0.00908	0.03386
	(!CLK * D * SCD)	-0.00047	0.00027	0.01628
	(!CLK * D * SCD)	0.00533	0.00609	0.02209
	(!CLK * D * !SCD)	0.00906	0.00969	0.02564
	(!CLK * D * !SCD)	0.01327	0.01390	0.02972
	(!CLK * !D * SCD)	0.00687	0.00750	0.03304
	(!CLK * !D * SCD)	0.01409	0.01473	0.04026
	(!CLK * !D * !SCD)	0.00002	0.00071	0.01657
	(!CLK * !D * !SCD)	0.00549	0.00621	0.02205

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00046	0.00033	0.01636
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00514	0.00594	0.02195
	(CLK * D * !SCD)	0.00393	0.00449	0.02065
	(CLK * D * !SCD)	0.00790	0.00849	0.02449
	(CLK * !D * SCD)	0.00128	0.00193	0.02668
	(CLK * !D * SCD)	0.00831	0.00896	0.03373
	(!CLK * D * SCD)	-0.00046	0.00032	0.01635
	(!CLK * D * SCD)	0.00514	0.00593	0.02195
	(!CLK * D * !SCD)	0.00979	0.01045	0.02641
	(!CLK * D * !SCD)	0.01377	0.01443	0.03025
	(!CLK * !D * SCD)	0.00704	0.00769	0.03315
	(!CLK * !D * SCD)	0.01407	0.01473	0.04018
	(!CLK * !D * !SCD)	-0.00002	0.00075	0.01660
	(!CLK * !D * !SCD)	0.00526	0.00603	0.02187
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00045	0.00030	0.01630
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00535	0.00612	0.02209
	(CLK * D * !SCD)	0.00368	0.00422	0.02036
	(CLK * D * !SCD)	0.00790	0.00844	0.02444
	(CLK * !D * SCD)	0.00121	0.00183	0.02661
	(CLK * !D * SCD)	0.00839	0.00904	0.03382
	(!CLK * D * SCD)	-0.00044	0.00029	0.01630
	(!CLK * D * SCD)	0.00535	0.00611	0.02209
	(!CLK * D * !SCD)	0.00912	0.00975	0.02569
	(!CLK * D * !SCD)	0.01334	0.01396	0.02978
	(!CLK * !D * SCD)	0.00725	0.00787	0.03333
	(!CLK * !D * SCD)	0.01443	0.01506	0.04053
	(!CLK * !D * !SCD)	0.00005	0.00075	0.01660
	(!CLK * !D * !SCD)	0.00550	0.00622	0.02205

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)	0.01239	0.01263	0.03504
	(D * SCD * SCE * Q)	0.00836	0.00860	0.03101
	(D * !SCE * Q)	0.01237	0.01264	0.03502
	(D * !SCE * Q)	0.00834	0.00859	0.03100
	(D * !SCD * SCE * !Q)	0.01233	0.01252	0.03508
	(D * !SCD * SCE * !Q)	0.00830	0.00848	0.03106
	(!D * SCD * SCE * Q)	0.01239	0.01264	0.03504
	(!D * SCD * SCE * Q)	0.00836	0.00860	0.03102
	(!D * !SCE * !Q)	0.01233	0.01257	0.03510
	(!D * !SCE * !Q)	0.00830	0.00854	0.03107
	(!D * !SCD * SCE * !Q)	0.01233	0.01257	0.03510
	(!D * !SCD * SCE * !Q)	0.00830	0.00855	0.03107
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01261	0.01287	0.03511
	(D * SCD * SCE * Q)	0.00854	0.00879	0.03104
	(D * !SCE * Q)	0.01259	0.01286	0.03511
	(D * !SCE * Q)	0.00852	0.00879	0.03104
	(D * !SCD * SCE * !Q)	0.01267	0.01281	0.03528
	(D * !SCD * SCE * !Q)	0.00861	0.00874	0.03121
	(!D * SCD * SCE * Q)	0.01261	0.01287	0.03511
	(!D * SCD * SCE * Q)	0.00854	0.00879	0.03104
	(!D * !SCE * !Q)	0.01267	0.01293	0.03528
	(!D * !SCE * !Q)	0.00860	0.00885	0.03121
	(!D * !SCD * SCE * !Q)	0.01268	0.01285	0.03529
	(!D * !SCD * SCE * !Q)	0.00861	0.00877	0.03123

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01254	0.01276	0.03516
	(D * SCD * SCE * Q)	0.00849	0.00871	0.03112
	(D * !SCE * Q)	0.01252	0.01276	0.03515
	(D * !SCE * Q)	0.00848	0.00871	0.03111
	(D * !SCD * SCE * !Q)	0.01242	0.01260	0.03516
	(D * !SCD * SCE * !Q)	0.00838	0.00855	0.03111
	(!D * SCD * SCE * Q)	0.01254	0.01276	0.03516
	(!D * SCD * SCE * Q)	0.00849	0.00872	0.03112
	(!D * !SCE * !Q)	0.01242	0.01265	0.03516
	(!D * !SCE * !Q)	0.00838	0.00859	0.03112
	(!D * !SCD * SCE * !Q)	0.01243	0.01260	0.03506
	(!D * !SCD * SCE * !Q)	0.00838	0.00855	0.03101

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)**	0.00719	0.00789	0.03088
	(D * SCD * SCE * Q)	0.01122	0.01193	0.03491
	(D * SCD * SCE * !Q)	0.01225	0.01284	0.03639
	(D * SCD * SCE * !Q)	0.01626	0.01687	0.04041
	(D * !SCE * Q)	0.00719	0.00789	0.03087
	(D * !SCE * Q)	0.01122	0.01193	0.03490
	(D * !SCE * !Q)	0.01221	0.01280	0.03653
	(D * !SCE * !Q)	0.01623	0.01684	0.04056
	(D * !SCD * SCE * Q)	0.01393	0.01464	0.03831
	(D * !SCD * SCE * Q)	0.01798	0.01867	0.04236
	(D * !SCD * SCE * !Q)	0.00711	0.00782	0.03088
	(D * !SCD * SCE * !Q)	0.01114	0.01184	0.03491
	(!D * SCD * SCE * Q)	0.00719	0.00789	0.03088
	(!D * SCD * SCE * Q)	0.01122	0.01193	0.03491
	(!D * SCD * SCE * !Q)	0.01228	0.01287	0.03642
	(!D * SCD * SCE * !Q)	0.01628	0.01689	0.04044
	(!D * !SCE * Q)	0.01389	0.01459	0.03819
	(!D * !SCE * Q)	0.01792	0.01861	0.04222
	(!D * !SCE * !Q)	0.00710	0.00781	0.03086
	(!D * !SCE * !Q)	0.01112	0.01184	0.03488
	(!D * !SCD * SCE * Q)	0.01393	0.01466	0.03829
	(!D * !SCD * SCE * Q)	0.01797	0.01870	0.04233
	(!D * !SCD * SCE * !Q)	0.00711	0.00782	0.03088
	(!D * !SCD * SCE * !Q)	0.01114	0.01184	0.03490

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00749	0.00817	0.03108
	(D * SCD * SCE * Q)	0.01156	0.01224	0.03514
	(D * SCD * SCE * !Q)	0.01295	0.01351	0.03698
	(D * SCD * SCE * !Q)	0.01702	0.01758	0.04105
	(D * !SCE * Q)	0.00749	0.00817	0.03107
	(D * !SCE * Q)	0.01156	0.01224	0.03514
	(D * !SCE * !Q)	0.01292	0.01348	0.03711
	(D * !SCE * !Q)	0.01699	0.01755	0.04119
	(D * !SCD * SCE * Q)	0.01431	0.01506	0.03859
	(D * !SCD * SCE * Q)	0.01841	0.01915	0.04269
	(D * !SCD * SCE * !Q)	0.00729	0.00797	0.03096
	(D * !SCD * SCE * !Q)	0.01136	0.01204	0.03503
	(!D * SCD * SCE * Q)	0.00749	0.00817	0.03108
	(!D * SCD * SCE * Q)	0.01157	0.01224	0.03515
	(!D * SCD * SCE * !Q)	0.01298	0.01354	0.03701
	(!D * SCD * SCE * !Q)	0.01704	0.01760	0.04107
	(!D * !SCE * Q)	0.01427	0.01497	0.03849
	(!D * !SCE * Q)	0.01835	0.01904	0.04256
	(!D * !SCE * !Q)	0.00728	0.00797	0.03094
	(!D * !SCE * !Q)	0.01135	0.01202	0.03500
	(!D * !SCD * SCE * Q)	0.01431	0.01505	0.03858
	(!D * !SCD * SCE * Q)	0.01840	0.01913	0.04265
	(!D * !SCD * SCE * !Q)	0.00729	0.00797	0.03096
	(!D * !SCD * SCE * !Q)	0.01136	0.01204	0.03502

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00714	0.00785	0.03082
	(D * SCD * SCE * Q)	0.01119	0.01188	0.03486
	(D * SCD * SCE * !Q)	0.01229	0.01287	0.03638
	(D * SCD * SCE * !Q)	0.01632	0.01691	0.04042
	(D * !SCE * Q)	0.00714	0.00785	0.03081
	(D * !SCE * Q)	0.01119	0.01188	0.03485
	(D * !SCE * !Q)	0.01225	0.01283	0.03651
	(D * !SCE * !Q)	0.01630	0.01688	0.04055
	(D * !SCD * SCE * Q)	0.01430	0.01507	0.03869
	(D * !SCD * SCE * Q)	0.01837	0.01912	0.04276
	(D * !SCD * SCE * !Q)	0.00711	0.00782	0.03087
	(D * !SCD * SCE * !Q)	0.01116	0.01185	0.03491
	(!D * SCD * SCE * Q)	0.00714	0.00785	0.03082
	(!D * SCD * SCE * Q)	0.01119	0.01189	0.03486
	(!D * SCD * SCE * !Q)	0.01232	0.01290	0.03642
	(!D * SCD * SCE * !Q)	0.01633	0.01693	0.04045
	(!D * !SCE * Q)	0.01426	0.01499	0.03857
	(!D * !SCE * Q)	0.01831	0.01903	0.04262
	(!D * !SCE * !Q)	0.00710	0.00781	0.03085
	(!D * !SCE * !Q)	0.01115	0.01185	0.03489
	(!D * !SCD * SCE * Q)	0.01430	0.01506	0.03868
	(!D * !SCD * SCE * Q)	0.01836	0.01912	0.04272
	(!D * !SCD * SCE * !Q)	0.00711	0.00782	0.03087
	(!D * !SCD * SCE * !Q)	0.01116	0.01185	0.03491

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage 1.68, Temp 25.00

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	0.00235	0.00216	0.00464	1.03856
sky130_fd_sc_hs__sdlclkp_2	0.00235	0.00214	0.00491	2.04994
sky130_fd_sc_hs__sdlclkp_4	0.00223	0.00203	0.00501	3.99082

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	0.76324	1.20626
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.69384	1.05500
sky130_fd_sc_hs__sdlclkp_4	0.00000	0.71396	1.16076

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)	0.07371	0.57913	6.35685
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.07642	0.49567	6.29066
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.09966	0.48434	6.56356

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.09111	0.52060	4.37905
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.10311	0.53633	4.56449
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.13411	0.58669	4.87272

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)	-0.04651	-0.11368	-0.68046
	setup	CLK (R)	0.14950	0.22966	0.93568
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04377	-0.11145	-0.67787
	setup	CLK (R)	0.14519	0.20722	0.95630
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04651	-0.11368	-0.68634
	setup	CLK (R)	0.14227	0.18885	1.06804

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)	-0.13897	-0.25925	-2.73331
	setup	CLK (R)	0.17453	0.31286	3.09862
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.14065	-0.25840	-2.72073
	setup	CLK (R)	0.16955	0.29713	3.09120
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.14414	-0.26334	-2.73100
	setup	CLK (R)	0.17659	0.30171	3.10774

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)	-0.04651	-0.11368	-0.68046
	setup	CLK (R)	0.14950	0.22966	0.93568
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04377	-0.11145	-0.67787
	setup	CLK (R)	0.14519	0.20722	0.95630
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04651	-0.11368	-0.68634
	setup	CLK (R)	0.14227	0.18885	1.06804

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)	-0.13897	-0.25925	-2.73331
	setup	CLK (R)	0.17453	0.31286	3.09862
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.14065	-0.25840	-2.72073
	setup	CLK (R)	0.16955	0.29713	3.09120
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.14414	-0.26334	-2.73100
	setup	CLK (R)	0.17659	0.30171	3.10774

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)	-0.04868	-0.12260	-0.68485
	setup	CLK (R)	0.15123	0.23700	0.97762
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04610	-0.12260	-0.68403
	setup	CLK (R)	0.14797	0.21764	1.00412
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04974	-0.12483	-0.68956
	setup	CLK (R)	0.14680	0.19804	1.11609

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)	-0.15208	-0.26764	-2.79449
	setup	CLK (R)	0.18872	0.32075	2.90328
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.15103	-0.26612	-2.78705
	setup	CLK (R)	0.18121	0.30498	2.89497
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.15496	-0.27107	-2.79519
	setup	CLK (R)	0.18453	0.30729	2.91907

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)	-0.04868	-0.12260	-0.68485
	setup	CLK (R)	0.15123	0.23700	0.97762
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.04610	-0.12260	-0.68403
	setup	CLK (R)	0.14797	0.21764	1.00412
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.04974	-0.12483	-0.68956
	setup	CLK (R)	0.14680	0.19804	1.11609

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)	-0.15208	-0.26764	-2.79449
	setup	CLK (R)	0.18872	0.32075	2.90328
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.15103	-0.26612	-2.78705
	setup	CLK (R)	0.18121	0.30498	2.89497
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.15496	-0.27107	-2.79519
	setup	CLK (R)	0.18453	0.30729	2.91907

