sky130_fd_sc_hs_ss_1.44v_-40C.ccs Library

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

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

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

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

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

SKY130_FD_SC_HS__XNOR2x
SKY130_FD_SC_HS__XNOR3x
SKY130_FD_SC_HS__XOR2x
SKY130_FD_SC_HS__XOR3x

SKY130_FD_SC_HS__A2111OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111oi_1	11.18880
sky130_fd_sc_hs__a2111oi_2	19.18080
sky130_fd_sc_hs__a2111oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__a2111oi_1	0.00260	0.00246	0.00262	0.00274	0.00276	0.07087
sky130_fd_sc_hs__a2111oi_2	0.00492	0.00469	0.00398	0.00401	0.00407	0.13656
sky130_fd_sc_hs__a2111oi_4	0.00977	0.00938	0.00779	0.00764	0.00795	0.26203

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.00009	0.00020
sky130_fd_sc_hs__a2111oi_2	0.00000	0.00017	0.00027
sky130_fd_sc_hs__a2111oi_4	0.00000	0.00034	0.00054

Delay Information

Delay(ns) to Y rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (FR)	0.76908	2.65528	13.27600
	A2->Y (FR)	0.91698	2.83509	13.53560
	B1->Y (FR)	0.87219	2.75430	13.60530
	C1->Y (FR)	0.78702	2.65783	13.70530
	D1->Y (FR)	0.64414	2.45304	13.00810
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.66216	2.31048	13.34890
	A2->Y (FR)	0.84240	2.50351	13.59600
	B1->Y (FR)	0.76867	2.40758	13.65520
	C1->Y (FR)	0.67689	2.30404	13.76600
	D1->Y (FR)	0.47933	2.04682	13.02140
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.61658	2.03463	13.24380
	A2->Y (FR)	0.80263	2.23820	13.54890
	B1->Y (FR)	0.72957	2.14653	13.62270
	C1->Y (FR)	0.62992	2.03548	13.74650
	D1->Y (FR)	0.44299	1.78852	13.01560

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.05184	0.52992	3.44060
	A2->Y (RF)	0.05677	0.51834	3.40672
	B1->Y (RF)	0.04171	0.46285	3.09252
	C1->Y (RF)	0.04251	0.45681	3.07535
	D1->Y (RF)	0.04019	0.44532	3.05297
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.04493	0.49803	3.51264
	A2->Y (RF)	0.05260	0.49072	3.45451
	B1->Y (RF)	0.05141	0.54998	3.94511
	C1->Y (RF)	0.05179	0.53649	3.91640
	D1->Y (RF)	0.04611	0.51535	3.88319
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.04460	0.47431	3.57338
	A2->Y (RF)	0.05130	0.45667	3.41366
	B1->Y (RF)	0.04629	0.50130	3.85200
	C1->Y (RF)	0.04730	0.48586	3.82505
	D1->Y (RF)	0.04233	0.46818	3.82636

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00045	0.00033	0.00031
	A1	0.00522	0.00509	0.00508
	A2	0.00073	0.00065	0.00062
	A2	0.00609	0.00601	0.00598
	B1	0.00082	0.00072	0.00068
	B1	0.00558	0.00548	0.00544
	C1	0.00080	0.00070	0.00066
	C1	0.00516	0.00504	0.00501
	D1	0.00077	0.00064	0.00060
	D1	0.00473	0.00460	0.00446
sky130_fd_sc_hs__a2111oi_2	A1	0.00032	0.00013	0.00010
	A1	0.00918	0.00898	0.00896
	A2	0.00129	0.00109	0.00105
	A2	0.01126	0.01105	0.01102
	B1	0.00190	0.00177	0.00174
	B1	0.01000	0.00987	0.00983
	C1	0.00197	0.00184	0.00180
	C1	0.00911	0.00897	0.00894
	D1	0.00191	0.00173	0.00169
	D1	0.00811	0.00794	0.00769

sky130_fd_sc_hs__a2111oi_4	**A1**	0.00002	-0.00036	-0.00039
	A1	0.01775	0.01739	0.01737
	A2	0.00181	0.00141	0.00135
	A2	0.02177	0.02141	0.02137
	B1	0.00312	0.00289	0.00283
	B1	0.01931	0.01907	0.01901
	C1	0.00317	0.00295	0.00289
	C1	0.01741	0.01716	0.01711
	D1	0.00305	0.00270	0.00264
	D1	0.01541	0.01510	0.01461

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.00615	0.00603	0.00583
	A1	0.00158	0.00144	0.00130
	A2	0.00677	0.00667	0.00646
	A2	0.00157	0.00145	0.00130
	B1	0.00563	0.00555	0.00541
	B1	0.00091	0.00082	0.00070
	C1	0.00482	0.00477	0.00466
	C1	0.00047	0.00041	0.00032
	D1	0.00397	0.00396	0.00388
	D1	-0.00002	-0.00006	-0.00013

sky130_fd_sc_hs__a2111oi_2	**A1**	0.01111	0.01084	0.01044
	A1	0.00267	0.00239	0.00209
	A2	0.01226	0.01204	0.01163
	A2	0.00264	0.00241	0.00209
	B1	0.00936	0.00919	0.00892
	B1	0.00136	0.00118	0.00097
	C1	0.00755	0.00743	0.00724
	C1	0.00039	0.00026	0.00009
	D1	0.00543	0.00541	0.00533
	D1	-0.00085	-0.00089	-0.00095
sky130_fd_sc_hs__a2111oi_4	**A1**	0.02180	0.02126	0.02051
	A1	0.00486	0.00430	0.00375
	A2	0.02417	0.02377	0.02293
	A2	0.00483	0.00435	0.00377
	B1	0.01833	0.01796	0.01746
	B1	0.00235	0.00194	0.00154
	C1	0.01476	0.01447	0.01417
	C1	0.00053	0.00020	-0.00004
	D1	0.01078	0.01066	0.01062
	D1	-0.00176	-0.00192	-0.00195

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)**	0.00099	0.00099	0.00098
	(A2 * B1 * D1 * !Y)	-0.00117	-0.00120	-0.00119
	(A2 * B1 * C1 * !D1 * !Y)	0.00099	0.00099	0.00098
	(A2 * B1 * C1 * !D1 * !Y)	-0.00117	-0.00120	-0.00119
	(A2 * B1 * !C1 * !D1 * !Y)	0.00099	0.00099	0.00098
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00117	-0.00120	-0.00119
	(A2 * !B1 * C1 * D1 * !Y)	0.00098	0.00099	0.00098
	(A2 * !B1 * C1 * D1 * !Y)	-0.00111	-0.00114	-0.00114
	(A2 * !B1 * C1 * !D1 * !Y)	0.00098	0.00099	0.00098
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00111	-0.00114	-0.00114
	(A2 * !B1 * !C1 * D1 * !Y)	0.00098	0.00099	0.00098
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00110	-0.00112	-0.00112
	(!A2 * B1 * D1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * B1 * D1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * B1 * C1 * !D1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * !B1 * C1 * D1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00038	0.00038	0.00037
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00142	-0.00143	-0.00145

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00195	0.00196	0.00196
	(A2 * B1 * D1 * !Y)	-0.00233	-0.00241	-0.00239
	(A2 * B1 * C1 * !D1 * !Y)	0.00195	0.00196	0.00196
	(A2 * B1 * C1 * !D1 * !Y)	-0.00233	-0.00241	-0.00238
	(A2 * B1 * !C1 * !D1 * !Y)	0.00195	0.00196	0.00196
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00234	-0.00241	-0.00238
	(A2 * !B1 * C1 * D1 * !Y)	0.00196	0.00196	0.00196
	(A2 * !B1 * C1 * D1 * !Y)	-0.00220	-0.00228	-0.00227
	(A2 * !B1 * C1 * !D1 * !Y)	0.00196	0.00196	0.00196
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00220	-0.00228	-0.00227
	(A2 * !B1 * !C1 * D1 * !Y)	0.00196	0.00198	0.00196
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00218	-0.00225	-0.00224
	(!A2 * B1 * D1 * !Y)	0.00184	0.00187	0.00185
	(!A2 * B1 * D1 * !Y)	-0.00246	-0.00248	-0.00247
	(!A2 * B1 * C1 * !D1 * !Y)	0.00184	0.00186	0.00185
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00246	-0.00248	-0.00247
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00184	0.00186	0.00185
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00246	-0.00248	-0.00247
	(!A2 * !B1 * C1 * D1 * !Y)	0.00185	0.00187	0.00185
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00247	-0.00248	-0.00247
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00185	0.00186	0.00185
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00246	-0.00248	-0.00247
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00184	0.00186	0.00185
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00246	-0.00248	-0.00247
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00079	0.00079	0.00075
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00282	-0.00284	-0.00289

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00392	0.00394	0.00393
	(A2 * B1 * D1 * !Y)	-0.00466	-0.00481	-0.00477
	(A2 * B1 * C1 * !D1 * !Y)	0.00392	0.00394	0.00393
	(A2 * B1 * C1 * !D1 * !Y)	-0.00466	-0.00481	-0.00477
	(A2 * B1 * !C1 * !D1 * !Y)	0.00392	0.00394	0.00393
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00466	-0.00482	-0.00477
	(A2 * !B1 * C1 * D1 * !Y)	0.00393	0.00393	0.00393
	(A2 * !B1 * C1 * D1 * !Y)	-0.00443	-0.00458	-0.00455
	(A2 * !B1 * C1 * !D1 * !Y)	0.00393	0.00393	0.00393
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00443	-0.00459	-0.00455
	(A2 * !B1 * !C1 * D1 * !Y)	0.00394	0.00397	0.00393
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00437	-0.00450	-0.00448
	(!A2 * B1 * D1 * !Y)	0.00369	0.00373	0.00370
	(!A2 * B1 * D1 * !Y)	-0.00494	-0.00498	-0.00495
	(!A2 * B1 * C1 * !D1 * !Y)	0.00370	0.00373	0.00371
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00494	-0.00497	-0.00495
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00369	0.00372	0.00370
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00495	-0.00498	-0.00495
	(!A2 * !B1 * C1 * D1 * !Y)	0.00370	0.00372	0.00370
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00496	-0.00497	-0.00495
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00370	0.00373	0.00370
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00494	-0.00495	-0.00495
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00369	0.00372	0.00370
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00494	-0.00497	-0.00495
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00152	0.00152	0.00145
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00571	-0.00575	-0.00584

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)**	-0.00098	-0.00098	-0.00098
	(A2 * B1 * D1 * !Y)	0.00119	0.00120	0.00119
	(A2 * B1 * C1 * !D1 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * B1 * C1 * !D1 * !Y)	0.00119	0.00120	0.00119
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * B1 * !C1 * !D1 * !Y)	0.00119	0.00120	0.00119
	(A2 * !B1 * C1 * D1 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * !B1 * C1 * D1 * !Y)	0.00115	0.00114	0.00114
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * !B1 * C1 * !D1 * !Y)	0.00114	0.00114	0.00114
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * !B1 * !C1 * D1 * !Y)	0.00112	0.00112	0.00112
	(!A2 * B1 * D1 * !Y)	-0.00091	-0.00093	-0.00092
	(!A2 * B1 * D1 * !Y)	0.00124	0.00126	0.00124
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00091	-0.00093	-0.00092
	(!A2 * B1 * C1 * !D1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00090	-0.00093	-0.00092
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00091	-0.00093	-0.00092
	(!A2 * !B1 * C1 * D1 * !Y)	0.00125	0.00125	0.00124
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00090	-0.00093	-0.00092
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00090	-0.00093	-0.00092
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00145	0.00145	0.00145

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00195	-0.00196	-0.00195
	(A2 * B1 * D1 * !Y)	0.00239	0.00241	0.00239
	(A2 * B1 * C1 * !D1 * !Y)	-0.00195	-0.00196	-0.00195
	(A2 * B1 * C1 * !D1 * !Y)	0.00239	0.00241	0.00238
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00195	-0.00196	-0.00195
	(A2 * B1 * !C1 * !D1 * !Y)	0.00240	0.00241	0.00238
	(A2 * !B1 * C1 * D1 * !Y)	-0.00196	-0.00196	-0.00195
	(A2 * !B1 * C1 * D1 * !Y)	0.00228	0.00228	0.00227
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00196	-0.00196	-0.00195
	(A2 * !B1 * C1 * !D1 * !Y)	0.00228	0.00228	0.00227
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00196	-0.00196	-0.00196
	(A2 * !B1 * !C1 * D1 * !Y)	0.00225	0.00225	0.00224
	(!A2 * B1 * D1 * !Y)	-0.00180	-0.00187	-0.00185
	(!A2 * B1 * D1 * !Y)	0.00248	0.00249	0.00247
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00180	-0.00186	-0.00185
	(!A2 * B1 * C1 * !D1 * !Y)	0.00248	0.00249	0.00247
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00178	-0.00186	-0.00185
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00246	0.00250	0.00247
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00179	-0.00187	-0.00185
	(!A2 * !B1 * C1 * D1 * !Y)	0.00247	0.00249	0.00247
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00178	-0.00186	-0.00185
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00246	0.00250	0.00247
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00178	-0.00186	-0.00185
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00246	0.00250	0.00247
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00073	-0.00073	-0.00073
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00288	0.00289	0.00289

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00392	-0.00394	-0.00392
	(A2 * B1 * D1 * !Y)	0.00479	0.00481	0.00477
	(A2 * B1 * C1 * !D1 * !Y)	-0.00392	-0.00394	-0.00392
	(A2 * B1 * C1 * !D1 * !Y)	0.00479	0.00481	0.00477
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00392	-0.00394	-0.00392
	(A2 * B1 * !C1 * !D1 * !Y)	0.00480	0.00482	0.00477
	(A2 * !B1 * C1 * D1 * !Y)	-0.00393	-0.00393	-0.00392
	(A2 * !B1 * C1 * D1 * !Y)	0.00458	0.00458	0.00455
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00393	-0.00393	-0.00392
	(A2 * !B1 * C1 * !D1 * !Y)	0.00458	0.00459	0.00455
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00394	-0.00394	-0.00393
	(A2 * !B1 * !C1 * D1 * !Y)	0.00451	0.00450	0.00448
	(!A2 * B1 * D1 * !Y)	-0.00360	-0.00373	-0.00370
	(!A2 * B1 * D1 * !Y)	0.00498	0.00500	0.00496
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00360	-0.00373	-0.00371
	(!A2 * B1 * C1 * !D1 * !Y)	0.00498	0.00500	0.00496
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00356	-0.00372	-0.00370
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00495	0.00502	0.00496
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00359	-0.00372	-0.00370
	(!A2 * !B1 * C1 * D1 * !Y)	0.00497	0.00500	0.00496
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00355	-0.00373	-0.00370
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00494	0.00495	0.00496
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00355	-0.00372	-0.00370
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00496	0.00497	0.00496
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00142	-0.00142	-0.00142
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00584	0.00585	0.00585

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)**	0.00105	0.00105	0.00104
	(A1 * B1 * D1 * !Y)	-0.00118	-0.00121	-0.00120
	(A1 * B1 * C1 * !D1 * !Y)	0.00105	0.00105	0.00104
	(A1 * B1 * C1 * !D1 * !Y)	-0.00118	-0.00121	-0.00120
	(A1 * B1 * !C1 * !D1 * !Y)	0.00105	0.00105	0.00104
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00118	-0.00121	-0.00120
	(A1 * !B1 * C1 * D1 * !Y)	0.00104	0.00105	0.00104
	(A1 * !B1 * C1 * D1 * !Y)	-0.00111	-0.00115	-0.00115
	(A1 * !B1 * C1 * !D1 * !Y)	0.00104	0.00105	0.00104
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00111	-0.00115	-0.00115
	(A1 * !B1 * !C1 * D1 * !Y)	0.00104	0.00105	0.00104
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00110	-0.00113	-0.00113
	(!A1 * B1 * !Y)	0.00098	0.00099	0.00098
	(!A1 * B1 * !Y)	-0.00124	-0.00125	-0.00125
	(!A1 * !B1 * C1 * !Y)	0.00098	0.00099	0.00098
	(!A1 * !B1 * C1 * !Y)	-0.00124	-0.00125	-0.00125
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00098	0.00099	0.00098
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00124	-0.00125	-0.00125
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00099	0.00100	0.00099
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00124	-0.00125	-0.00125