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 ()	0.05086	0.67627	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.05846	0.67627	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.08125	0.67627	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 ()	0.21544	0.67627	16.50020
	min_pulse_width	CLK ()	0.18506	0.67627	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.20785	0.67627	16.50020
	min_pulse_width	CLK ()	0.18253	0.67627	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.20785	0.67627	16.50020
	min_pulse_width	CLK ()	0.18759	0.67627	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	0.01559	0.01686	0.06665
	CLK	0.00918	0.01044	0.06041
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01865	0.01988	0.06722
	CLK	0.01186	0.01310	0.06094
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02429	0.02578	0.07012
	CLK	0.01734	0.01889	0.06349

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01826	0.02101	0.07035
	CLK	0.02426	0.02698	0.07611
sky130_fd_sc_hs__sdlclkp_2	CLK	0.02037	0.02320	0.07072
	CLK	0.02672	0.02952	0.07687
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01716	0.02004	0.06961
	CLK	0.02409	0.02689	0.07380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00135	0.00138	0.00136
	(CLK * SCE)	-0.00068	-0.00070	-0.00068
	(CLK * !SCE)	0.00432	0.00480	0.02494
	(CLK * !SCE)	0.00098	0.00146	0.02160
	(!CLK * SCE * !GCLK)	0.00132	0.00134	0.00132
	(!CLK * SCE * !GCLK)	-0.00072	-0.00073	-0.00072
	(!CLK * !SCE * !GCLK)	0.01094	0.01110	0.03041
	(!CLK * !SCE * !GCLK)	0.00798	0.00812	0.02743
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00135	0.00138	0.00135
	(CLK * SCE)	-0.00068	-0.00069	-0.00068
	(CLK * !SCE)	0.00427	0.00476	0.02491
	(CLK * !SCE)	0.00095	0.00143	0.02158
	(!CLK * SCE * !GCLK)	0.00131	0.00134	0.00132
	(!CLK * SCE * !GCLK)	-0.00072	-0.00073	-0.00072
	(!CLK * !SCE * !GCLK)	0.01078	0.01093	0.03033
	(!CLK * !SCE * !GCLK)	0.00786	0.00801	0.02741
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00130	0.00132	0.00130
	(CLK * SCE)	-0.00066	-0.00067	-0.00066
	(CLK * !SCE)	0.00415	0.00463	0.02471
	(CLK * !SCE)	0.00098	0.00145	0.02154
	(!CLK * SCE * !GCLK)	0.00127	0.00130	0.00128
	(!CLK * SCE * !GCLK)	-0.00068	-0.00069	-0.00068
	(!CLK * !SCE * !GCLK)	0.01083	0.01100	0.03027
	(!CLK * !SCE * !GCLK)	0.00803	0.00819	0.02748

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00130	-0.00131	-0.00134
	(CLK * SCE)	0.00073	0.00074	0.00071
	(CLK * !SCE)	0.00072	0.00173	0.02200
	(CLK * !SCE)	0.00406	0.00507	0.02532
	(!CLK * SCE * !GCLK)	-0.00127	-0.00128	-0.00131
	(!CLK * SCE * !GCLK)	0.00077	0.00077	0.00074
	(!CLK * !SCE * !GCLK)	0.00949	0.01035	0.03127
	(!CLK * !SCE * !GCLK)	0.01247	0.01333	0.03424
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00130	-0.00131	-0.00133
	(CLK * SCE)	0.00073	0.00074	0.00071
	(CLK * !SCE)	0.00076	0.00176	0.02203
	(CLK * !SCE)	0.00408	0.00509	0.02534
	(!CLK * SCE * !GCLK)	-0.00127	-0.00128	-0.00130
	(!CLK * SCE * !GCLK)	0.00077	0.00077	0.00074
	(!CLK * !SCE * !GCLK)	0.00954	0.01040	0.03134
	(!CLK * !SCE * !GCLK)	0.01248	0.01333	0.03427
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00124	-0.00125	-0.00128
	(CLK * SCE)	0.00071	0.00071	0.00068
	(CLK * !SCE)	0.00101	0.00203	0.02222
	(CLK * !SCE)	0.00418	0.00520	0.02538
	(!CLK * SCE * !GCLK)	-0.00122	-0.00123	-0.00126
	(!CLK * SCE * !GCLK)	0.00073	0.00073	0.00070
	(!CLK * !SCE * !GCLK)	0.00984	0.01069	0.03157
	(!CLK * !SCE * !GCLK)	0.01266	0.01351	0.03438

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00137	0.00118	0.00114
	(CLK * GATE)	-0.00119	-0.00140	-0.00142
	(CLK * !GATE)	0.00553	0.00581	0.01905
	(CLK * !GATE)	0.00157	0.00184	0.01511
	(!CLK * GATE * !GCLK)	0.00137	0.00118	0.00114
	(!CLK * GATE * !GCLK)	-0.00119	-0.00140	-0.00142
	(!CLK * !GATE * !GCLK)	0.01215	0.01227	0.02540
	(!CLK * !GATE * !GCLK)	0.00857	0.00868	0.02182
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00136	0.00118	0.00113
	(CLK * GATE)	-0.00118	-0.00139	-0.00142
	(CLK * !GATE)	0.00548	0.00576	0.01901
	(CLK * !GATE)	0.00155	0.00182	0.01510
	(!CLK * GATE * !GCLK)	0.00136	0.00117	0.00113
	(!CLK * GATE * !GCLK)	-0.00119	-0.00140	-0.00142
	(!CLK * !GATE * !GCLK)	0.01198	0.01211	0.02527
	(!CLK * !GATE * !GCLK)	0.00845	0.00856	0.02175
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00131	0.00112	0.00108
	(CLK * GATE)	-0.00115	-0.00137	-0.00139
	(CLK * !GATE)	0.00537	0.00567	0.01888
	(CLK * !GATE)	0.00159	0.00187	0.01511
	(!CLK * GATE * !GCLK)	0.00131	0.00112	0.00108
	(!CLK * GATE * !GCLK)	-0.00116	-0.00137	-0.00139
	(!CLK * !GATE * !GCLK)	0.01204	0.01215	0.02528
	(!CLK * !GATE * !GCLK)	0.00863	0.00873	0.02189

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00111	-0.00112	-0.00111
	(CLK * GATE)	0.00143	0.00144	0.00144
	(CLK * !GATE)	0.00079	0.00096	0.01394
	(CLK * !GATE)	0.00473	0.00492	0.01789
	(!CLK * GATE * !GCLK)	-0.00112	-0.00113	-0.00112
	(!CLK * GATE * !GCLK)	0.00142	0.00145	0.00144
	(!CLK * !GATE * !GCLK)	0.00950	0.00959	0.02257
	(!CLK * !GATE * !GCLK)	0.01307	0.01319	0.02617
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00110	-0.00110	-0.00110
	(CLK * GATE)	0.00142	0.00143	0.00144
	(CLK * !GATE)	0.00082	0.00100	0.01397
	(CLK * !GATE)	0.00474	0.00493	0.01790
	(!CLK * GATE * !GCLK)	-0.00111	-0.00112	-0.00111
	(!CLK * GATE * !GCLK)	0.00142	0.00145	0.00144
	(!CLK * !GATE * !GCLK)	0.00955	0.00965	0.02263
	(!CLK * !GATE * !GCLK)	0.01310	0.01320	0.02617
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00105	-0.00106	-0.00105
	(CLK * GATE)	0.00141	0.00142	0.00142
	(CLK * !GATE)	0.00108	0.00125	0.01418
	(CLK * !GATE)	0.00485	0.00504	0.01796
	(!CLK * GATE * !GCLK)	-0.00106	-0.00106	-0.00105
	(!CLK * GATE * !GCLK)	0.00141	0.00142	0.00141
	(!CLK * !GATE * !GCLK)	0.00987	0.00996	0.02291
	(!CLK * !GATE * !GCLK)	0.01329	0.01339	0.02634

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.00968	0.01034	0.03808
	(!GATE * !SCE * !GCLK)	0.00359	0.00420	0.03197
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.00981	0.01050	0.03829
	(!GATE * !SCE * !GCLK)	0.00337	0.00401	0.03183
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.00996	0.01063	0.03837
	(!GATE * !SCE * !GCLK)	0.00337	0.00399	0.03176

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.01076	0.01197	0.04337
	(GATE * SCE * !GCLK)	0.01734	0.01856	0.04996
	(GATE * !SCE * !GCLK)	0.01074	0.01194	0.04326
	(GATE * !SCE * !GCLK)	0.01732	0.01854	0.04983
	(!GATE * SCE * !GCLK)	0.01079	0.01200	0.04336
	(!GATE * SCE * !GCLK)	0.01735	0.01857	0.04994
	(!GATE * !SCE * !GCLK)	0.00429	0.00554	0.03370
	(!GATE * !SCE * !GCLK)	0.01038	0.01167	0.03981
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.01043	0.01164	0.04313
	(GATE * SCE * !GCLK)	0.01739	0.01864	0.05012
	(GATE * !SCE * !GCLK)	0.01041	0.01161	0.04302
	(GATE * !SCE * !GCLK)	0.01737	0.01862	0.04998
	(!GATE * SCE * !GCLK)	0.01045	0.01167	0.04311
	(!GATE * SCE * !GCLK)	0.01740	0.01866	0.05009
	(!GATE * !SCE * !GCLK)	0.00406	0.00532	0.03352
	(!GATE * !SCE * !GCLK)	0.01050	0.01179	0.03998
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.01082	0.01201	0.04343
	(GATE * SCE * !GCLK)	0.01791	0.01913	0.05052
	(GATE * !SCE * !GCLK)	0.01080	0.01199	0.04331
	(GATE * !SCE * !GCLK)	0.01789	0.01909	0.05041
	(!GATE * SCE * !GCLK)	0.01085	0.01204	0.04341
	(!GATE * SCE * !GCLK)	0.01792	0.01914	0.05051
	(!GATE * !SCE * !GCLK)	0.00427	0.00552	0.03390
	(!GATE * !SCE * !GCLK)	0.01085	0.01213	0.04052

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00198	0.00380	0.00175	0.00383	0.00279	1.06665	1.06536
sky130_fd_sc_hs__sedfxbp_2	0.00207	0.00384	0.00178	0.00390	0.00279	1.83056	1.89628

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	0.85789	1.56686
sky130_fd_sc_hs__sedfxbp_2	0.00000	0.87495	1.54415

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)	0.20173	0.72873	6.29003
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.20668	0.64684	6.14444

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.18701	0.50500	2.41936
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.21273	0.49584	2.04840

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)	0.28168	0.79204	6.39070
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.33674	0.74403	6.29789

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)	0.28332	0.56463	2.37133
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.31091	0.54809	2.15632

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)	-0.16168	-0.26084	-1.22747
	setup	CLK (R)	0.19840	0.28207	1.25752
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16278	-0.26021	-1.23913
	setup	CLK (R)	0.19834	0.28491	1.27022

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)	-0.34505	-0.48486	-3.33138
	setup	CLK (R)	0.43275	0.55089	3.46375
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.33997	-0.48702	-3.34469
	setup	CLK (R)	0.43127	0.54777	3.48077

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)	-0.16168	-0.26084	-1.22747
	setup	CLK (R)	0.19840	0.28207	1.25752
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16278	-0.26021	-1.23913
	setup	CLK (R)	0.19834	0.28491	1.27022

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)	-0.34505	-0.48486	-3.33138
	setup	CLK (R)	0.43275	0.55089	3.46375
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.33997	-0.48702	-3.34469
	setup	CLK (R)	0.43127	0.54777	3.48077

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)	-0.04048	-0.05575	-0.11578
	setup	CLK (R)	0.47235	0.49268	1.15422
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.04033	-0.05822	-0.12708
	setup	CLK (R)	0.46701	0.49182	1.16702

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)	-0.22879	-0.36694	-2.66719
	setup	CLK (R)	0.38941	0.51525	3.38311
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.22991	-0.36654	-2.67758
	setup	CLK (R)	0.38764	0.51497	3.39469

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)	-0.04048	-0.05575	-0.11578
	hold	CLK (R)	-0.16358	-0.19679	-0.45783
	setup	CLK (R)	0.19781	0.26350	1.15422
	setup	CLK (R)	0.47235	0.49268	0.87314
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.04033	-0.05822	-0.12708
	hold	CLK (R)	-0.16428	-0.19679	-0.47563
	setup	CLK (R)	0.20037	0.26750	1.16702
	setup	CLK (R)	0.46701	0.49182	0.88541

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)	-0.36258	-0.49427	-3.36841
	hold	CLK (R)	-0.22879	-0.36694	-2.66719
	setup	CLK (R)	0.38941	0.51525	3.38311
	setup	CLK (R)	0.24888	0.37524	2.67820
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.35662	-0.49682	-3.37776
	hold	CLK (R)	-0.22991	-0.36654	-2.67758
	setup	CLK (R)	0.38764	0.51497	3.39469
	setup	CLK (R)	0.24758	0.37757	2.68607

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)	-0.09485	-0.17173	-0.87373
	setup	CLK (R)	0.12048	0.18675	0.90248
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.09923	-0.17491	-0.88784
	setup	CLK (R)	0.12092	0.18924	0.91706

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)	-0.23858	-0.35877	-3.01333
	setup	CLK (R)	0.31098	0.41845	3.18424
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.23820	-0.36091	-3.02942
	setup	CLK (R)	0.30924	0.41710	3.20641

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)	-0.09485	-0.17173	-0.87373
	setup	CLK (R)	0.12048	0.18675	0.90248
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.09923	-0.17491	-0.88784
	setup	CLK (R)	0.12092	0.18924	0.91706

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)	-0.23858	-0.35877	-3.01333
	setup	CLK (R)	0.31098	0.41845	3.18424
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.23820	-0.36091	-3.02942
	setup	CLK (R)	0.30924	0.41710	3.20641

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)	0.00186	0.01923	0.28183
	setup	CLK (R)	0.32760	0.33397	0.84460
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00201	0.01739	0.27866
	setup	CLK (R)	0.32677	0.33526	0.85472

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)	-0.16113	-0.30434	-2.63963
	setup	CLK (R)	0.28835	0.39539	3.13103
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16238	-0.31233	-2.66877
	setup	CLK (R)	0.28296	0.39531	3.15413

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)	-0.25297	-0.27417	-0.41508
	hold	CLK (R)	0.00186	0.01923	0.28183
	hold	CLK (R)	-0.08102	-0.16600	-0.80465
	hold	CLK (R)	-0.11603	-0.14641	-0.30876
	setup	CLK (R)	0.32760	0.33386	0.72648
	setup	CLK (R)	0.10568	0.18089	0.84407
	setup	CLK (R)	0.10568	0.18089	0.84460
	setup	CLK (R)	0.32757	0.33397	0.72823
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.25264	-0.27747	-0.44527
	hold	CLK (R)	0.00201	0.01739	0.27866
	hold	CLK (R)	-0.08308	-0.16608	-0.81379
	hold	CLK (R)	-0.11812	-0.14943	-0.33575
	setup	CLK (R)	0.32677	0.33526	0.74729
	setup	CLK (R)	0.10909	0.18187	0.85416
	setup	CLK (R)	0.10908	0.18187	0.85472
	setup	CLK (R)	0.32335	0.33493	0.74921

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)	-0.16461	-0.31270	-2.65928
	hold	CLK (R)	-0.20278	-0.33116	-2.97945
	hold	CLK (R)	-0.19485	-0.32716	-2.99487
	hold	CLK (R)	-0.16113	-0.30434	-2.63963
	setup	CLK (R)	0.20194	0.33159	2.68278
	setup	CLK (R)	0.22597	0.34579	2.99650
	setup	CLK (R)	0.28835	0.39539	3.13103
	setup	CLK (R)	0.17845	0.31521	2.65001
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16908	-0.31849	-2.68529
	hold	CLK (R)	-0.20158	-0.33409	-2.99958
	hold	CLK (R)	-0.19293	-0.33108	-3.01586
	hold	CLK (R)	-0.16238	-0.31233	-2.66877
	setup	CLK (R)	0.20513	0.33593	2.71063
	setup	CLK (R)	0.22560	0.34942	3.01665
	setup	CLK (R)	0.28296	0.39531	3.15413
	setup	CLK (R)	0.18149	0.32107	2.67557

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 ()	0.09138	0.67627	16.50020
	min_pulse_width	CLK ()	0.09138	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.09391	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.09138	0.67627	16.50020
	min_pulse_width	CLK ()	0.14961	0.67627	16.50020
	min_pulse_width	CLK ()	0.14961	0.67627	16.50020
	min_pulse_width	CLK ()	0.09391	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.10404	0.67627	16.50020
	min_pulse_width	CLK ()	0.10404	0.67627	16.50020
	min_pulse_width	CLK ()	0.20278	0.67627	16.50020
	min_pulse_width	CLK ()	0.10404	0.67627	16.50020
	min_pulse_width	CLK ()	0.20278	0.67627	16.50020
	min_pulse_width	CLK ()	0.10404	0.67627	16.50020
	min_pulse_width	CLK ()	0.20025	0.67627	16.50020
	min_pulse_width	CLK ()	0.20025	0.67627	16.50020
	min_pulse_width	CLK ()	0.10404	0.67627	16.50020
	min_pulse_width	CLK ()	0.20278	0.67627	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 ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.16480	0.67627	16.50020
	min_pulse_width	CLK ()	0.25343	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.25343	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.26862	0.67627	16.50020
	min_pulse_width	CLK ()	0.25343	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.25343	0.67627	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.15468	0.67627	16.50020
	min_pulse_width	CLK ()	0.16734	0.67627	16.50020
	min_pulse_width	CLK ()	0.24836	0.67627	16.50020
	min_pulse_width	CLK ()	0.15468	0.67627	16.50020
	min_pulse_width	CLK ()	0.24836	0.67627	16.50020
	min_pulse_width	CLK ()	0.15468	0.67627	16.50020
	min_pulse_width	CLK ()	0.26355	0.67627	16.50020
	min_pulse_width	CLK ()	0.24836	0.67627	16.50020
	min_pulse_width	CLK ()	0.15468	0.67627	16.50020
	min_pulse_width	CLK ()	0.24836	0.67627	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	0.01675	0.01710	0.02869
	CLK	0.01432	0.01462	0.02625
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01921	0.01972	0.03147
	CLK	0.01679	0.01722	0.02926

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01523	0.01536	0.02681
	CLK	0.01375	0.01386	0.02531
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01785	0.01811	0.02956
	CLK	0.01635	0.01661	0.02812

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01525	0.01542	0.02715
	CLK	0.01377	0.01389	0.02564
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01787	0.01819	0.03001
	CLK	0.01637	0.01664	0.02864

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01672	0.01701	0.02849
	CLK	0.01428	0.01458	0.02605
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01917	0.01960	0.03110
	CLK	0.01675	0.01718	0.02873

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00462	0.00475	0.01729
	(DE * SCE)	0.00173	0.00184	0.01439
	(CLK * DE * !SCE)	0.00950	0.00956	0.02057
	(CLK * DE * !SCE)	0.00570	0.00576	0.01677
	(CLK * !DE * !SCE)	0.00107	0.00107	0.00107
	(CLK * !DE * !SCE)	-0.00076	-0.00076	-0.00076
	(!DE * SCE)	0.00108	0.00108	0.00108
	(!DE * SCE)	-0.00076	-0.00076	-0.00075
	(!CLK * DE * !SCE * Q * !Q_N)	0.01641	0.01651	0.02797
	(!CLK * DE * !SCE * Q * !Q_N)	0.01262	0.01271	0.02417
	(!CLK * DE * !SCE * !Q * Q_N)	0.01602	0.01610	0.02730
	(!CLK * DE * !SCE * !Q * Q_N)	0.01217	0.01226	0.02347
	(!CLK * !DE * !SCE)	0.00107	0.00107	0.00107
	(!CLK * !DE * !SCE)	-0.00076	-0.00076	-0.00076
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00469	0.00481	0.01739
	(DE * SCE)	0.00168	0.00179	0.01438
	(CLK * DE * !SCE)	0.00967	0.00972	0.02071
	(CLK * DE * !SCE)	0.00572	0.00578	0.01677
	(CLK * !DE * !SCE)	0.00112	0.00112	0.00112
	(CLK * !DE * !SCE)	-0.00080	-0.00080	-0.00079
	(!DE * SCE)	0.00113	0.00113	0.00112
	(!DE * SCE)	-0.00080	-0.00079	-0.00079
	(!CLK * DE * !SCE * Q * !Q_N)	0.01652	0.01660	0.02806
	(!CLK * DE * !SCE * Q * !Q_N)	0.01257	0.01266	0.02412
	(!CLK * DE * !SCE * !Q * Q_N)	0.01608	0.01615	0.02737
	(!CLK * DE * !SCE * !Q * Q_N)	0.01210	0.01217	0.02339
	(!CLK * !DE * !SCE)	0.00111	0.00112	0.00112
	(!CLK * !DE * !SCE)	-0.00079	-0.00080	-0.00079

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00169	0.00222	0.01489
	(DE * SCE)	0.00463	0.00516	0.01784
	(CLK * DE * !SCE)	0.00308	0.00339	0.01523
	(CLK * DE * !SCE)	0.00693	0.00723	0.01906
	(CLK * !DE * !SCE)	-0.00033	-0.00033	-0.00032
	(CLK * !DE * !SCE)	0.00163	0.00163	0.00162
	(!DE * SCE)	-0.00032	-0.00032	-0.00032
	(!DE * SCE)	0.00163	0.00163	0.00163
	(!CLK * DE * !SCE * Q * !Q_N)	0.01001	0.01029	0.02478
	(!CLK * DE * !SCE * Q * !Q_N)	0.01380	0.01409	0.02858
	(!CLK * DE * !SCE * !Q * Q_N)	0.01081	0.01116	0.02595
	(!CLK * DE * !SCE * !Q * Q_N)	0.01465	0.01500	0.02979
	(!CLK * !DE * !SCE)	-0.00033	-0.00033	-0.00032
	(!CLK * !DE * !SCE)	0.00163	0.00163	0.00162
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00147	0.00199	0.01470
	(DE * SCE)	0.00454	0.00505	0.01775
	(CLK * DE * !SCE)	0.00295	0.00331	0.01507
	(CLK * DE * !SCE)	0.00693	0.00730	0.01905
	(CLK * !DE * !SCE)	-0.00034	-0.00034	-0.00033
	(CLK * !DE * !SCE)	0.00170	0.00170	0.00170
	(!DE * SCE)	-0.00033	-0.00033	-0.00033
	(!DE * SCE)	0.00171	0.00171	0.00170
	(!CLK * DE * !SCE * Q * !Q_N)	0.00986	0.01012	0.02457
	(!CLK * DE * !SCE * Q * !Q_N)	0.01381	0.01407	0.02851
	(!CLK * DE * !SCE * !Q * Q_N)	0.01062	0.01096	0.02575
	(!CLK * DE * !SCE * !Q * Q_N)	0.01460	0.01494	0.02972
	(!CLK * !DE * !SCE)	-0.00034	-0.00034	-0.00033
	(!CLK * !DE * !SCE)	0.00170	0.00170	0.00170

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00866	0.00893	0.03258
	SCE	0.00230	0.00255	0.02621
	(CLK * !SCE)	0.01336	0.01361	0.03643
	(CLK * !SCE)	0.00610	0.00631	0.02916
	(!CLK * D * !SCE * Q * !Q_N)	0.00536	0.00547	0.02107
	(!CLK * D * !SCE * Q * !Q_N)	0.00008	0.00018	0.01580
	(!CLK * D * !SCE * !Q * Q_N)	0.02024	0.02052	0.04387
	(!CLK * D * !SCE * !Q * Q_N)	0.01298	0.01324	0.03661
	(!CLK * !D * !SCE * Q * !Q_N)	0.01626	0.01652	0.03219
	(!CLK * !D * !SCE * Q * !Q_N)	0.01303	0.01327	0.02893
	(!CLK * !D * !SCE * !Q * Q_N)	0.00525	0.00549	0.02110
	(!CLK * !D * !SCE * !Q * Q_N)	0.00003	0.00028	0.01588
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00867	0.00897	0.03265
	SCE	0.00221	0.00246	0.02617
	(CLK * !SCE)	0.01349	0.01375	0.03658
	(CLK * !SCE)	0.00610	0.00632	0.02918
	(!CLK * D * !SCE * Q * !Q_N)	0.00533	0.00551	0.02107
	(!CLK * D * !SCE * Q * !Q_N)	-0.00002	0.00013	0.01572
	(!CLK * D * !SCE * !Q * Q_N)	0.02023	0.02050	0.04390
	(!CLK * D * !SCE * !Q * Q_N)	0.01284	0.01311	0.03649
	(!CLK * !D * !SCE * Q * !Q_N)	0.01611	0.01634	0.03206
	(!CLK * !D * !SCE * Q * !Q_N)	0.01285	0.01306	0.02877
	(!CLK * !D * !SCE * !Q * Q_N)	0.00524	0.00553	0.02113
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00003	0.00020	0.01583

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00245	0.00310	0.02699
	SCE	0.00882	0.00948	0.03334
	(CLK * !SCE)	0.00381	0.00441	0.02763
	(CLK * !SCE)	0.01107	0.01167	0.03487
	(!CLK * D * !SCE * Q * !Q_N)	-0.00004	0.00061	0.01626
	(!CLK * D * !SCE * Q * !Q_N)	0.00521	0.00588	0.02153
	(!CLK * D * !SCE * !Q * Q_N)	0.01140	0.01204	0.03708
	(!CLK * D * !SCE * !Q * Q_N)	0.01866	0.01931	0.04434
	(!CLK * !D * !SCE * Q * !Q_N)	0.01647	0.01711	0.03256
	(!CLK * !D * !SCE * Q * !Q_N)	0.01969	0.02035	0.03584
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00019	0.00057	0.01617
	(!CLK * !D * !SCE * !Q * Q_N)	0.00502	0.00581	0.02141
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00223	0.00289	0.02680
	SCE	0.00871	0.00936	0.03326
	(CLK * !SCE)	0.00366	0.00427	0.02749
	(CLK * !SCE)	0.01107	0.01168	0.03488
	(!CLK * D * !SCE * Q * !Q_N)	-0.00008	0.00058	0.01624
	(!CLK * D * !SCE * Q * !Q_N)	0.00525	0.00593	0.02158
	(!CLK * D * !SCE * !Q * Q_N)	0.01121	0.01187	0.03690
	(!CLK * D * !SCE * !Q * Q_N)	0.01861	0.01926	0.04430
	(!CLK * !D * !SCE * Q * !Q_N)	0.01647	0.01711	0.03249
	(!CLK * !D * !SCE * Q * !Q_N)	0.01971	0.02038	0.03579
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00025	0.00051	0.01612
	(!CLK * !D * !SCE * !Q * Q_N)	0.00503	0.00582	0.02144

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00525	0.00527	0.01335
	(CLK * SCE)	0.00219	0.00219	0.01028
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01213	0.01216	0.02061
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00907	0.00908	0.01754
	!SCE	0.00103	0.00089	0.00087
	!SCE	-0.00103	-0.00118	-0.00120
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00537	0.00539	0.01345
	(CLK * SCE)	0.00224	0.00224	0.01032
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01210	0.01215	0.02058
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00898	0.00900	0.01745
	!SCE	0.00103	0.00088	0.00086
	!SCE	-0.00107	-0.00122	-0.00124

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00269	0.00270	0.01092
	(CLK * SCE)	0.00576	0.00578	0.01398
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00988	0.00999	0.01950
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01296	0.01306	0.02255
	!SCE	-0.00082	-0.00084	-0.00085
	!SCE	0.00122	0.00123	0.00123
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00266	0.00267	0.01087
	(CLK * SCE)	0.00580	0.00582	0.01400
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00982	0.00987	0.01943
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01296	0.01301	0.02256
	!SCE	-0.00081	-0.00084	-0.00084
	!SCE	0.00126	0.00127	0.00127