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00197	0.00198	0.00197
	(A1 * B1 * D1 * !Y)	-0.00233	-0.00240	-0.00238
	(A1 * B1 * C1 * !D1 * !Y)	0.00197	0.00198	0.00197
	(A1 * B1 * C1 * !D1 * !Y)	-0.00233	-0.00240	-0.00238
	(A1 * B1 * !C1 * !D1 * !Y)	0.00196	0.00198	0.00197
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00233	-0.00240	-0.00238
	(A1 * !B1 * C1 * D1 * !Y)	0.00197	0.00196	0.00197
	(A1 * !B1 * C1 * D1 * !Y)	-0.00220	-0.00228	-0.00227
	(A1 * !B1 * C1 * !D1 * !Y)	0.00197	0.00196	0.00197
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00220	-0.00228	-0.00227
	(A1 * !B1 * !C1 * D1 * !Y)	0.00197	0.00199	0.00197
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00218	-0.00225	-0.00224
	(!A1 * B1 * !Y)	0.00187	0.00187	0.00186
	(!A1 * B1 * !Y)	-0.00246	-0.00247	-0.00246
	(!A1 * !B1 * C1 * !Y)	0.00186	0.00187	0.00186
	(!A1 * !B1 * C1 * !Y)	-0.00246	-0.00247	-0.00246
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00187	0.00185	0.00186
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00246	-0.00245	-0.00246
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00186	0.00187	0.00185
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00247	-0.00247	-0.00246

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00395	0.00397	0.00395
	(A1 * B1 * D1 * !Y)	-0.00465	-0.00479	-0.00476
	(A1 * B1 * C1 * !D1 * !Y)	0.00395	0.00397	0.00395
	(A1 * B1 * C1 * !D1 * !Y)	-0.00465	-0.00479	-0.00476
	(A1 * B1 * !C1 * !D1 * !Y)	0.00395	0.00397	0.00395
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00465	-0.00479	-0.00476
	(A1 * !B1 * C1 * D1 * !Y)	0.00398	0.00400	0.00395
	(A1 * !B1 * C1 * D1 * !Y)	-0.00444	-0.00455	-0.00455
	(A1 * !B1 * C1 * !D1 * !Y)	0.00398	0.00400	0.00395
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00444	-0.00455	-0.00455
	(A1 * !B1 * !C1 * D1 * !Y)	0.00397	0.00400	0.00396
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00436	-0.00448	-0.00448
	(!A1 * B1 * !Y)	0.00370	0.00375	0.00371
	(!A1 * B1 * !Y)	-0.00493	-0.00497	-0.00494
	(!A1 * !B1 * C1 * !Y)	0.00371	0.00374	0.00371
	(!A1 * !B1 * C1 * !Y)	-0.00494	-0.00496	-0.00494
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00370	0.00374	0.00371
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00492	-0.00496	-0.00494
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00369	0.00373	0.00370
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00493	-0.00497	-0.00495

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)**	-0.00104	-0.00104	-0.00104
	(A1 * B1 * D1 * !Y)	0.00120	0.00121	0.00120
	(A1 * B1 * C1 * !D1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * C1 * !D1 * !Y)	0.00120	0.00121	0.00120
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * !C1 * !D1 * !Y)	0.00120	0.00121	0.00120
	(A1 * !B1 * C1 * D1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * !B1 * C1 * D1 * !Y)	0.00115	0.00115	0.00115
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * !B1 * C1 * !D1 * !Y)	0.00115	0.00115	0.00115
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * !B1 * !C1 * D1 * !Y)	0.00113	0.00113	0.00113
	(!A1 * B1 * !Y)	-0.00097	-0.00099	-0.00098
	(!A1 * B1 * !Y)	0.00125	0.00126	0.00125
	(!A1 * !B1 * C1 * !Y)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1 * C1 * !Y)	0.00124	0.00126	0.00125
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00124	0.00126	0.00125
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00096	-0.00099	-0.00099
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00125	0.00126	0.00125

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00196	-0.00197	-0.00196
	(A1 * B1 * D1 * !Y)	0.00237	0.00240	0.00238
	(A1 * B1 * C1 * !D1 * !Y)	-0.00196	-0.00197	-0.00196
	(A1 * B1 * C1 * !D1 * !Y)	0.00237	0.00240	0.00238
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00196	-0.00197	-0.00196
	(A1 * B1 * !C1 * !D1 * !Y)	0.00237	0.00240	0.00238
	(A1 * !B1 * C1 * D1 * !Y)	-0.00196	-0.00196	-0.00196
	(A1 * !B1 * C1 * D1 * !Y)	0.00226	0.00228	0.00227
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00196	-0.00196	-0.00196
	(A1 * !B1 * C1 * !D1 * !Y)	0.00226	0.00228	0.00227
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00197	-0.00197	-0.00197
	(A1 * !B1 * !C1 * D1 * !Y)	0.00223	0.00225	0.00224
	(!A1 * B1 * !Y)	-0.00182	-0.00187	-0.00186
	(!A1 * B1 * !Y)	0.00247	0.00248	0.00246
	(!A1 * !B1 * C1 * !Y)	-0.00182	-0.00187	-0.00186
	(!A1 * !B1 * C1 * !Y)	0.00247	0.00248	0.00246
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00182	-0.00185	-0.00186
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00247	0.00248	0.00246
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00182	-0.00187	-0.00185
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00248	0.00248	0.00247

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00394	-0.00396	-0.00395
	(A1 * B1 * D1 * !Y)	0.00475	0.00479	0.00476
	(A1 * B1 * C1 * !D1 * !Y)	-0.00394	-0.00396	-0.00395
	(A1 * B1 * C1 * !D1 * !Y)	0.00475	0.00479	0.00476
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00394	-0.00396	-0.00395
	(A1 * B1 * !C1 * !D1 * !Y)	0.00475	0.00479	0.00476
	(A1 * !B1 * C1 * D1 * !Y)	-0.00395	-0.00394	-0.00395
	(A1 * !B1 * C1 * D1 * !Y)	0.00457	0.00455	0.00455
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00395	-0.00394	-0.00394
	(A1 * !B1 * C1 * !D1 * !Y)	0.00457	0.00455	0.00455
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00396	-0.00395	-0.00395
	(A1 * !B1 * !C1 * D1 * !Y)	0.00450	0.00448	0.00448
	(!A1 * B1 * !Y)	-0.00364	-0.00375	-0.00371
	(!A1 * B1 * !Y)	0.00497	0.00500	0.00495
	(!A1 * !B1 * C1 * !Y)	-0.00364	-0.00374	-0.00371
	(!A1 * !B1 * C1 * !Y)	0.00497	0.00499	0.00495
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00364	-0.00374	-0.00371
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00497	0.00499	0.00495
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00363	-0.00373	-0.00370
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00498	0.00499	0.00496