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00785	0.00839	0.03525
	(CLK * D)	0.00232	0.00283	0.02972
	(CLK * !D)	0.00819	0.00872	0.03542
	(CLK * !D)	0.00266	0.00318	0.02988
	(!CLK * D * SCD * Q * !Q_N)	0.00462	0.00496	0.02061
	(!CLK * D * SCD * Q * !Q_N)	0.00001	0.00031	0.01597
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00445	0.00479	0.02044
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00016	0.00014	0.01580
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01536	0.01558	0.03502
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01156	0.01176	0.03120
	(!CLK * D * !SCD * Q * !Q_N)	0.01537	0.01558	0.03507
	(!CLK * D * !SCD * Q * !Q_N)	0.01157	0.01177	0.03124
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01474	0.01534	0.04237
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00920	0.00979	0.03683
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00508	0.00548	0.02108
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00037	0.00075	0.01636
	(!CLK * !D * SCD * !Q * Q_N)	0.01473	0.01534	0.04221
	(!CLK * !D * SCD * !Q * Q_N)	0.00920	0.00979	0.03668
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01513	0.01572	0.04255
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00960	0.01016	0.03701
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00525	0.00565	0.02125
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00054	0.00092	0.01653
	(!CLK * !D * !SCD * !Q * Q_N)	0.00508	0.00547	0.02108
	(!CLK * !D * !SCD * !Q * Q_N)	0.00037	0.00074	0.01636
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00462	0.00496	0.02061
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00001	0.00031	0.01597
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01538	0.01557	0.03507
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01158	0.01176	0.03124

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00797	0.00850	0.03532
	(CLK * D)	0.00227	0.00278	0.02962
	(CLK * !D)	0.00828	0.00880	0.03546
	(CLK * !D)	0.00259	0.00309	0.02976
	(!CLK * D * SCD * Q * !Q_N)	0.00471	0.00503	0.02062
	(!CLK * D * SCD * Q * !Q_N)	-0.00005	0.00025	0.01586
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00456	0.00487	0.02047
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00020	0.00010	0.01570
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01549	0.01569	0.03504
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01159	0.01176	0.03110
	(!CLK * D * !SCD * Q * !Q_N)	0.01544	0.01563	0.03500
	(!CLK * D * !SCD * Q * !Q_N)	0.01154	0.01171	0.03106
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01471	0.01529	0.04233
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00902	0.00957	0.03664
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00523	0.00560	0.02116
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00039	0.00074	0.01630
	(!CLK * !D * SCD * !Q * Q_N)	0.01471	0.01529	0.04218
	(!CLK * !D * SCD * !Q * Q_N)	0.00902	0.00958	0.03648
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01514	0.01570	0.04254
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00945	0.00999	0.03685
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00539	0.00576	0.02132
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00055	0.00090	0.01646
	(!CLK * !D * !SCD * !Q * Q_N)	0.00523	0.00559	0.02116
	(!CLK * !D * !SCD * !Q * Q_N)	0.00039	0.00073	0.01631
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00471	0.00503	0.02062
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00005	0.00025	0.01586
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01545	0.01561	0.03501
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01154	0.01169	0.03108

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00496	0.00657	0.03057
	(CLK * D)	0.00878	0.01040	0.03423
	(CLK * !D)	0.00496	0.00656	0.03059
	(CLK * !D)	0.00877	0.01039	0.03427
	(!CLK * D * SCD * Q * !Q_N)	0.00003	0.00079	0.01664
	(!CLK * D * SCD * Q * !Q_N)	0.00465	0.00543	0.02127
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00021	0.00096	0.01681
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00483	0.00561	0.02144
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01179	0.01342	0.03728
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01558	0.01724	0.04096
	(!CLK * D * !SCD * Q * !Q_N)	0.01182	0.01345	0.03720
	(!CLK * D * !SCD * Q * !Q_N)	0.01561	0.01726	0.04087
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00864	0.00982	0.03846
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01415	0.01534	0.04400
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00028	0.00051	0.01620
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00442	0.00522	0.02092
	(!CLK * !D * SCD * !Q * Q_N)	0.00867	0.00984	0.03840
	(!CLK * !D * SCD * !Q * Q_N)	0.01419	0.01537	0.04393
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00833	0.00951	0.03806
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01384	0.01503	0.04359
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00045	0.00034	0.01603
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00425	0.00505	0.02075
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00028	0.00051	0.01621
	(!CLK * !D * !SCD * !Q * Q_N)	0.00443	0.00523	0.02092
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00003	0.00079	0.01664
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00465	0.00544	0.02127
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01181	0.01344	0.03721
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01561	0.01725	0.04089

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00519	0.00676	0.03073
	(CLK * D)	0.00910	0.01068	0.03451
	(CLK * !D)	0.00518	0.00675	0.03076
	(CLK * !D)	0.00909	0.01068	0.03454
	(!CLK * D * SCD * Q * !Q_N)	0.00013	0.00086	0.01666
	(!CLK * D * SCD * Q * !Q_N)	0.00488	0.00564	0.02143
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00029	0.00102	0.01682
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00503	0.00579	0.02158
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01185	0.01345	0.03727
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01576	0.01737	0.04105
	(!CLK * D * !SCD * Q * !Q_N)	0.01195	0.01354	0.03732
	(!CLK * D * !SCD * Q * !Q_N)	0.01586	0.01746	0.04111
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00865	0.00979	0.03839
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01432	0.01548	0.04408
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00025	0.00049	0.01616
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00457	0.00536	0.02101
	(!CLK * !D * SCD * !Q * Q_N)	0.00868	0.00982	0.03831
	(!CLK * !D * SCD * !Q * Q_N)	0.01435	0.01550	0.04400
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00831	0.00945	0.03795
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01398	0.01514	0.04362
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00041	0.00034	0.01601
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00442	0.00521	0.02086
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00025	0.00049	0.01616
	(!CLK * !D * !SCD * !Q * Q_N)	0.00458	0.00536	0.02101
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00013	0.00086	0.01666
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00487	0.00564	0.02143
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01195	0.01354	0.03731
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01586	0.01746	0.04108

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)	0.01346	0.01366	0.03600
	(SCD * SCE * Q * !Q_N)	0.00955	0.00973	0.03209
	(D * !SCE * Q * !Q_N)	0.01345	0.01364	0.03590
	(D * !SCE * Q * !Q_N)	0.00954	0.00972	0.03199
	(D * !DE * !SCE * !Q * Q_N)	0.01351	0.01372	0.03603
	(D * !DE * !SCE * !Q * Q_N)	0.00959	0.00980	0.03211
	(!SCD * SCE * !Q * Q_N)	0.01352	0.01374	0.03615
	(!SCD * SCE * !Q * Q_N)	0.00960	0.00982	0.03224
	(!D * !SCE * !Q * Q_N)	0.01351	0.01373	0.03603
	(!D * !SCE * !Q * Q_N)	0.00959	0.00981	0.03211
	(!D * !DE * !SCE * Q * !Q_N)	0.01345	0.01362	0.03590
	(!D * !DE * !SCE * Q * !Q_N)	0.00953	0.00969	0.03198
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01339	0.01358	0.03599
	(SCD * SCE * Q * !Q_N)	0.00948	0.00966	0.03208
	(D * !SCE * Q * !Q_N)	0.01337	0.01355	0.03596
	(D * !SCE * Q * !Q_N)	0.00946	0.00963	0.03205
	(D * !DE * !SCE * !Q * Q_N)	0.01354	0.01369	0.03620
	(D * !DE * !SCE * !Q * Q_N)	0.00963	0.00979	0.03229
	(!SCD * SCE * !Q * Q_N)	0.01356	0.01372	0.03623
	(!SCD * SCE * !Q * Q_N)	0.00965	0.00982	0.03233
	(!D * !SCE * !Q * Q_N)	0.01354	0.01377	0.03621
	(!D * !SCE * !Q * Q_N)	0.00963	0.00986	0.03230
	(!D * !DE * !SCE * Q * !Q_N)	0.01337	0.01355	0.03596
	(!D * !DE * !SCE * Q * !Q_N)	0.00946	0.00963	0.03206

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)	0.00736	0.00805	0.03097
	(SCD * SCE * Q * !Q_N)	0.01126	0.01196	0.03489
	(SCD * SCE * !Q * Q_N)	0.01418	0.01470	0.03814
	(SCD * SCE * !Q * Q_N)	0.01809	0.01859	0.04205
	(D * DE * !SCE * !Q * Q_N)	0.01413	0.01465	0.03807
	(D * DE * !SCE * !Q * Q_N)	0.01805	0.01856	0.04198
	(D * !SCE * Q * !Q_N)	0.00736	0.00805	0.03098
	(D * !SCE * Q * !Q_N)	0.01126	0.01196	0.03490
	(D * !DE * !SCE * !Q * Q_N)	0.00736	0.00800	0.03085
	(D * !DE * !SCE * !Q * Q_N)	0.01128	0.01191	0.03477
	(!SCD * SCE * Q * !Q_N)	0.01566	0.01644	0.04003
	(!SCD * SCE * Q * !Q_N)	0.01957	0.02036	0.04396
	(!SCD * SCE * !Q * Q_N)	0.00737	0.00800	0.03085
	(!SCD * SCE * !Q * Q_N)	0.01129	0.01191	0.03477
	(!D * DE * !SCE * Q * !Q_N)	0.01577	0.01654	0.04009
	(!D * DE * !SCE * Q * !Q_N)	0.01967	0.02045	0.04401
	(!D * !SCE * !Q * Q_N)	0.00737	0.00800	0.03085
	(!D * !SCE * !Q * Q_N)	0.01128	0.01191	0.03477
	(!D * !DE * !SCE * Q * !Q_N)	0.00736	0.00805	0.03098
	(!D * !DE * !SCE * Q * !Q_N)	0.01126	0.01196	0.03489

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00747	0.00817	0.03122
	(SCD * SCE * Q * !Q_N)	0.01136	0.01209	0.03512
	(SCD * SCE * !Q * Q_N)	0.01406	0.01459	0.03811
	(SCD * SCE * !Q * Q_N)	0.01795	0.01850	0.04201
	(D * DE * !SCE * !Q * Q_N)	0.01403	0.01456	0.03807
	(D * DE * !SCE * !Q * Q_N)	0.01793	0.01847	0.04198
	(D * !SCE * Q * !Q_N)	0.00748	0.00818	0.03123
	(D * !SCE * Q * !Q_N)	0.01137	0.01210	0.03513
	(D * !DE * !SCE * !Q * Q_N)	0.00738	0.00803	0.03099
	(D * !DE * !SCE * !Q * Q_N)	0.01128	0.01193	0.03490
	(!SCD * SCE * Q * !Q_N)	0.01570	0.01648	0.04020
	(!SCD * SCE * Q * !Q_N)	0.01961	0.02040	0.04413
	(!SCD * SCE * !Q * Q_N)	0.00738	0.00802	0.03098
	(!SCD * SCE * !Q * Q_N)	0.01127	0.01193	0.03490
	(!D * DE * !SCE * Q * !Q_N)	0.01581	0.01657	0.04026
	(!D * DE * !SCE * Q * !Q_N)	0.01971	0.02047	0.04417
	(!D * !SCE * !Q * Q_N)	0.00739	0.00803	0.03099
	(!D * !SCE * !Q * Q_N)	0.01128	0.01194	0.03490
	(!D * !DE * !SCE * Q * !Q_N)	0.00748	0.00818	0.03123
	(!D * !DE * !SCE * Q * !Q_N)	0.01137	0.01210	0.03513

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00199	0.00386	0.00180	0.00378	0.00277	1.06557
sky130_fd_sc_hs__sedfxtp_2	0.00209	0.00389	0.00182	0.00383	0.00279	2.13246
sky130_fd_sc_hs__sedfxtp_4	0.00210	0.00387	0.00182	0.00381	0.00289	4.03666

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	0.87086	1.65247
sky130_fd_sc_hs__sedfxtp_2	0.00000	0.90040	1.70535
sky130_fd_sc_hs__sedfxtp_4	0.00000	0.95948	1.81111

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)**	0.19681	0.72117	6.27412
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.20185	0.63650	6.39441
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.22736	0.59478	6.40378

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.17547	0.47663	2.31018
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.20207	0.49213	2.42581
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.26953	0.55648	2.58944

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)	-0.15909	-0.25848	-1.22560
	setup	CLK (R)	0.19834	0.28158	1.25974
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16075	-0.26184	-1.22831
	setup	CLK (R)	0.19822	0.28491	1.25978
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16592	-0.26288	-1.23471
	setup	CLK (R)	0.19973	0.28194	1.26809

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)	-0.34259	-0.48507	-3.34011
	setup	CLK (R)	0.43391	0.54870	3.45967
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.34052	-0.48268	-3.33286
	setup	CLK (R)	0.43212	0.54599	3.47626
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.34544	-0.48618	-3.34409
	setup	CLK (R)	0.42350	0.54555	3.52655

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)	-0.03964	-0.05595	-0.11508
	setup	CLK (R)	0.46886	0.49027	1.15608
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03935	-0.05595	-0.11800
	setup	CLK (R)	0.46663	0.48865	1.16041
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03935	-0.05595	-0.12391
	setup	CLK (R)	0.45910	0.48599	1.16402

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)	-0.23157	-0.36825	-2.67460
	setup	CLK (R)	0.38878	0.51608	3.38928
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.23138	-0.37068	-2.67835
	setup	CLK (R)	0.38926	0.51525	3.38816
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.23274	-0.37024	-2.67476
	setup	CLK (R)	0.38940	0.51766	3.39475

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)	-0.03964	-0.05595	-0.11508
	hold	CLK (R)	-0.16159	-0.20094	-0.46694
	setup	CLK (R)	0.19838	0.26288	1.15608
	setup	CLK (R)	0.46886	0.49027	0.85065
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03935	-0.05595	-0.11800
	hold	CLK (R)	-0.16242	-0.19714	-0.45563
	setup	CLK (R)	0.19798	0.26534	1.16041
	setup	CLK (R)	0.46663	0.48865	0.91624
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.03935	-0.05595	-0.12391
	hold	CLK (R)	-0.16174	-0.19679	-0.46810
	setup	CLK (R)	0.19798	0.26534	1.16402
	setup	CLK (R)	0.45910	0.48599	1.01569

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)	-0.36275	-0.49754	-3.37606
	hold	CLK (R)	-0.23157	-0.36825	-2.67460
	setup	CLK (R)	0.38878	0.51608	3.38928
	setup	CLK (R)	0.25158	0.37908	2.68235
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.36176	-0.49875	-3.36793
	hold	CLK (R)	-0.23138	-0.37068	-2.67835
	setup	CLK (R)	0.38926	0.51525	3.38816
	setup	CLK (R)	0.25317	0.37942	2.68493
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.36487	-0.49892	-3.37806
	hold	CLK (R)	-0.23274	-0.37024	-2.67476
	setup	CLK (R)	0.38940	0.51766	3.39475
	setup	CLK (R)	0.25040	0.37741	2.68290

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)	-0.09561	-0.17260	-0.88194
	setup	CLK (R)	0.12092	0.18924	0.91065
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.09863	-0.17318	-0.87689
	setup	CLK (R)	0.12092	0.18924	0.90733
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.09826	-0.17659	-0.88539
	setup	CLK (R)	0.12092	0.18924	0.91676

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)	-0.23992	-0.36119	-3.02715
	setup	CLK (R)	0.31339	0.41894	3.18349
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.23905	-0.35800	-3.01783
	setup	CLK (R)	0.30914	0.41616	3.20973
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.23933	-0.36153	-3.03368
	setup	CLK (R)	0.30211	0.41404	3.28724

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)	0.00337	0.01963	0.28419
	setup	CLK (R)	0.33051	0.33754	0.84832
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00394	0.01963	0.28607
	setup	CLK (R)	0.32747	0.33486	0.84432
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00394	0.01963	0.28419
	setup	CLK (R)	0.31972	0.33311	0.88421

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)	-0.16256	-0.31049	-2.66066
	setup	CLK (R)	0.28694	0.39532	3.13365
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16463	-0.30968	-2.65896
	setup	CLK (R)	0.28214	0.39132	3.14588
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16443	-0.31091	-2.66372
	setup	CLK (R)	0.27746	0.39058	3.19004

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)	-0.25541	-0.28053	-0.43329
	hold	CLK (R)	0.00337	0.01963	0.28419
	hold	CLK (R)	-0.08040	-0.16412	-0.80430
	hold	CLK (R)	-0.11655	-0.15360	-0.32969
	setup	CLK (R)	0.33051	0.33742	0.72080
	setup	CLK (R)	0.10459	0.18187	0.84432
	setup	CLK (R)	0.10459	0.18187	0.84832
	setup	CLK (R)	0.33037	0.33754	0.72291
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.25573	-0.27482	-0.41870
	hold	CLK (R)	0.00394	0.01963	0.28607
	hold	CLK (R)	-0.08341	-0.16628	-0.80370
	hold	CLK (R)	-0.11545	-0.14943	-0.32266
	setup	CLK (R)	0.32747	0.33486	0.78944
	setup	CLK (R)	0.10707	0.18187	0.84432
	setup	CLK (R)	0.10707	0.18187	0.84366
	setup	CLK (R)	0.32622	0.33414	0.78919
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.25844	-0.28163	-0.42741
	hold	CLK (R)	0.00394	0.01963	0.28419
	hold	CLK (R)	-0.08496	-0.16651	-0.81385
	hold	CLK (R)	-0.11743	-0.14943	-0.33376
	setup	CLK (R)	0.31972	0.33311	0.88421
	setup	CLK (R)	0.10754	0.18187	0.85539
	setup	CLK (R)	0.10755	0.18187	0.85569
	setup	CLK (R)	0.31946	0.33304	0.88244

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)	-0.16922	-0.31782	-2.67832
	hold	CLK (R)	-0.20194	-0.33126	-2.99060
	hold	CLK (R)	-0.19709	-0.33119	-3.00580
	hold	CLK (R)	-0.16256	-0.31049	-2.66066
	setup	CLK (R)	0.20258	0.33437	2.70420
	setup	CLK (R)	0.22824	0.34931	3.00699
	setup	CLK (R)	0.28694	0.39532	3.13365
	setup	CLK (R)	0.18202	0.32109	2.66856
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16908	-0.31694	-2.67769
	hold	CLK (R)	-0.19696	-0.33095	-2.98416
	hold	CLK (R)	-0.19121	-0.32744	-3.00008
	hold	CLK (R)	-0.16463	-0.30968	-2.65896
	setup	CLK (R)	0.20490	0.33413	2.70385
	setup	CLK (R)	0.22403	0.34853	3.00192
	setup	CLK (R)	0.28214	0.39132	3.14588
	setup	CLK (R)	0.18342	0.32021	2.67076
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.17193	-0.31763	-2.68173
	hold	CLK (R)	-0.20206	-0.33580	-2.99408
	hold	CLK (R)	-0.19738	-0.33018	-3.00928
	hold	CLK (R)	-0.16443	-0.31091	-2.66372
	setup	CLK (R)	0.20140	0.33431	2.70362
	setup	CLK (R)	0.22918	0.35106	3.01095
	setup	CLK (R)	0.27746	0.39058	3.19004
	setup	CLK (R)	0.18105	0.32053	2.67039

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 ()**	0.08884	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.08884	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.14202	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.09138	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.14202	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.09138	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.14202	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.14202	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.09138	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.14202	0.67627	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.09897	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.10150	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.19012	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.10150	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.19012	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.10150	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.18759	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.18759	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.10150	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.19012	0.67627	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.12429	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.12429	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.27621	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.12429	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.27621	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.12429	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.27368	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.27368	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.12429	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.27621	0.67627	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 ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.16480	0.67627	16.50020
	min_pulse_width	CLK ()	0.25089	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.25089	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.26609	0.67627	16.50020
	min_pulse_width	CLK ()	0.25089	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.25089	0.67627	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.16480	0.67627	16.50020
	min_pulse_width	CLK ()	0.24836	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.24836	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.26355	0.67627	16.50020
	min_pulse_width	CLK ()	0.24836	0.67627	16.50020
	min_pulse_width	CLK ()	0.15214	0.67627	16.50020
	min_pulse_width	CLK ()	0.24836	0.67627	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.14961	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.16227	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.23823	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.14961	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.23823	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.14961	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.25343	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.23823	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.14961	0.67627	16.50020
	min_pulse_width	**CLK ()**	0.23823	0.67627	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	0.02908	0.02967	0.05270
	CLK	0.02434	0.02495	0.04826
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03192	0.03277	0.05595
	CLK	0.02713	0.02801	0.05158
sky130_fd_sc_hs__sedfxtp_4	CLK	0.03737	0.03859	0.06225
	CLK	0.03247	0.03375	0.05813

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.02630	0.02667	0.05026
	CLK	0.02326	0.02364	0.04713
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02935	0.02992	0.05340
	CLK	0.02632	0.02676	0.05000
sky130_fd_sc_hs__sedfxtp_4	CLK	0.03552	0.03505	0.05905
	CLK	0.03235	0.03172	0.05501

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00456	0.00470	0.01727
	(DE * SCE)	0.00166	0.00178	0.01437
	(CLK * DE * !SCE)	0.00949	0.00955	0.02058
	(CLK * DE * !SCE)	0.00566	0.00572	0.01675
	(CLK * !DE * !SCE)	0.00108	0.00108	0.00108
	(CLK * !DE * !SCE)	-0.00077	-0.00077	-0.00076
	(!DE * SCE)	0.00108	0.00108	0.00108
	(!DE * SCE)	-0.00077	-0.00076	-0.00076
	(!CLK * DE * !SCE * Q)	0.01644	0.01653	0.02801
	(!CLK * DE * !SCE * Q)	0.01261	0.01271	0.02418
	(!CLK * DE * !SCE * !Q)	0.01601	0.01609	0.02732
	(!CLK * DE * !SCE * !Q)	0.01214	0.01222	0.02345
	(!CLK * !DE * !SCE)	0.00107	0.00108	0.00108
	(!CLK * !DE * !SCE)	-0.00076	-0.00077	-0.00076
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00471	0.00483	0.01738
	(DE * SCE)	0.00167	0.00177	0.01434
	(CLK * DE * !SCE)	0.00964	0.00969	0.02068
	(CLK * DE * !SCE)	0.00566	0.00571	0.01671
	(CLK * !DE * !SCE)	0.00113	0.00113	0.00112
	(CLK * !DE * !SCE)	-0.00081	-0.00081	-0.00081
	(!DE * SCE)	0.00113	0.00113	0.00113
	(!DE * SCE)	-0.00081	-0.00081	-0.00080
	(!CLK * DE * !SCE * Q)	0.01655	0.01663	0.02809
	(!CLK * DE * !SCE * Q)	0.01257	0.01266	0.02412
	(!CLK * DE * !SCE * !Q)	0.01618	0.01625	0.02746
	(!CLK * DE * !SCE * !Q)	0.01217	0.01223	0.02344
	(!CLK * !DE * !SCE)	0.00111	0.00113	0.00112
	(!CLK * !DE * !SCE)	-0.00080	-0.00081	-0.00081

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00473	0.00485	0.01741
	(DE * SCE)	0.00168	0.00178	0.01436
	(CLK * DE * !SCE)	0.00970	0.00976	0.02070
	(CLK * DE * !SCE)	0.00572	0.00578	0.01673
	(CLK * !DE * !SCE)	0.00113	0.00113	0.00113
	(CLK * !DE * !SCE)	-0.00081	-0.00081	-0.00081
	(!DE * SCE)	0.00114	0.00114	0.00113
	(!DE * SCE)	-0.00081	-0.00081	-0.00080
	(!CLK * DE * !SCE * Q)	0.01645	0.01653	0.02799
	(!CLK * DE * !SCE * Q)	0.01247	0.01255	0.02401
	(!CLK * DE * !SCE * !Q)	0.01603	0.01609	0.02731
	(!CLK * DE * !SCE * !Q)	0.01201	0.01207	0.02329
	(!CLK * !DE * !SCE)	0.00113	0.00113	0.00113
	(!CLK * !DE * !SCE)	-0.00081	-0.00081	-0.00081

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00159	0.00213	0.01483
	(DE * SCE)	0.00454	0.00507	0.01778
	(CLK * DE * !SCE)	0.00300	0.00331	0.01516
	(CLK * DE * !SCE)	0.00688	0.00718	0.01902
	(CLK * !DE * !SCE)	-0.00033	-0.00033	-0.00033
	(CLK * !DE * !SCE)	0.00164	0.00164	0.00163
	(!DE * SCE)	-0.00033	-0.00032	-0.00032
	(!DE * SCE)	0.00164	0.00164	0.00164
	(!CLK * DE * !SCE * Q)	0.00983	0.01017	0.02461
	(!CLK * DE * !SCE * Q)	0.01365	0.01399	0.02844
	(!CLK * DE * !SCE * !Q)	0.01064	0.01100	0.02579
	(!CLK * DE * !SCE * !Q)	0.01451	0.01486	0.02964
	(!CLK * !DE * !SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * !DE * !SCE)	0.00164	0.00164	0.00163
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00154	0.00205	0.01474
	(DE * SCE)	0.00464	0.00515	0.01783
	(CLK * DE * !SCE)	0.00293	0.00329	0.01506
	(CLK * DE * !SCE)	0.00695	0.00731	0.01907
	(CLK * !DE * !SCE)	-0.00033	-0.00033	-0.00033
	(CLK * !DE * !SCE)	0.00172	0.00173	0.00172
	(!DE * SCE)	-0.00033	-0.00033	-0.00032
	(!DE * SCE)	0.00173	0.00173	0.00173
	(!CLK * DE * !SCE * Q)	0.00980	0.01007	0.02452
	(!CLK * DE * !SCE * Q)	0.01376	0.01404	0.02849
	(!CLK * DE * !SCE * !Q)	0.01052	0.01085	0.02565
	(!CLK * DE * !SCE * !Q)	0.01453	0.01487	0.02965
	(!CLK * !DE * !SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * !DE * !SCE)	0.00172	0.00173	0.00172

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00148	0.00199	0.01470
	(DE * SCE)	0.00459	0.00510	0.01780
	(CLK * DE * !SCE)	0.00311	0.00347	0.01520
	(CLK * DE * !SCE)	0.00713	0.00749	0.01922
	(CLK * !DE * !SCE)	-0.00033	-0.00033	-0.00033
	(CLK * !DE * !SCE)	0.00173	0.00173	0.00173
	(!DE * SCE)	-0.00033	-0.00033	-0.00032
	(!DE * SCE)	0.00174	0.00174	0.00173
	(!CLK * DE * !SCE * Q)	0.00989	0.01016	0.02460
	(!CLK * DE * !SCE * Q)	0.01386	0.01413	0.02857
	(!CLK * DE * !SCE * !Q)	0.01066	0.01100	0.02577
	(!CLK * DE * !SCE * !Q)	0.01467	0.01501	0.02978
	(!CLK * !DE * !SCE)	-0.00033	-0.00033	-0.00033
	(!CLK * !DE * !SCE)	0.00172	0.00173	0.00173

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00866	0.00892	0.03260
	SCE	0.00222	0.00247	0.02615
	(CLK * !SCE)	0.01340	0.01364	0.03649
	(CLK * !SCE)	0.00604	0.00626	0.02912
	(!CLK * D * !SCE * Q)	0.00540	0.00554	0.02112
	(!CLK * D * !SCE * Q)	0.00004	0.00017	0.01576
	(!CLK * D * !SCE * !Q)	0.02027	0.02055	0.04393
	(!CLK * D * !SCE * !Q)	0.01292	0.01318	0.03657
	(!CLK * !D * !SCE * Q)	0.01615	0.01635	0.03208
	(!CLK * !D * !SCE * Q)	0.01282	0.01303	0.02874
	(!CLK * !D * !SCE * !Q)	0.00529	0.00556	0.02116
	(!CLK * !D * !SCE * !Q)	-0.00001	0.00022	0.01584