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)**	0.00102	0.00102	0.00102
	(A1 * A2 * C1 * D1 * !Y)	-0.00094	-0.00094	-0.00094
	(A1 * A2 * C1 * !D1 * !Y)	0.00102	0.00102	0.00102
	(A1 * A2 * C1 * !D1 * !Y)	-0.00092	-0.00092	-0.00092
	(A1 * A2 * !C1 * D1 * !Y)	0.00101	0.00103	0.00102
	(A1 * A2 * !C1 * D1 * !Y)	-0.00089	-0.00088	-0.00088
	(A1 * A2 * !C1 * !D1 * !Y)	0.00101	0.00102	0.00102
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * C1 * D1 * !Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * C1 * D1 * !Y)	-0.00116	-0.00119	-0.00118
	(A1 * !A2 * C1 * !D1 * !Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00116	-0.00119	-0.00118
	(A1 * !A2 * !C1 * D1 * !Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00108	-0.00110	-0.00111
	(!A1 * C1 * D1 * !Y)	0.00101	0.00102	0.00101
	(!A1 * C1 * D1 * !Y)	-0.00116	-0.00119	-0.00118
	(!A1 * C1 * !D1 * !Y)	0.00101	0.00102	0.00101
	(!A1 * C1 * !D1 * !Y)	-0.00116	-0.00119	-0.00118
	(!A1 * !C1 * D1 * !Y)	0.00101	0.00102	0.00101
	(!A1 * !C1 * D1 * !Y)	-0.00108	-0.00110	-0.00111

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00116	0.00117	0.00116
	(A1 * A2 * C1 * D1 * !Y)	-0.00186	-0.00187	-0.00186
	(A1 * A2 * C1 * !D1 * !Y)	0.00116	0.00116	0.00116
	(A1 * A2 * C1 * !D1 * !Y)	-0.00182	-0.00183	-0.00182
	(A1 * A2 * !C1 * D1 * !Y)	0.00116	0.00116	0.00117
	(A1 * A2 * !C1 * D1 * !Y)	-0.00179	-0.00177	-0.00177
	(A1 * A2 * !C1 * !D1 * !Y)	0.00116	0.00116	0.00116
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00165	-0.00164	-0.00164
	(A1 * !A2 * C1 * D1 * !Y)	0.00116	0.00116	0.00116
	(A1 * !A2 * C1 * D1 * !Y)	-0.00230	-0.00237	-0.00235
	(A1 * !A2 * C1 * !D1 * !Y)	0.00116	0.00116	0.00116
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00230	-0.00237	-0.00235
	(A1 * !A2 * !C1 * D1 * !Y)	0.00117	0.00117	0.00116
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00217	-0.00222	-0.00221
	(!A1 * C1 * D1 * !Y)	0.00116	0.00116	0.00116
	(!A1 * C1 * D1 * !Y)	-0.00230	-0.00237	-0.00235
	(!A1 * C1 * !D1 * !Y)	0.00116	0.00116	0.00116
	(!A1 * C1 * !D1 * !Y)	-0.00230	-0.00237	-0.00235
	(!A1 * !C1 * D1 * !Y)	0.00117	0.00117	0.00116
	(!A1 * !C1 * D1 * !Y)	-0.00217	-0.00222	-0.00222

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00221	0.00222	0.00223
	(A1 * A2 * C1 * D1 * !Y)	-0.00381	-0.00382	-0.00381
	(A1 * A2 * C1 * !D1 * !Y)	0.00222	0.00222	0.00222
	(A1 * A2 * C1 * !D1 * !Y)	-0.00373	-0.00373	-0.00374
	(A1 * A2 * !C1 * D1 * !Y)	0.00223	0.00228	0.00224
	(A1 * A2 * !C1 * D1 * !Y)	-0.00362	-0.00360	-0.00360
	(A1 * A2 * !C1 * !D1 * !Y)	0.00221	0.00222	0.00222
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00338	-0.00339	-0.00339
	(A1 * !A2 * C1 * D1 * !Y)	0.00223	0.00224	0.00222
	(A1 * !A2 * C1 * D1 * !Y)	-0.00477	-0.00490	-0.00486
	(A1 * !A2 * C1 * !D1 * !Y)	0.00223	0.00224	0.00222
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00477	-0.00490	-0.00485
	(A1 * !A2 * !C1 * D1 * !Y)	0.00224	0.00224	0.00223
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00444	-0.00452	-0.00454
	(!A1 * C1 * D1 * !Y)	0.00223	0.00224	0.00222
	(!A1 * C1 * D1 * !Y)	-0.00477	-0.00490	-0.00486
	(!A1 * C1 * !D1 * !Y)	0.00223	0.00224	0.00222
	(!A1 * C1 * !D1 * !Y)	-0.00477	-0.00490	-0.00486
	(!A1 * !C1 * D1 * !Y)	0.00224	0.00224	0.00223
	(!A1 * !C1 * D1 * !Y)	-0.00444	-0.00453	-0.00454

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)**	-0.00102	-0.00102	-0.00102
	(A1 * A2 * C1 * D1 * !Y)	0.00094	0.00094	0.00094
	(A1 * A2 * C1 * !D1 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * A2 * C1 * !D1 * !Y)	0.00092	0.00092	0.00092
	(A1 * A2 * !C1 * D1 * !Y)	-0.00101	-0.00102	-0.00102
	(A1 * A2 * !C1 * D1 * !Y)	0.00089	0.00088	0.00088
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * !C1 * !D1 * !Y)	0.00087	0.00087	0.00087
	(A1 * !A2 * C1 * D1 * !Y)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * C1 * D1 * !Y)	0.00119	0.00119	0.00118
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00101	-0.00102	-0.00101
	(A1 * !A2 * C1 * !D1 * !Y)	0.00118	0.00119	0.00118
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00101	-0.00101	-0.00101
	(A1 * !A2 * !C1 * D1 * !Y)	0.00110	0.00110	0.00111
	(!A1 * C1 * D1 * !Y)	-0.00101	-0.00102	-0.00101
	(!A1 * C1 * D1 * !Y)	0.00119	0.00119	0.00118
	(!A1 * C1 * !D1 * !Y)	-0.00101	-0.00102	-0.00101
	(!A1 * C1 * !D1 * !Y)	0.00118	0.00119	0.00118
	(!A1 * !C1 * D1 * !Y)	-0.00101	-0.00101	-0.00101
	(!A1 * !C1 * D1 * !Y)	0.00110	0.00110	0.00111

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00116	-0.00116	-0.00116
	(A1 * A2 * C1 * D1 * !Y)	0.00186	0.00187	0.00186
	(A1 * A2 * C1 * !D1 * !Y)	-0.00115	-0.00116	-0.00116
	(A1 * A2 * C1 * !D1 * !Y)	0.00182	0.00183	0.00182
	(A1 * A2 * !C1 * D1 * !Y)	-0.00116	-0.00116	-0.00116
	(A1 * A2 * !C1 * D1 * !Y)	0.00179	0.00177	0.00177
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00113	-0.00113	-0.00112
	(A1 * A2 * !C1 * !D1 * !Y)	0.00171	0.00171	0.00170
	(A1 * !A2 * C1 * D1 * !Y)	-0.00115	-0.00116	-0.00116
	(A1 * !A2 * C1 * D1 * !Y)	0.00235	0.00237	0.00235
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00115	-0.00116	-0.00116
	(A1 * !A2 * C1 * !D1 * !Y)	0.00235	0.00237	0.00235
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !C1 * D1 * !Y)	0.00221	0.00222	0.00221
	(!A1 * C1 * D1 * !Y)	-0.00115	-0.00116	-0.00116
	(!A1 * C1 * D1 * !Y)	0.00235	0.00237	0.00235
	(!A1 * C1 * !D1 * !Y)	-0.00116	-0.00116	-0.00116
	(!A1 * C1 * !D1 * !Y)	0.00236	0.00237	0.00235
	(!A1 * !C1 * D1 * !Y)	-0.00116	-0.00117	-0.00116
	(!A1 * !C1 * D1 * !Y)	0.00221	0.00222	0.00222