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00878	0.00906	0.03271
	SCE	0.00222	0.00245	0.02613
	(CLK * !SCE)	0.01358	0.01383	0.03665
	(CLK * !SCE)	0.00608	0.00629	0.02914
	(!CLK * D * !SCE * Q)	0.00543	0.00557	0.02115
	(!CLK * D * !SCE * Q)	-0.00001	0.00012	0.01571
	(!CLK * D * !SCE * !Q)	0.02041	0.02067	0.04404
	(!CLK * D * !SCE * !Q)	0.01291	0.01317	0.03655
	(!CLK * !D * !SCE * Q)	0.01616	0.01637	0.03208
	(!CLK * !D * !SCE * Q)	0.01281	0.01302	0.02873
	(!CLK * !D * !SCE * !Q)	0.00532	0.00559	0.02119
	(!CLK * !D * !SCE * !Q)	-0.00006	0.00018	0.01579
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00876	0.00902	0.03271
	SCE	0.00222	0.00248	0.02615
	(CLK * !SCE)	0.01360	0.01385	0.03666
	(CLK * !SCE)	0.00613	0.00635	0.02918
	(!CLK * D * !SCE * Q)	0.00542	0.00556	0.02114
	(!CLK * D * !SCE * Q)	-0.00000	0.00013	0.01573
	(!CLK * D * !SCE * !Q)	0.02023	0.02051	0.04389
	(!CLK * D * !SCE * !Q)	0.01277	0.01303	0.03641
	(!CLK * !D * !SCE * Q)	0.01624	0.01645	0.03217
	(!CLK * !D * !SCE * Q)	0.01291	0.01312	0.02883
	(!CLK * !D * !SCE * !Q)	0.00531	0.00558	0.02118
	(!CLK * !D * !SCE * !Q)	-0.00004	0.00019	0.01581

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00236	0.00301	0.02689
	SCE	0.00881	0.00947	0.03333
	(CLK * !SCE)	0.00373	0.00434	0.02754
	(CLK * !SCE)	0.01110	0.01169	0.03489
	(!CLK * D * !SCE * Q)	-0.00007	0.00058	0.01623
	(!CLK * D * !SCE * Q)	0.00528	0.00595	0.02159
	(!CLK * D * !SCE * !Q)	0.01124	0.01188	0.03690
	(!CLK * D * !SCE * !Q)	0.01861	0.01924	0.04424
	(!CLK * !D * !SCE * Q)	0.01645	0.01707	0.03254
	(!CLK * !D * !SCE * Q)	0.01974	0.02040	0.03589
	(!CLK * !D * !SCE * !Q)	-0.00021	0.00050	0.01614
	(!CLK * !D * !SCE * !Q)	0.00508	0.00583	0.02147
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00236	0.00300	0.02687
	SCE	0.00894	0.00959	0.03343
	(CLK * !SCE)	0.00371	0.00430	0.02749
	(CLK * !SCE)	0.01121	0.01181	0.03498
	(!CLK * D * !SCE * Q)	-0.00009	0.00055	0.01620
	(!CLK * D * !SCE * Q)	0.00533	0.00600	0.02164
	(!CLK * D * !SCE * !Q)	0.01117	0.01181	0.03682
	(!CLK * D * !SCE * !Q)	0.01867	0.01930	0.04431
	(!CLK * !D * !SCE * Q)	0.01645	0.01708	0.03255
	(!CLK * !D * !SCE * Q)	0.01977	0.02042	0.03591
	(!CLK * !D * !SCE * !Q)	-0.00023	0.00047	0.01611
	(!CLK * !D * !SCE * !Q)	0.00514	0.00588	0.02152

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00230	0.00294	0.02683
	SCE	0.00885	0.00951	0.03337
	(CLK * !SCE)	0.00389	0.00447	0.02765
	(CLK * !SCE)	0.01136	0.01195	0.03511
	(!CLK * D * !SCE * Q)	-0.00008	0.00056	0.01621
	(!CLK * D * !SCE * Q)	0.00531	0.00598	0.02162
	(!CLK * D * !SCE * !Q)	0.01132	0.01196	0.03696
	(!CLK * D * !SCE * !Q)	0.01879	0.01942	0.04442
	(!CLK * !D * !SCE * Q)	0.01635	0.01697	0.03237
	(!CLK * !D * !SCE * Q)	0.01964	0.02029	0.03571
	(!CLK * !D * !SCE * !Q)	-0.00023	0.00049	0.01612
	(!CLK * !D * !SCE * !Q)	0.00512	0.00586	0.02150

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00526	0.00529	0.01336
	(CLK * SCE)	0.00212	0.00213	0.01022
	(!CLK * SCE)	0.01213	0.01217	0.02067
	(!CLK * SCE)	0.00899	0.00901	0.01752
	!SCE	0.00102	0.00087	0.00085
	!SCE	-0.00110	-0.00125	-0.00127
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00538	0.00540	0.01347
	(CLK * SCE)	0.00219	0.00220	0.01029
	(!CLK * SCE)	0.01220	0.01225	0.02074
	(!CLK * SCE)	0.00902	0.00905	0.01755
	!SCE	0.00104	0.00089	0.00088
	!SCE	-0.00111	-0.00126	-0.00128
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00539	0.00540	0.01344
	(CLK * SCE)	0.00221	0.00222	0.01027
	(!CLK * SCE)	0.01201	0.01204	0.02054
	(!CLK * SCE)	0.00884	0.00887	0.01737
	!SCE	0.00103	0.00089	0.00087
	!SCE	-0.00110	-0.00126	-0.00127

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00271	0.00273	0.01094
	(CLK * SCE)	0.00586	0.00589	0.01408
	(!CLK * SCE)	0.00983	0.00995	0.01946
	(!CLK * SCE)	0.01298	0.01310	0.02260
	!SCE	-0.00080	-0.00083	-0.00083
	!SCE	0.00129	0.00130	0.00130
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00262	0.00265	0.01085
	(CLK * SCE)	0.00581	0.00584	0.01403
	(!CLK * SCE)	0.00970	0.00975	0.01933
	(!CLK * SCE)	0.01289	0.01294	0.02250
	!SCE	-0.00083	-0.00085	-0.00085
	!SCE	0.00130	0.00131	0.00131
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00291	0.00293	0.01109
	(CLK * SCE)	0.00609	0.00611	0.01426
	(!CLK * SCE)	0.00995	0.01005	0.01956
	(!CLK * SCE)	0.01312	0.01322	0.02273
	!SCE	-0.00082	-0.00084	-0.00084
	!SCE	0.00130	0.00131	0.00131

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00772	0.00828	0.03514
	(CLK * D)	0.00220	0.00273	0.02962
	(CLK * !D)	0.00803	0.00858	0.03527
	(CLK * !D)	0.00251	0.00304	0.02975
	(!CLK * D * SCD * Q)	0.00450	0.00484	0.02046
	(!CLK * D * SCD * Q)	-0.00009	0.00023	0.01586
	(!CLK * D * DE * SCD * !Q)	0.00436	0.00470	0.02033
	(!CLK * D * DE * SCD * !Q)	-0.00023	0.00010	0.01573
	(!CLK * D * DE * !SCD * !Q)	0.01536	0.01557	0.03493
	(!CLK * D * DE * !SCD * !Q)	0.01162	0.01181	0.03117
	(!CLK * D * !SCD * Q)	0.01530	0.01549	0.03489
	(!CLK * D * !SCD * Q)	0.01155	0.01173	0.03111
	(!CLK * D * !DE * SCD * !Q)	0.01460	0.01515	0.04226
	(!CLK * D * !DE * SCD * !Q)	0.00909	0.00961	0.03673
	(!CLK * D * !DE * !SCD * !Q)	0.00506	0.00542	0.02105
	(!CLK * D * !DE * !SCD * !Q)	0.00039	0.00073	0.01636
	(!CLK * !D * SCD * !Q)	0.01460	0.01522	0.04209
	(!CLK * !D * SCD * !Q)	0.00908	0.00968	0.03659
	(!CLK * !D * DE * SCD * Q)	0.01500	0.01553	0.04243
	(!CLK * !D * DE * SCD * Q)	0.00948	0.00999	0.03692
	(!CLK * !D * DE * !SCD * Q)	0.00520	0.00556	0.02118
	(!CLK * !D * DE * !SCD * Q)	0.00053	0.00087	0.01650
	(!CLK * !D * !SCD * !Q)	0.00506	0.00546	0.02105
	(!CLK * !D * !SCD * !Q)	0.00039	0.00077	0.01636
	(!CLK * !D * !DE * SCD * Q)	0.00450	0.00484	0.02046
	(!CLK * !D * !DE * SCD * Q)	-0.00010	0.00023	0.01586
	(!CLK * !D * !DE * !SCD * Q)	0.01533	0.01549	0.03490
	(!CLK * !D * !DE * !SCD * Q)	0.01160	0.01173	0.03113

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00786	0.00840	0.03525
	(CLK * D)	0.00226	0.00278	0.02965
	(CLK * !D)	0.00785	0.00842	0.03507
	(CLK * !D)	0.00226	0.00282	0.02947
	(!CLK * D * SCD * Q)	0.00456	0.00489	0.02050
	(!CLK * D * SCD * Q)	-0.00011	0.00021	0.01583
	(!CLK * D * DE * SCD * !Q)	0.00443	0.00477	0.02038
	(!CLK * D * DE * SCD * !Q)	-0.00023	0.00008	0.01571
	(!CLK * D * DE * !SCD * !Q)	0.01532	0.01552	0.03488
	(!CLK * D * DE * !SCD * !Q)	0.01151	0.01169	0.03104
	(!CLK * D * !SCD * Q)	0.01529	0.01548	0.03487
	(!CLK * D * !SCD * Q)	0.01150	0.01165	0.03103
	(!CLK * D * !DE * SCD * !Q)	0.01469	0.01530	0.04233
	(!CLK * D * !DE * SCD * !Q)	0.00909	0.00969	0.03674
	(!CLK * D * !DE * !SCD * !Q)	0.00512	0.00551	0.02108
	(!CLK * D * !DE * !SCD * !Q)	0.00037	0.00075	0.01633
	(!CLK * !D * SCD * !Q)	0.01469	0.01530	0.04219
	(!CLK * !D * SCD * !Q)	0.00909	0.00968	0.03659
	(!CLK * !D * DE * SCD * Q)	0.01503	0.01562	0.04247
	(!CLK * !D * DE * SCD * Q)	0.00943	0.01000	0.03687
	(!CLK * !D * DE * !SCD * Q)	0.00525	0.00564	0.02121
	(!CLK * !D * DE * !SCD * Q)	0.00050	0.00088	0.01645
	(!CLK * !D * !SCD * !Q)	0.00512	0.00550	0.02109
	(!CLK * !D * !SCD * !Q)	0.00038	0.00074	0.01633
	(!CLK * !D * !DE * SCD * Q)	0.00456	0.00489	0.02050
	(!CLK * !D * !DE * SCD * Q)	-0.00011	0.00021	0.01583
	(!CLK * !D * !DE * !SCD * Q)	0.01529	0.01547	0.03488
	(!CLK * !D * !DE * !SCD * Q)	0.01150	0.01165	0.03105

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00788	0.00840	0.03520
	(CLK * D)	0.00232	0.00283	0.02964
	(CLK * !D)	0.00787	0.00842	0.03502
	(CLK * !D)	0.00232	0.00287	0.02946
	(!CLK * D * SCD * Q)	0.00453	0.00487	0.02049
	(!CLK * D * SCD * Q)	-0.00010	0.00022	0.01585
	(!CLK * D * DE * SCD * !Q)	0.00440	0.00474	0.02036
	(!CLK * D * DE * SCD * !Q)	-0.00023	0.00009	0.01573
	(!CLK * D * DE * !SCD * !Q)	0.01552	0.01572	0.03509
	(!CLK * D * DE * !SCD * !Q)	0.01174	0.01193	0.03128
	(!CLK * D * !SCD * Q)	0.01546	0.01564	0.03505
	(!CLK * D * !SCD * Q)	0.01170	0.01185	0.03124
	(!CLK * D * !DE * SCD * !Q)	0.01451	0.01505	0.04215
	(!CLK * D * !DE * SCD * !Q)	0.00895	0.00947	0.03658
	(!CLK * D * !DE * !SCD * !Q)	0.00509	0.00550	0.02108
	(!CLK * D * !DE * !SCD * !Q)	0.00038	0.00078	0.01635
	(!CLK * !D * SCD * !Q)	0.01451	0.01512	0.04199
	(!CLK * !D * SCD * !Q)	0.00895	0.00954	0.03643
	(!CLK * !D * DE * SCD * Q)	0.01489	0.01549	0.04231
	(!CLK * !D * DE * SCD * Q)	0.00933	0.00991	0.03675
	(!CLK * !D * DE * !SCD * Q)	0.00522	0.00563	0.02121
	(!CLK * !D * DE * !SCD * Q)	0.00051	0.00090	0.01648
	(!CLK * !D * !SCD * !Q)	0.00510	0.00549	0.02108
	(!CLK * !D * !SCD * !Q)	0.00039	0.00076	0.01636
	(!CLK * !D * !DE * SCD * Q)	0.00452	0.00487	0.02049
	(!CLK * !D * !DE * SCD * Q)	-0.00011	0.00021	0.01585
	(!CLK * !D * !DE * !SCD * Q)	0.01545	0.01564	0.03505
	(!CLK * !D * !DE * !SCD * Q)	0.01168	0.01185	0.03124

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00519	0.00679	0.03076
	(CLK * D)	0.00893	0.01054	0.03439
	(CLK * !D)	0.00522	0.00681	0.03083
	(CLK * !D)	0.00896	0.01058	0.03446
	(!CLK * D * SCD * Q)	0.00023	0.00099	0.01680
	(!CLK * D * SCD * Q)	0.00481	0.00559	0.02140
	(!CLK * D * DE * SCD * !Q)	0.00037	0.00113	0.01694
	(!CLK * D * DE * SCD * !Q)	0.00495	0.00573	0.02154
	(!CLK * D * DE * !SCD * !Q)	0.01199	0.01361	0.03744
	(!CLK * D * DE * !SCD * !Q)	0.01574	0.01737	0.04106
	(!CLK * D * !SCD * Q)	0.01210	0.01371	0.03748
	(!CLK * D * !SCD * Q)	0.01584	0.01746	0.04109
	(!CLK * D * !DE * SCD * !Q)	0.00864	0.00982	0.03845
	(!CLK * D * !DE * SCD * !Q)	0.01416	0.01534	0.04397
	(!CLK * D * !DE * !SCD * !Q)	-0.00020	0.00057	0.01626
	(!CLK * D * !DE * !SCD * !Q)	0.00446	0.00527	0.02093
	(!CLK * !D * SCD * !Q)	0.00867	0.00985	0.03838
	(!CLK * !D * SCD * !Q)	0.01419	0.01536	0.04389
	(!CLK * !D * DE * SCD * Q)	0.00832	0.00951	0.03804
	(!CLK * !D * DE * SCD * Q)	0.01384	0.01502	0.04354
	(!CLK * !D * DE * !SCD * Q)	-0.00034	0.00044	0.01612
	(!CLK * !D * DE * !SCD * Q)	0.00432	0.00514	0.02080
	(!CLK * !D * !SCD * !Q)	-0.00020	0.00057	0.01626
	(!CLK * !D * !SCD * !Q)	0.00446	0.00528	0.02094
	(!CLK * !D * !DE * SCD * Q)	0.00023	0.00099	0.01680
	(!CLK * !D * !DE * SCD * Q)	0.00481	0.00559	0.02140
	(!CLK * !D * !DE * !SCD * Q)	0.01209	0.01371	0.03748
	(!CLK * !D * !DE * !SCD * Q)	0.01584	0.01747	0.04110

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00521	0.00679	0.03077
	(CLK * D)	0.00902	0.01062	0.03446
	(CLK * !D)	0.00518	0.00677	0.03078
	(CLK * !D)	0.00899	0.01060	0.03447
	(!CLK * D * SCD * Q)	0.00020	0.00095	0.01676
	(!CLK * D * SCD * Q)	0.00485	0.00563	0.02143
	(!CLK * D * DE * SCD * !Q)	0.00033	0.00108	0.01689
	(!CLK * D * DE * SCD * !Q)	0.00498	0.00576	0.02156
	(!CLK * D * DE * !SCD * !Q)	0.01196	0.01357	0.03739
	(!CLK * D * DE * !SCD * !Q)	0.01578	0.01739	0.04109
	(!CLK * D * !SCD * Q)	0.01203	0.01363	0.03740
	(!CLK * D * !SCD * Q)	0.01584	0.01745	0.04107
	(!CLK * D * !DE * SCD * !Q)	0.00854	0.00971	0.03833
	(!CLK * D * !DE * SCD * !Q)	0.01414	0.01531	0.04393
	(!CLK * D * !DE * !SCD * !Q)	-0.00022	0.00054	0.01622
	(!CLK * D * !DE * !SCD * !Q)	0.00451	0.00531	0.02097
	(!CLK * !D * SCD * !Q)	0.00858	0.00974	0.03825
	(!CLK * !D * SCD * !Q)	0.01416	0.01533	0.04385
	(!CLK * !D * DE * SCD * Q)	0.00829	0.00945	0.03798
	(!CLK * !D * DE * SCD * Q)	0.01386	0.01505	0.04358
	(!CLK * !D * DE * !SCD * Q)	-0.00035	0.00041	0.01609
	(!CLK * !D * DE * !SCD * Q)	0.00438	0.00518	0.02084
	(!CLK * !D * !SCD * !Q)	-0.00022	0.00054	0.01622
	(!CLK * !D * !SCD * !Q)	0.00451	0.00531	0.02097
	(!CLK * !D * !DE * SCD * Q)	0.00020	0.00095	0.01675
	(!CLK * !D * !DE * SCD * Q)	0.00485	0.00563	0.02143
	(!CLK * !D * !DE * !SCD * Q)	0.01203	0.01363	0.03740
	(!CLK * !D * !DE * !SCD * Q)	0.01584	0.01745	0.04108

	(CLK * D)	0.00525	0.00685	0.03082
	(CLK * D)	0.00903	0.01065	0.03448
	(CLK * !D)	0.00524	0.00683	0.03084
	(CLK * !D)	0.00902	0.01064	0.03450
	(!CLK * D * SCD * Q)	0.00022	0.00098	0.01679
	(!CLK * D * SCD * Q)	0.00484	0.00562	0.02143
	(!CLK * D * DE * SCD * !Q)	0.00035	0.00111	0.01693
	(!CLK * D * DE * SCD * !Q)	0.00497	0.00575	0.02156
	(!CLK * D * DE * !SCD * !Q)	0.01181	0.01343	0.03732
	(!CLK * D * DE * !SCD * !Q)	0.01559	0.01722	0.04097
	(!CLK * D * !SCD * Q)	0.01192	0.01353	0.03732
	(!CLK * D * !SCD * Q)	0.01570	0.01732	0.04099
	(!CLK * D * !DE * SCD * !Q)	0.00878	0.00996	0.03856
	(!CLK * D * !DE * SCD * !Q)	0.01434	0.01551	0.04413
sky130_fd_sc_hs__sedfxtp_4	**(!CLK * D * !DE * !SCD * !Q)**	-0.00021	0.00056	0.01625
	(!CLK * D * !DE * !SCD * !Q)	0.00449	0.00530	0.02097
	(!CLK * !D * SCD * !Q)	0.00881	0.00999	0.03849
	(!CLK * !D * SCD * !Q)	0.01438	0.01554	0.04405
	(!CLK * !D * DE * SCD * Q)	0.00850	0.00966	0.03817
	(!CLK * !D * DE * SCD * Q)	0.01403	0.01521	0.04373
	(!CLK * !D * DE * !SCD * Q)	-0.00034	0.00043	0.01612
	(!CLK * !D * DE * !SCD * Q)	0.00436	0.00517	0.02083
	(!CLK * !D * !SCD * !Q)	-0.00020	0.00056	0.01625
	(!CLK * !D * !SCD * !Q)	0.00449	0.00530	0.02097
	(!CLK * !D * !DE * SCD * Q)	0.00022	0.00098	0.01679
	(!CLK * !D * !DE * SCD * Q)	0.00484	0.00562	0.02143
	(!CLK * !D * !DE * !SCD * Q)	0.01191	0.01353	0.03731
	(!CLK * !D * !DE * !SCD * Q)	0.01569	0.01732	0.04096

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01312	0.01334	0.03565
	(SCD * SCE * Q)	0.00926	0.00945	0.03178
	(D * !SCE * Q)	0.01310	0.01331	0.03563
	(D * !SCE * Q)	0.00924	0.00943	0.03176
	(D * !DE * !SCE * !Q)	0.01341	0.01356	0.03612
	(D * !DE * !SCE * !Q)	0.00953	0.00969	0.03225
	(!SCD * SCE * !Q)	0.01343	0.01358	0.03615
	(!SCD * SCE * !Q)	0.00955	0.00971	0.03228
	(!D * !SCE * !Q)	0.01341	0.01356	0.03612
	(!D * !SCE * !Q)	0.00953	0.00969	0.03224
	(!D * !DE * !SCE * Q)	0.01310	0.01329	0.03576
	(!D * !DE * !SCE * Q)	0.00924	0.00940	0.03189
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01328	0.01348	0.03579
	(SCD * SCE * Q)	0.00938	0.00957	0.03189
	(D * !SCE * Q)	0.01327	0.01346	0.03577
	(D * !SCE * Q)	0.00937	0.00956	0.03188
	(D * !DE * !SCE * !Q)	0.01356	0.01372	0.03625
	(D * !DE * !SCE * !Q)	0.00966	0.00984	0.03236
	(!SCD * SCE * !Q)	0.01358	0.01376	0.03628
	(!SCD * SCE * !Q)	0.00968	0.00985	0.03238
	(!D * !SCE * !Q)	0.01356	0.01372	0.03625
	(!D * !SCE * !Q)	0.00967	0.00984	0.03235
	(!D * !DE * !SCE * Q)	0.01327	0.01346	0.03577
	(!D * !DE * !SCE * Q)	0.00937	0.00956	0.03188

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01328	0.01346	0.03578
	(SCD * SCE * Q)	0.00926	0.00942	0.03176
	(D * !SCE * Q)	0.01326	0.01344	0.03576
	(D * !SCE * Q)	0.00925	0.00940	0.03174
	(D * !DE * !SCE * !Q)	0.01344	0.01357	0.03601
	(D * !DE * !SCE * !Q)	0.00942	0.00955	0.03198
	(!SCD * SCE * !Q)	0.01347	0.01359	0.03604
	(!SCD * SCE * !Q)	0.00944	0.00958	0.03201
	(!D * !SCE * !Q)	0.01345	0.01357	0.03613
	(!D * !SCE * !Q)	0.00942	0.00956	0.03210
	(!D * !DE * !SCE * Q)	0.01326	0.01344	0.03576
	(!D * !DE * !SCE * Q)	0.00925	0.00940	0.03174

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00742	0.00814	0.03113
	(SCD * SCE * Q)	0.01129	0.01201	0.03501
	(SCD * SCE * !Q)	0.01401	0.01455	0.03810
	(SCD * SCE * !Q)	0.01789	0.01842	0.04196
	(D * DE * !SCE * !Q)	0.01398	0.01452	0.03803
	(D * DE * !SCE * !Q)	0.01785	0.01839	0.04190
	(D * !SCE * Q)	0.00743	0.00815	0.03115
	(D * !SCE * Q)	0.01130	0.01202	0.03501
	(D * !DE * !SCE * !Q)	0.00720	0.00785	0.03078
	(D * !DE * !SCE * !Q)	0.01108	0.01173	0.03466
	(!SCD * SCE * Q)	0.01559	0.01639	0.04006
	(!SCD * SCE * Q)	0.01946	0.02027	0.04395
	(!SCD * SCE * !Q)	0.00720	0.00785	0.03078
	(!SCD * SCE * !Q)	0.01108	0.01173	0.03466
	(!D * DE * !SCE * Q)	0.01570	0.01648	0.04012
	(!D * DE * !SCE * Q)	0.01956	0.02035	0.04400
	(!D * !SCE * !Q)	0.00721	0.00786	0.03078
	(!D * !SCE * !Q)	0.01108	0.01174	0.03466
	(!D * !DE * !SCE * Q)	0.00743	0.00815	0.03114
	(!D * !DE * !SCE * Q)	0.01129	0.01202	0.03501

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00749	0.00819	0.03116
	(SCD * SCE * Q)	0.01137	0.01208	0.03505
	(SCD * SCE * !Q)	0.01403	0.01456	0.03805
	(SCD * SCE * !Q)	0.01790	0.01846	0.04194
	(D * DE * !SCE * !Q)	0.01399	0.01452	0.03799
	(D * DE * !SCE * !Q)	0.01787	0.01842	0.04187
	(D * !SCE * Q)	0.00750	0.00820	0.03117
	(D * !SCE * Q)	0.01138	0.01209	0.03506
	(D * !DE * !SCE * !Q)	0.00727	0.00792	0.03081
	(D * !DE * !SCE * !Q)	0.01115	0.01181	0.03471
	(!SCD * SCE * Q)	0.01566	0.01648	0.04008
	(!SCD * SCE * Q)	0.01955	0.02037	0.04399
	(!SCD * SCE * !Q)	0.00727	0.00792	0.03081
	(!SCD * SCE * !Q)	0.01115	0.01181	0.03471
	(!D * DE * !SCE * Q)	0.01576	0.01657	0.04013
	(!D * DE * !SCE * Q)	0.01964	0.02045	0.04403
	(!D * !SCE * !Q)	0.00728	0.00792	0.03081
	(!D * !SCE * !Q)	0.01115	0.01181	0.03471
	(!D * !DE * !SCE * Q)	0.00750	0.00819	0.03117
	(!D * !DE * !SCE * Q)	0.01137	0.01209	0.03506

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00726	0.00797	0.03096
	(SCD * SCE * Q)	0.01129	0.01199	0.03498
	(SCD * SCE * !Q)	0.01377	0.01433	0.03782
	(SCD * SCE * !Q)	0.01780	0.01834	0.04184
	(D * DE * !SCE * !Q)	0.01374	0.01430	0.03775
	(D * DE * !SCE * !Q)	0.01777	0.01832	0.04178
	(D * !SCE * Q)	0.00727	0.00797	0.03097
	(D * !SCE * Q)	0.01130	0.01199	0.03500
	(D * !DE * !SCE * !Q)	0.00718	0.00781	0.03073
	(D * !DE * !SCE * !Q)	0.01121	0.01183	0.03475
	(!SCD * SCE * Q)	0.01535	0.01615	0.03979
	(!SCD * SCE * Q)	0.01939	0.02018	0.04383
	(!SCD * SCE * !Q)	0.00717	0.00781	0.03072
	(!SCD * SCE * !Q)	0.01120	0.01183	0.03475
	(!D * DE * !SCE * Q)	0.01545	0.01623	0.03985
	(!D * DE * !SCE * Q)	0.01948	0.02025	0.04388
	(!D * !SCE * !Q)	0.00718	0.00782	0.03073
	(!D * !SCE * !Q)	0.01121	0.01184	0.03475
	(!D * !DE * !SCE * Q)	0.00727	0.00797	0.03097
	(!D * !DE * !SCE * Q)	0.01130	0.01199	0.03499

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00498	0.00515	0.52873
sky130_fd_sc_hs__xnor2_2	0.00830	0.00822	0.99548
sky130_fd_sc_hs__xnor2_4	0.01480	0.01500	1.64459

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	0.19991	0.59219
sky130_fd_sc_hs__xnor2_2	0.00000	0.16915	0.28171
sky130_fd_sc_hs__xnor2_4	0.00000	0.44572	1.19677

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	0.07705	0.42999	3.05966
	A->Y (FR)	!B	0.09980	0.99409	10.81530
	B->Y (RR)	A	0.07064	0.42100	3.07308
	B->Y (FR)	!A	0.08513	0.98539	10.95500
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.08408	0.38925	3.01677
	A->Y (FR)	!B	0.09793	0.85154	10.64570
	B->Y (RR)	A	0.08073	0.38924	2.98259
	B->Y (FR)	!A	0.08004	0.84039	10.77830
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.09979	0.51630	5.82284
	A->Y (FR)	!B	0.10052	0.76143	10.50650
	B->Y (RR)	A	0.09469	0.50938	5.78334
	B->Y (FR)	!A	0.08019	0.76024	10.79000