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00221	-0.00222	-0.00222
	(A1 * A2 * C1 * D1 * !Y)	0.00381	0.00382	0.00381
	(A1 * A2 * C1 * !D1 * !Y)	-0.00222	-0.00222	-0.00222
	(A1 * A2 * C1 * !D1 * !Y)	0.00373	0.00373	0.00374
	(A1 * A2 * !C1 * D1 * !Y)	-0.00223	-0.00223	-0.00223
	(A1 * A2 * !C1 * D1 * !Y)	0.00362	0.00360	0.00360
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00220	-0.00219	-0.00219
	(A1 * A2 * !C1 * !D1 * !Y)	0.00346	0.00345	0.00347
	(A1 * !A2 * C1 * D1 * !Y)	-0.00222	-0.00223	-0.00222
	(A1 * !A2 * C1 * D1 * !Y)	0.00487	0.00490	0.00486
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00222	-0.00223	-0.00222
	(A1 * !A2 * C1 * !D1 * !Y)	0.00487	0.00490	0.00485
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00224	-0.00223	-0.00223
	(A1 * !A2 * !C1 * D1 * !Y)	0.00455	0.00452	0.00454
	(!A1 * C1 * D1 * !Y)	-0.00222	-0.00223	-0.00222
	(!A1 * C1 * D1 * !Y)	0.00487	0.00490	0.00486
	(!A1 * C1 * !D1 * !Y)	-0.00221	-0.00223	-0.00222
	(!A1 * C1 * !D1 * !Y)	0.00482	0.00490	0.00486
	(!A1 * !C1 * D1 * !Y)	-0.00223	-0.00223	-0.00223
	(!A1 * !C1 * D1 * !Y)	0.00453	0.00453	0.00454

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)**	0.00107	0.00107	0.00107
	(A1 * B1 * D1 * !Y)	-0.00084	-0.00083	-0.00083
	(A1 * B1 * !D1 * !Y)	0.00107	0.00107	0.00107
	(A1 * B1 * !D1 * !Y)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !B1 * D1 * !Y)	0.00108	0.00108	0.00107
	(A1 * A2 * !B1 * D1 * !Y)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * !B1 * !D1 * !Y)	0.00108	0.00108	0.00107
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00078	-0.00078	-0.00079
	(A1 * !A2 * !B1 * D1 * !Y)	0.00107	0.00107	0.00107
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00111	-0.00114	-0.00114
	(!A1 * B1 * D1 * !Y)	0.00107	0.00107	0.00107
	(!A1 * B1 * D1 * !Y)	-0.00084	-0.00083	-0.00083
	(!A1 * B1 * !D1 * !Y)	0.00108	0.00107	0.00107
	(!A1 * B1 * !D1 * !Y)	-0.00079	-0.00079	-0.00079
	(!A1 * !B1 * D1 * !Y)	0.00107	0.00107	0.00107
	(!A1 * !B1 * D1 * !Y)	-0.00111	-0.00115	-0.00114

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00111	0.00112	0.00112
	(A1 * B1 * D1 * !Y)	-0.00175	-0.00176	-0.00176
	(A1 * B1 * !D1 * !Y)	0.00111	0.00111	0.00110
	(A1 * B1 * !D1 * !Y)	-0.00169	-0.00169	-0.00169
	(A1 * A2 * !B1 * D1 * !Y)	0.00111	0.00112	0.00111
	(A1 * A2 * !B1 * D1 * !Y)	-0.00185	-0.00186	-0.00185
	(A1 * A2 * !B1 * !D1 * !Y)	0.00111	0.00111	0.00110
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00168	-0.00168	-0.00168
	(A1 * !A2 * !B1 * D1 * !Y)	0.00112	0.00111	0.00110
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00238	-0.00244	-0.00242
	(!A1 * B1 * D1 * !Y)	0.00111	0.00112	0.00112
	(!A1 * B1 * D1 * !Y)	-0.00178	-0.00176	-0.00176
	(!A1 * B1 * !D1 * !Y)	0.00111	0.00111	0.00110
	(!A1 * B1 * !D1 * !Y)	-0.00170	-0.00169	-0.00170
	(!A1 * !B1 * D1 * !Y)	0.00112	0.00111	0.00110
	(!A1 * !B1 * D1 * !Y)	-0.00238	-0.00244	-0.00242

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00216	0.00216	0.00216
	(A1 * B1 * D1 * !Y)	-0.00347	-0.00347	-0.00347
	(A1 * B1 * !D1 * !Y)	0.00216	0.00216	0.00214
	(A1 * B1 * !D1 * !Y)	-0.00329	-0.00331	-0.00333
	(A1 * A2 * !B1 * D1 * !Y)	0.00218	0.00216	0.00215
	(A1 * A2 * !B1 * D1 * !Y)	-0.00362	-0.00364	-0.00363
	(A1 * A2 * !B1 * !D1 * !Y)	0.00218	0.00218	0.00214
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00328	-0.00328	-0.00331
	(A1 * !A2 * !B1 * D1 * !Y)	0.00217	0.00214	0.00213
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00462	-0.00475	-0.00472
	(!A1 * B1 * D1 * !Y)	0.00216	0.00216	0.00216
	(!A1 * B1 * D1 * !Y)	-0.00348	-0.00347	-0.00348
	(!A1 * B1 * !D1 * !Y)	0.00217	0.00217	0.00214
	(!A1 * B1 * !D1 * !Y)	-0.00331	-0.00331	-0.00333
	(!A1 * !B1 * D1 * !Y)	0.00217	0.00215	0.00213
	(!A1 * !B1 * D1 * !Y)	-0.00462	-0.00476	-0.00472

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)**	-0.00107	-0.00107	-0.00107
	(A1 * B1 * D1 * !Y)	0.00084	0.00083	0.00083
	(A1 * B1 * !D1 * !Y)	-0.00107	-0.00106	-0.00106
	(A1 * B1 * !D1 * !Y)	0.00081	0.00080	0.00081
	(A1 * A2 * !B1 * D1 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * A2 * !B1 * D1 * !Y)	0.00088	0.00088	0.00088
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00099	-0.00100	-0.00105
	(A1 * A2 * !B1 * !D1 * !Y)	0.00084	0.00084	0.00080
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00107	-0.00107	-0.00106
	(A1 * !A2 * !B1 * D1 * !Y)	0.00114	0.00114	0.00114
	(!A1 * B1 * D1 * !Y)	-0.00107	-0.00107	-0.00107
	(!A1 * B1 * D1 * !Y)	0.00084	0.00083	0.00083
	(!A1 * B1 * !D1 * !Y)	-0.00106	-0.00106	-0.00106
	(!A1 * B1 * !D1 * !Y)	0.00080	0.00080	0.00081
	(!A1 * !B1 * D1 * !Y)	-0.00107	-0.00107	-0.00106
	(!A1 * !B1 * D1 * !Y)	0.00114	0.00115	0.00114

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00110	-0.00111	-0.00110
	(A1 * B1 * D1 * !Y)	0.00175	0.00176	0.00176
	(A1 * B1 * !D1 * !Y)	-0.00110	-0.00110	-0.00110
	(A1 * B1 * !D1 * !Y)	0.00171	0.00171	0.00172
	(A1 * A2 * !B1 * D1 * !Y)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * !B1 * D1 * !Y)	0.00185	0.00186	0.00185
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00098	-0.00099	-0.00105
	(A1 * A2 * !B1 * !D1 * !Y)	0.00176	0.00175	0.00173
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00111	-0.00111	-0.00110
	(A1 * !A2 * !B1 * D1 * !Y)	0.00243	0.00244	0.00242
	(!A1 * B1 * D1 * !Y)	-0.00111	-0.00111	-0.00110
	(!A1 * B1 * D1 * !Y)	0.00178	0.00176	0.00176
	(!A1 * B1 * !D1 * !Y)	-0.00110	-0.00110	-0.00110
	(!A1 * B1 * !D1 * !Y)	0.00172	0.00171	0.00172
	(!A1 * !B1 * D1 * !Y)	-0.00111	-0.00111	-0.00110
	(!A1 * !B1 * D1 * !Y)	0.00242	0.00244	0.00242

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00214	-0.00214	-0.00214
	(A1 * B1 * D1 * !Y)	0.00347	0.00347	0.00347
	(A1 * B1 * !D1 * !Y)	-0.00212	-0.00212	-0.00213
	(A1 * B1 * !D1 * !Y)	0.00338	0.00338	0.00338
	(A1 * A2 * !B1 * D1 * !Y)	-0.00215	-0.00216	-0.00215
	(A1 * A2 * !B1 * D1 * !Y)	0.00362	0.00364	0.00363
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00195	-0.00196	-0.00205
	(A1 * A2 * !B1 * !D1 * !Y)	0.00343	0.00340	0.00338
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00216	-0.00214	-0.00213
	(A1 * !A2 * !B1 * D1 * !Y)	0.00475	0.00475	0.00472
	(!A1 * B1 * D1 * !Y)	-0.00214	-0.00214	-0.00214
	(!A1 * B1 * D1 * !Y)	0.00348	0.00347	0.00348
	(!A1 * B1 * !D1 * !Y)	-0.00212	-0.00212	-0.00212
	(!A1 * B1 * !D1 * !Y)	0.00340	0.00338	0.00339
	(!A1 * !B1 * D1 * !Y)	-0.00215	-0.00215	-0.00213
	(!A1 * !B1 * D1 * !Y)	0.00474	0.00476	0.00472

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00120	0.00120	0.00120
	(A1 * C1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * !C1 * !Y)	0.00120	0.00120	0.00120
	(A1 * B1 * !C1 * !Y)	-0.00073	-0.00072	-0.00072
	(A1 * A2 * !B1 * !C1 * !Y)	0.00120	0.00120	0.00120
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00073	-0.00072	-0.00072
	(!A1 * C1 * !Y)	0.00120	0.00120	0.00120
	(!A1 * C1 * !Y)	-0.00073	-0.00072	-0.00072
	(!A1 * B1 * !C1 * !Y)	0.00121	0.00120	0.00120
	(!A1 * B1 * !C1 * !Y)	-0.00073	-0.00072	-0.00072

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00138	0.00138	0.00138
	(A1 * C1 * !Y)	-0.00147	-0.00147	-0.00147
	(A1 * B1 * !C1 * !Y)	0.00138	0.00138	0.00138
	(A1 * B1 * !C1 * !Y)	-0.00147	-0.00147	-0.00147
	(A1 * A2 * !B1 * !C1 * !Y)	0.00138	0.00138	0.00138
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00147	-0.00147	-0.00147
	(!A1 * C1 * !Y)	0.00138	0.00138	0.00138
	(!A1 * C1 * !Y)	-0.00148	-0.00147	-0.00147
	(!A1 * B1 * !C1 * !Y)	0.00138	0.00138	0.00138
	(!A1 * B1 * !C1 * !Y)	-0.00148	-0.00147	-0.00147
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00273	0.00273	0.00273
	(A1 * C1 * !Y)	-0.00290	-0.00290	-0.00289
	(A1 * B1 * !C1 * !Y)	0.00274	0.00273	0.00273
	(A1 * B1 * !C1 * !Y)	-0.00291	-0.00289	-0.00289
	(A1 * A2 * !B1 * !C1 * !Y)	0.00276	0.00274	0.00273
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00293	-0.00290	-0.00289
	(!A1 * C1 * !Y)	0.00274	0.00273	0.00273
	(!A1 * C1 * !Y)	-0.00291	-0.00290	-0.00290
	(!A1 * B1 * !C1 * !Y)	0.00272	0.00273	0.00273
	(!A1 * B1 * !C1 * !Y)	-0.00287	-0.00289	-0.00289

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00117	-0.00118	-0.00120
	(A1 * C1 * !Y)	0.00075	0.00075	0.00073
	(A1 * B1 * !C1 * !Y)	-0.00110	-0.00110	-0.00119
	(A1 * B1 * !C1 * !Y)	0.00080	0.00079	0.00074
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00096	-0.00097	-0.00115
	(A1 * A2 * !B1 * !C1 * !Y)	0.00089	0.00088	0.00076
	(!A1 * C1 * !Y)	-0.00118	-0.00118	-0.00120
	(!A1 * C1 * !Y)	0.00075	0.00075	0.00073
	(!A1 * B1 * !C1 * !Y)	-0.00110	-0.00110	-0.00119
	(!A1 * B1 * !C1 * !Y)	0.00079	0.00079	0.00074
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00128	-0.00129	-0.00138
	(A1 * C1 * !Y)	0.00157	0.00156	0.00149
	(A1 * B1 * !C1 * !Y)	-0.00113	-0.00114	-0.00135
	(A1 * B1 * !C1 * !Y)	0.00165	0.00164	0.00149
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00085	-0.00088	-0.00127
	(A1 * A2 * !B1 * !C1 * !Y)	0.00181	0.00181	0.00155
	(!A1 * C1 * !Y)	-0.00128	-0.00129	-0.00138
	(!A1 * C1 * !Y)	0.00157	0.00156	0.00149
	(!A1 * B1 * !C1 * !Y)	-0.00113	-0.00114	-0.00135
	(!A1 * B1 * !C1 * !Y)	0.00164	0.00164	0.00150
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00258	-0.00259	-0.00273
	(A1 * C1 * !Y)	0.00304	0.00303	0.00293
	(A1 * B1 * !C1 * !Y)	-0.00226	-0.00227	-0.00267
	(A1 * B1 * !C1 * !Y)	0.00324	0.00322	0.00295
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00174	-0.00177	-0.00252
	(A1 * A2 * !B1 * !C1 * !Y)	0.00354	0.00353	0.00305
	(!A1 * C1 * !Y)	-0.00259	-0.00259	-0.00273
	(!A1 * C1 * !Y)	0.00305	0.00303	0.00293
	(!A1 * B1 * !C1 * !Y)	-0.00225	-0.00227	-0.00267
	(!A1 * B1 * !C1 * !Y)	0.00323	0.00322	0.00296

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111o_1	14.38560
sky130_fd_sc_hs__a2111o_2	15.98400
sky130_fd_sc_hs__a2111o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__a2111o_1	0.00239	0.00248	0.00240	0.00245	0.00243	0.36015
sky130_fd_sc_hs__a2111o_2	0.00265	0.00273	0.00261	0.00269	0.00284	0.72224
sky130_fd_sc_hs__a2111o_4	0.00446	0.00432	0.00458	0.00460	0.00459	1.37867

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	0.00015	0.00030
sky130_fd_sc_hs__a2111o_2	0.00000	0.00019	0.00039
sky130_fd_sc_hs__a2111o_4	0.00000	0.00039	0.00079

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)	0.18346	1.22850	8.79275
	A2->X (RR)	0.18948	1.23494	8.96204
	B1->X (RR)	0.15113	1.17585	8.70706
	C1->X (RR)	0.14870	1.16467	8.65850
	D1->X (RR)	0.14258	1.14702	8.58987
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.18052	1.10075	9.04179
	A2->X (RR)	0.18609	1.09713	9.16425
	B1->X (RR)	0.14118	1.04015	8.93028
	C1->X (RR)	0.13808	1.02793	8.88026
	D1->X (RR)	0.13415	1.01493	8.83233
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.19320	1.00488	9.02781
	A2->X (RR)	0.20098	1.00499	9.17811
	B1->X (RR)	0.14066	0.92424	8.89554
	C1->X (RR)	0.13810	0.91348	8.85554
	D1->X (RR)	0.13214	0.89709	8.79057

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	1.08844	1.97458	7.63640
	A2->X (FF)	1.20508	2.10174	7.81332
	B1->X (FF)	1.13911	2.00414	7.79861
	C1->X (FF)	1.05892	1.91623	7.81353
	D1->X (FF)	0.93174	1.71964	7.14313
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	1.38099	2.30574	8.29610
	A2->X (FF)	1.49974	2.43811	8.46986
	B1->X (FF)	1.43726	2.34181	8.46898
	C1->X (FF)	1.34693	2.23829	8.51357
	D1->X (FF)	1.22023	2.05038	7.96182
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	1.36023	2.22582	8.16524
	A2->X (FF)	1.53793	2.41700	8.39012
	B1->X (FF)	1.48800	2.33588	8.42829
	C1->X (FF)	1.40007	2.23700	8.48785
	D1->X (FF)	1.20130	1.96412	7.77870