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	0.09713	0.51328	3.75927
	A->Y (RF)	!B	0.03951	0.40665	4.36120
	B->Y (FF)	A	0.09318	0.50806	3.93754
	B->Y (RF)	!A	0.03099	0.39095	4.29719
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.11610	0.54864	4.17645
	A->Y (RF)	!B	0.03762	0.34263	4.21218
	B->Y (FF)	A	0.10600	0.50514	3.89888
	B->Y (RF)	!A	0.03261	0.33558	4.24903
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.10743	0.49580	4.09937
	A->Y (RF)	!B	0.03944	0.28932	3.93649
	B->Y (FF)	A	0.09951	0.45561	3.83097
	B->Y (RF)	!A	0.03329	0.27986	3.98654

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	0.00919	0.00987	0.03396
	A	B	0.00158	0.00223	0.02655
	A	!B	-0.00078	-0.00095	0.00129
	A	!B	0.00682	0.00669	0.00897
	B	A	0.00849	0.00921	0.03515
	B	A	0.00236	0.00312	0.02928
	B	!A	0.00014	0.00038	0.00512
	B	!A	0.00630	0.00657	0.01133
sky130_fd_sc_hs__xnor2_2	A	B	0.01456	0.01500	0.03589
	A	B	0.00345	0.00387	0.02474
	A	!B	-0.00004	-0.00037	0.00399
	A	!B	0.01328	0.01302	0.01751
	B	A	0.01393	0.01429	0.03270
	B	A	0.00497	0.00534	0.02388
	B	!A	0.00061	0.00106	0.00961
	B	!A	0.01170	0.01220	0.02084
sky130_fd_sc_hs__xnor2_4	A	B	0.02337	0.02441	0.06981
	A	B	0.00343	0.00437	0.05002
	A	!B	-0.00087	-0.00147	0.00749
	A	!B	0.02460	0.02400	0.03323
	B	A	0.02258	0.02332	0.06540
	B	A	0.00677	0.00751	0.04989
	B	!A	0.00010	0.00111	0.01786
	B	!A	0.02143	0.02236	0.03932

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	0.00227	0.00365	0.02870
	A	B	0.00991	0.01125	0.03630
	A	!B	0.00865	0.00859	0.01052
	A	!B	0.00093	0.00084	0.00264
	B	A	0.00371	0.00436	0.03036
	B	A	0.00970	0.01027	0.03621
	B	!A	0.00588	0.00591	0.00784
	B	!A	-0.00021	-0.00019	0.00157
sky130_fd_sc_hs__xnor2_2	A	B	0.00471	0.00610	0.02851
	A	B	0.01584	0.01720	0.03960
	A	!B	0.01647	0.01618	0.02026
	A	!B	0.00294	0.00266	0.00627
	B	A	0.00758	0.00751	0.03018
	B	A	0.01625	0.01618	0.03868
	B	!A	0.01161	0.01168	0.01569
	B	!A	0.00053	0.00053	0.00416
sky130_fd_sc_hs__xnor2_4	A	B	0.00769	0.01020	0.05854
	A	B	0.02771	0.03020	0.07795
	A	!B	0.03040	0.02992	0.03872
	A	!B	0.00467	0.00405	0.01214
	B	A	0.01121	0.01176	0.05943
	B	A	0.02652	0.02696	0.07444
	B	!A	0.02159	0.02176	0.03024
	B	!A	0.00058	0.00066	0.00878

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00262	0.00686	0.00422	1.04706
sky130_fd_sc_hs__xnor3_2	0.00267	0.00689	0.00426	2.07725
sky130_fd_sc_hs__xnor3_4	0.00265	0.00688	0.00418	4.06658

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	1.15074	1.30642
sky130_fd_sc_hs__xnor3_2	0.00000	1.18028	1.35931
sky130_fd_sc_hs__xnor3_4	0.00000	1.23936	1.46509

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)	0.27668	1.01798	8.69273
	B->X (-R)	0.19613	0.88823	8.49046
	C->X (-R)	0.14553	0.83432	8.30041
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.29396	0.94150	8.68428
	B->X (-R)	0.20723	0.80410	8.46270
	C->X (-R)	0.15358	0.74978	8.27960
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.33381	0.92466	8.71813
	B->X (-R)	0.25278	0.79472	8.52660
	C->X (-R)	0.19305	0.73571	8.33646

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.23638	0.84623	5.24905
	B->X (-F)	0.21936	0.80411	5.36713
	C->X (-F)	0.13201	0.65030	4.92367
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.26071	0.84982	5.23950
	B->X (-F)	0.23826	0.79766	5.33656
	C->X (-F)	0.15490	0.66623	4.94144
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.31425	0.89534	5.47261
	B->X (-F)	0.29699	0.85145	5.58347
	C->X (-F)	0.22419	0.73205	5.21064

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02212	0.02265	0.04513
	A	0.02187	0.02299	0.04688
	B	0.01983	0.02176	0.07436
	B	0.02035	0.02327	0.07652
	C	0.01021	0.01098	0.04066
	C	0.01072	0.01309	0.04324
sky130_fd_sc_hs__xnor3_2	A	0.02456	0.02521	0.04688
	A	0.02406	0.02535	0.04902
	B	0.02217	0.02422	0.07579
	B	0.02133	0.02457	0.07843
	C	0.01272	0.01365	0.04299
	C	0.01296	0.01554	0.04590
sky130_fd_sc_hs__xnor3_4	A	0.03063	0.03123	0.05323
	A	0.02581	0.02642	0.04841
	B	0.02810	0.03003	0.08104
	B	0.02846	0.03132	0.08351
	C	0.01853	0.01948	0.04989
	C	0.01264	0.01361	0.04402

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01784	0.01861	0.04218
	A	0.02266	0.02354	0.04639
	B	0.01824	0.01989	0.07202
	B	0.02132	0.02377	0.07596
	C	0.01111	0.01257	0.04210
	C	0.00937	0.01090	0.04253
sky130_fd_sc_hs__xnor3_2	A	0.02096	0.02102	0.04403
	A	0.02587	0.02592	0.04806
	B	0.01395	0.01568	0.06802
	B	0.02432	0.02615	0.07754
	C	0.01435	0.01522	0.04484
	C	0.01240	0.01364	0.04508
sky130_fd_sc_hs__xnor3_4	A	0.02953	0.02695	0.04949
	A	0.03435	0.03188	0.05431
	B	0.02232	0.02160	0.07290
	B	0.03257	0.03203	0.08300
	C	0.01520	0.01372	0.04729
	C	0.02108	0.01967	0.05132

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00508	0.00527	0.48301
sky130_fd_sc_hs__xor2_2	0.00779	0.00773	0.90753
sky130_fd_sc_hs__xor2_4	0.01579	0.01541	1.59632

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor2_1	0.00000	0.07901	0.14596
sky130_fd_sc_hs__xor2_2	0.00000	0.10828	0.15107
sky130_fd_sc_hs__xor2_4	0.00000	0.21430	0.30213

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	0.09391	0.76160	6.13585
	A->X (FR)	B	0.11733	1.03167	10.80130
	B->X (RR)	!A	0.11443	0.78612	6.53421
	B->X (FR)	A	0.09018	0.97658	10.48140
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.07986	0.64002	6.37309
	A->X (FR)	B	0.10319	0.87823	10.77410
	B->X (RR)	!A	0.09444	0.62269	6.34115
	B->X (FR)	A	0.08143	0.85907	10.76010
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.07554	0.52536	6.30701
	A->X (FR)	B	0.10376	0.75936	10.37600
	B->X (RR)	!A	0.08356	0.49448	6.01244
	B->X (FR)	A	0.08328	0.74742	10.54140

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	0.12880	0.49895	3.13437
	A->X (RF)	B	0.03610	0.38203	3.97262
	B->X (FF)	!A	0.11753	0.48815	3.08043
	B->X (RF)	A	0.02858	0.40577	4.36764
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.16887	0.61622	4.48857
	A->X (RF)	B	0.03354	0.33264	4.02636
	B->X (FF)	!A	0.14886	0.60442	4.45680
	B->X (RF)	A	0.02966	0.40307	5.00324
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.17031	0.57561	4.41706
	A->X (RF)	B	0.03486	0.28387	3.84368
	B->X (FF)	!A	0.14482	0.55833	4.34799
	B->X (RF)	A	0.03090	0.33147	4.61149

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	0.00030	0.00019	0.00247
	A	B	0.00815	0.00808	0.01040
	A	!B	0.01081	0.01111	0.02408
	A	!B	0.00288	0.00316	0.01627
	B	A	0.00032	0.00018	0.00245
	B	A	0.00638	0.00628	0.00859
	B	!A	0.00968	0.00921	0.02791
	B	!A	0.00352	0.00307	0.02180
sky130_fd_sc_hs__xor2_2	A	B	0.00126	0.00109	0.00541
	A	B	0.01411	0.01372	0.01835
	A	!B	0.01449	0.01479	0.02999
	A	!B	0.00351	0.00380	0.01914
	B	A	0.00025	0.00006	0.00436
	B	A	0.01051	0.01036	0.01477
	B	!A	0.01427	0.01328	0.03407
	B	!A	0.00582	0.00484	0.02581
sky130_fd_sc_hs__xor2_4	A	B	0.00176	0.00126	0.01008
	A	B	0.02884	0.02832	0.03724
	A	!B	0.02909	0.02925	0.05869
	A	!B	0.00758	0.00770	0.03748
	B	A	0.00070	0.00043	0.00917
	B	A	0.02230	0.02200	0.03101
	B	!A	0.02563	0.02451	0.06426
	B	!A	0.00961	0.00847	0.04824

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	0.00791	0.00764	0.00952
	A	B	0.00008	-0.00024	0.00165
	A	!B	0.00192	0.00213	0.01425
	A	!B	0.00977	0.01000	0.02217
	B	A	0.00673	0.00683	0.00908
	B	A	0.00061	0.00070	0.00296
	B	!A	0.00300	0.00388	0.02241
	B	!A	0.00938	0.01022	0.02880
sky130_fd_sc_hs__xor2_2	A	B	0.01356	0.01306	0.01713
	A	B	0.00069	0.00021	0.00396
	A	!B	0.00178	0.00200	0.01581
	A	!B	0.01255	0.01283	0.02633
	B	A	0.01146	0.01131	0.01605
	B	A	0.00118	0.00100	0.00529
	B	!A	0.00328	0.00409	0.02463
	B	!A	0.01225	0.01307	0.03329
sky130_fd_sc_hs__xor2_4	A	B	0.02785	0.02684	0.03534
	A	B	0.00080	-0.00038	0.00758
	A	!B	0.00374	0.00415	0.03063
	A	!B	0.02492	0.02536	0.05197
	B	A	0.02342	0.02311	0.03231
	B	A	0.00165	0.00127	0.01045
	B	!A	0.00727	0.00901	0.04723
	B	!A	0.02428	0.02600	0.06410

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_tt_1.68v_25C.ccs
Cell Library: Process , Voltage
1.68, Temp 25.00

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	0.00261	0.00705	0.00421	1.06722
sky130_fd_sc_hs__xor3_2	0.00263	0.00716	0.00421	2.07086
sky130_fd_sc_hs__xor3_4	0.00261	0.00726	0.00416	4.08286

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor3_1	0.00000	1.15074	1.30645
sky130_fd_sc_hs__xor3_2	0.00000	1.18028	1.35934
sky130_fd_sc_hs__xor3_4	0.00000	1.23936	1.46512

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)	0.26970	1.00597	8.65979
	B->X (-R)	0.18793	0.87220	8.42068
	C->X (-R)	0.14390	0.83554	8.29007
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.28087	0.92270	8.58429
	B->X (-R)	0.20130	0.79431	8.35305
	C->X (-R)	0.15396	0.75726	8.23243
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.31809	0.90673	8.78076
	B->X (-R)	0.24273	0.78244	8.54927
	C->X (-R)	0.18511	0.73795	8.42899

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.23387	0.83763	5.15157
	B->X (-F)	0.21913	0.79191	5.26043
	C->X (-F)	0.12574	0.62797	4.82616
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.25536	0.84403	5.22184
	B->X (-F)	0.24046	0.79765	5.33219
	C->X (-F)	0.15431	0.67278	4.97748
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.31647	0.90394	5.51541
	B->X (-F)	0.30324	0.85782	5.61807
	C->X (-F)	0.21918	0.74490	5.27649

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02346	0.02387	0.04601
	A	0.02178	0.02287	0.04655
	B	0.02179	0.02368	0.07620
	B	0.01941	0.02230	0.07576
	C	0.01034	0.01107	0.04181
	C	0.01065	0.01301	0.04355
sky130_fd_sc_hs__xor3_2	A	0.02598	0.02661	0.04852
	A	0.02415	0.02548	0.04922
	B	0.02428	0.02614	0.07825
	B	0.02195	0.02494	0.07805
	C	0.01290	0.01374	0.04465
	C	0.01331	0.01596	0.04620
sky130_fd_sc_hs__xor3_4	A	0.03183	0.03253	0.05427
	A	0.02701	0.02775	0.04977
	B	0.02996	0.03180	0.08355
	B	0.02800	0.03082	0.08355
	C	0.01857	0.01937	0.04961
	C	0.01273	0.01353	0.04398

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02234	0.02250	0.04514
	A	0.02273	0.02356	0.04612
	B	0.02031	0.02194	0.07388
	B	0.02053	0.02310	0.07554
	C	0.01195	0.01349	0.04324
	C	0.00926	0.01084	0.04286
sky130_fd_sc_hs__xor3_2	A	0.02124	0.02111	0.04395
	A	0.02597	0.02595	0.04824
	B	0.02359	0.02465	0.07568
	B	0.02339	0.02540	0.07744
	C	0.01510	0.01611	0.04548
	C	0.01211	0.01352	0.04522
sky130_fd_sc_hs__xor3_4	A	0.03054	0.02765	0.05399
	A	0.03533	0.03254	0.05466
	B	0.02151	0.02093	0.07338
	B	0.03225	0.03184	0.08340
	C	0.01580	0.01384	0.04488
	C	0.02166	0.01970	0.05069