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.00798	0.00794	0.00786
	A1	0.00369	0.00366	0.00359
	A2	0.00840	0.00839	0.00831
	A2	0.00368	0.00371	0.00362
	B1	0.00732	0.00729	0.00717
	B1	0.00307	0.00303	0.00293
	C1	0.00656	0.00652	0.00639
	C1	0.00265	0.00262	0.00251
	D1	0.00572	0.00561	0.00550
	D1	0.00219	0.00208	0.00197
sky130_fd_sc_hs__a2111o_2	A1	0.01024	0.01034	0.01030
	A1	0.00548	0.00557	0.00560
	A2	0.01084	0.01097	0.01097
	A2	0.00551	0.00564	0.00570
	B1	0.00956	0.00965	0.00958
	B1	0.00478	0.00487	0.00486
	C1	0.00865	0.00874	0.00864
	C1	0.00423	0.00434	0.00425
	D1	0.00789	0.00794	0.00782
	D1	0.00380	0.00385	0.00378

sky130_fd_sc_hs__a2111o_4	**A1**	0.01906	0.01926	0.01931
	A1	0.01082	0.01103	0.01118
	A2	0.02016	0.02046	0.02059
	A2	0.01082	0.01112	0.01139
	B1	0.01822	0.01839	0.01835
	B1	0.00963	0.00981	0.00987
	C1	0.01653	0.01673	0.01663
	C1	0.00870	0.00894	0.00893
	D1	0.01442	0.01457	0.01444
	D1	0.00749	0.00763	0.00763

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00275	0.00280	0.00329
	A1	0.00715	0.00721	0.00721
	A2	0.00312	0.00319	0.00324
	A2	0.00793	0.00800	0.00799
	B1	0.00305	0.00312	0.00315
	B1	0.00731	0.00739	0.00739
	C1	0.00276	0.00285	0.00354
	C1	0.00692	0.00700	0.00698
	D1	0.00310	0.00313	0.00366
	D1	0.00659	0.00662	0.00660

sky130_fd_sc_hs__a2111o_2	**A1**	0.00455	0.00474	0.00492
	A1	0.00946	0.00966	0.00977
	A2	0.00482	0.00506	0.00534
	A2	0.01027	0.01050	0.01062
	B1	0.00486	0.00508	0.00534
	B1	0.00965	0.00987	0.00998
	C1	0.00486	0.00508	0.00523
	C1	0.00925	0.00947	0.00956
	D1	0.00447	0.00467	0.00666
	D1	0.00884	0.00900	0.00906
sky130_fd_sc_hs__a2111o_4	**A1**	0.00853	0.00899	0.00943
	A1	0.01707	0.01753	0.01785
	A2	0.00925	0.00976	0.01019
	A2	0.01880	0.01930	0.01965
	B1	0.00920	0.00970	0.01007
	B1	0.01784	0.01833	0.01865
	C1	0.00926	0.00974	0.01009
	C1	0.01702	0.01749	0.01780
	D1	0.00839	0.00884	0.01230
	D1	0.01610	0.01650	0.01674

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)**	0.00101	0.00101	0.00101
	(A2 * B1 * D1 * X)	-0.00105	-0.00109	-0.00108
	(A2 * B1 * C1 * !D1 * X)	0.00101	0.00101	0.00101
	(A2 * B1 * C1 * !D1 * X)	-0.00105	-0.00109	-0.00108
	(A2 * B1 * !C1 * !D1 * X)	0.00101	0.00101	0.00101
	(A2 * B1 * !C1 * !D1 * X)	-0.00105	-0.00109	-0.00108
	(A2 * !B1 * C1 * D1 * X)	0.00102	0.00101	0.00101
	(A2 * !B1 * C1 * D1 * X)	-0.00101	-0.00104	-0.00103
	(A2 * !B1 * C1 * !D1 * X)	0.00102	0.00101	0.00101
	(A2 * !B1 * C1 * !D1 * X)	-0.00101	-0.00104	-0.00103
	(A2 * !B1 * !C1 * D1 * X)	0.00101	0.00102	0.00101
	(A2 * !B1 * !C1 * D1 * X)	-0.00099	-0.00102	-0.00102
	(!A2 * B1 * D1 * X)	0.00096	0.00096	0.00096
	(!A2 * B1 * D1 * X)	-0.00111	-0.00111	-0.00111
	(!A2 * B1 * C1 * !D1 * X)	0.00096	0.00097	0.00096
	(!A2 * B1 * C1 * !D1 * X)	-0.00111	-0.00112	-0.00111
	(!A2 * B1 * !C1 * !D1 * X)	0.00095	0.00096	0.00096
	(!A2 * B1 * !C1 * !D1 * X)	-0.00111	-0.00111	-0.00111
	(!A2 * !B1 * C1 * D1 * X)	0.00096	0.00096	0.00096
	(!A2 * !B1 * C1 * D1 * X)	-0.00111	-0.00111	-0.00111
	(!A2 * !B1 * C1 * !D1 * X)	0.00096	0.00096	0.00096
	(!A2 * !B1 * C1 * !D1 * X)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * !C1 * D1 * X)	0.00096	0.00097	0.00096
	(!A2 * !B1 * !C1 * D1 * X)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00047	0.00047	0.00046
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00130	-0.00131	-0.00132

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00104	0.00104	0.00103
	(A2 * B1 * D1 * X)	-0.00119	-0.00122	-0.00121
	(A2 * B1 * C1 * !D1 * X)	0.00104	0.00104	0.00103
	(A2 * B1 * C1 * !D1 * X)	-0.00119	-0.00122	-0.00121
	(A2 * B1 * !C1 * !D1 * X)	0.00104	0.00104	0.00103
	(A2 * B1 * !C1 * !D1 * X)	-0.00119	-0.00122	-0.00121
	(A2 * !B1 * C1 * D1 * X)	0.00103	0.00105	0.00103
	(A2 * !B1 * C1 * D1 * X)	-0.00113	-0.00116	-0.00116
	(A2 * !B1 * C1 * !D1 * X)	0.00103	0.00104	0.00103
	(A2 * !B1 * C1 * !D1 * X)	-0.00113	-0.00116	-0.00116
	(A2 * !B1 * !C1 * D1 * X)	0.00104	0.00104	0.00103
	(A2 * !B1 * !C1 * D1 * X)	-0.00113	-0.00114	-0.00114
	(!A2 * B1 * D1 * X)	0.00097	0.00098	0.00098
	(!A2 * B1 * D1 * X)	-0.00126	-0.00126	-0.00126
	(!A2 * B1 * C1 * !D1 * X)	0.00097	0.00098	0.00098
	(!A2 * B1 * C1 * !D1 * X)	-0.00126	-0.00126	-0.00126
	(!A2 * B1 * !C1 * !D1 * X)	0.00097	0.00098	0.00098
	(!A2 * B1 * !C1 * !D1 * X)	-0.00125	-0.00126	-0.00126
	(!A2 * !B1 * C1 * D1 * X)	0.00097	0.00098	0.00098
	(!A2 * !B1 * C1 * D1 * X)	-0.00126	-0.00126	-0.00126
	(!A2 * !B1 * C1 * !D1 * X)	0.00097	0.00098	0.00098
	(!A2 * !B1 * C1 * !D1 * X)	-0.00125	-0.00126	-0.00126
	(!A2 * !B1 * !C1 * D1 * X)	0.00097	0.00098	0.00098
	(!A2 * !B1 * !C1 * D1 * X)	-0.00125	-0.00126	-0.00126
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00041	0.00041	0.00040
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00146	-0.00147	-0.00148

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00171	0.00172	0.00170
	(A2 * B1 * D1 * X)	-0.00216	-0.00221	-0.00219
	(A2 * B1 * C1 * !D1 * X)	0.00171	0.00172	0.00170
	(A2 * B1 * C1 * !D1 * X)	-0.00216	-0.00221	-0.00219
	(A2 * B1 * !C1 * !D1 * X)	0.00171	0.00172	0.00170
	(A2 * B1 * !C1 * !D1 * X)	-0.00216	-0.00221	-0.00219
	(A2 * !B1 * C1 * D1 * X)	0.00170	0.00172	0.00170
	(A2 * !B1 * C1 * D1 * X)	-0.00203	-0.00210	-0.00209
	(A2 * !B1 * C1 * !D1 * X)	0.00170	0.00172	0.00170
	(A2 * !B1 * C1 * !D1 * X)	-0.00203	-0.00210	-0.00209
	(A2 * !B1 * !C1 * D1 * X)	0.00170	0.00172	0.00171
	(A2 * !B1 * !C1 * D1 * X)	-0.00200	-0.00207	-0.00206
	(!A2 * B1 * D1 * X)	0.00161	0.00162	0.00161
	(!A2 * B1 * D1 * X)	-0.00227	-0.00228	-0.00227
	(!A2 * B1 * C1 * !D1 * X)	0.00161	0.00162	0.00161
	(!A2 * B1 * C1 * !D1 * X)	-0.00227	-0.00228	-0.00227
	(!A2 * B1 * !C1 * !D1 * X)	0.00161	0.00162	0.00161
	(!A2 * B1 * !C1 * !D1 * X)	-0.00226	-0.00228	-0.00227
	(!A2 * !B1 * C1 * D1 * X)	0.00161	0.00162	0.00161
	(!A2 * !B1 * C1 * D1 * X)	-0.00226	-0.00228	-0.00227
	(!A2 * !B1 * C1 * !D1 * X)	0.00161	0.00162	0.00161
	(!A2 * !B1 * C1 * !D1 * X)	-0.00226	-0.00228	-0.00227
	(!A2 * !B1 * !C1 * D1 * X)	0.00161	0.00162	0.00161
	(!A2 * !B1 * !C1 * D1 * X)	-0.00226	-0.00228	-0.00227
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00070	0.00070	0.00067
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00259	-0.00260	-0.00265

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)**	-0.00101	-0.00101	-0.00101
	(A2 * B1 * D1 * X)	0.00107	0.00109	0.00108
	(A2 * B1 * C1 * !D1 * X)	-0.00101	-0.00101	-0.00101
	(A2 * B1 * C1 * !D1 * X)	0.00107	0.00109	0.00108
	(A2 * B1 * !C1 * !D1 * X)	-0.00101	-0.00101	-0.00101
	(A2 * B1 * !C1 * !D1 * X)	0.00107	0.00109	0.00108
	(A2 * !B1 * C1 * D1 * X)	-0.00101	-0.00101	-0.00101
	(A2 * !B1 * C1 * D1 * X)	0.00103	0.00104	0.00103
	(A2 * !B1 * C1 * !D1 * X)	-0.00101	-0.00101	-0.00101
	(A2 * !B1 * C1 * !D1 * X)	0.00103	0.00104	0.00103
	(A2 * !B1 * !C1 * D1 * X)	-0.00101	-0.00101	-0.00101
	(A2 * !B1 * !C1 * D1 * X)	0.00101	0.00102	0.00102
	(!A2 * B1 * D1 * X)	-0.00093	-0.00096	-0.00096
	(!A2 * B1 * D1 * X)	0.00111	0.00112	0.00111
	(!A2 * B1 * C1 * !D1 * X)	-0.00094	-0.00097	-0.00096
	(!A2 * B1 * C1 * !D1 * X)	0.00112	0.00112	0.00111
	(!A2 * B1 * !C1 * !D1 * X)	-0.00094	-0.00096	-0.00096
	(!A2 * B1 * !C1 * !D1 * X)	0.00112	0.00112	0.00111
	(!A2 * !B1 * C1 * D1 * X)	-0.00094	-0.00096	-0.00096
	(!A2 * !B1 * C1 * D1 * X)	0.00112	0.00111	0.00111
	(!A2 * !B1 * C1 * !D1 * X)	-0.00094	-0.00096	-0.00096
	(!A2 * !B1 * C1 * !D1 * X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * !C1 * D1 * X)	-0.00094	-0.00096	-0.00096
	(!A2 * !B1 * !C1 * D1 * X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00132	0.00132	0.00132

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00103	-0.00104	-0.00103
	(A2 * B1 * D1 * X)	0.00121	0.00122	0.00121
	(A2 * B1 * C1 * !D1 * X)	-0.00103	-0.00104	-0.00103
	(A2 * B1 * C1 * !D1 * X)	0.00121	0.00122	0.00121
	(A2 * B1 * !C1 * !D1 * X)	-0.00103	-0.00104	-0.00103
	(A2 * B1 * !C1 * !D1 * X)	0.00120	0.00122	0.00121
	(A2 * !B1 * C1 * D1 * X)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * C1 * D1 * X)	0.00117	0.00116	0.00116
	(A2 * !B1 * C1 * !D1 * X)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * C1 * !D1 * X)	0.00117	0.00116	0.00116
	(A2 * !B1 * !C1 * D1 * X)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * !C1 * D1 * X)	0.00113	0.00114	0.00114
	(!A2 * B1 * D1 * X)	-0.00096	-0.00098	-0.00098
	(!A2 * B1 * D1 * X)	0.00126	0.00127	0.00126
	(!A2 * B1 * C1 * !D1 * X)	-0.00095	-0.00098	-0.00098
	(!A2 * B1 * C1 * !D1 * X)	0.00126	0.00127	0.00126
	(!A2 * B1 * !C1 * !D1 * X)	-0.00095	-0.00098	-0.00098
	(!A2 * B1 * !C1 * !D1 * X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * D1 * X)	-0.00096	-0.00098	-0.00098
	(!A2 * !B1 * C1 * D1 * X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * !D1 * X)	-0.00095	-0.00098	-0.00098
	(!A2 * !B1 * C1 * !D1 * X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * !C1 * D1 * X)	-0.00095	-0.00098	-0.00098
	(!A2 * !B1 * !C1 * D1 * X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00148	0.00148	0.00149

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00170	-0.00171	-0.00170
	(A2 * B1 * D1 * X)	0.00218	0.00221	0.00219
	(A2 * B1 * C1 * !D1 * X)	-0.00170	-0.00171	-0.00170
	(A2 * B1 * C1 * !D1 * X)	0.00218	0.00221	0.00219
	(A2 * B1 * !C1 * !D1 * X)	-0.00170	-0.00171	-0.00170
	(A2 * B1 * !C1 * !D1 * X)	0.00218	0.00221	0.00219
	(A2 * !B1 * C1 * D1 * X)	-0.00170	-0.00170	-0.00170
	(A2 * !B1 * C1 * D1 * X)	0.00208	0.00210	0.00209
	(A2 * !B1 * C1 * !D1 * X)	-0.00170	-0.00170	-0.00170
	(A2 * !B1 * C1 * !D1 * X)	0.00208	0.00210	0.00209
	(A2 * !B1 * !C1 * D1 * X)	-0.00170	-0.00171	-0.00170
	(A2 * !B1 * !C1 * D1 * X)	0.00205	0.00207	0.00206
	(!A2 * B1 * D1 * X)	-0.00158	-0.00162	-0.00161
	(!A2 * B1 * D1 * X)	0.00228	0.00229	0.00227
	(!A2 * B1 * C1 * !D1 * X)	-0.00158	-0.00162	-0.00161
	(!A2 * B1 * C1 * !D1 * X)	0.00228	0.00229	0.00227
	(!A2 * B1 * !C1 * !D1 * X)	-0.00157	-0.00162	-0.00161
	(!A2 * B1 * !C1 * !D1 * X)	0.00228	0.00229	0.00227
	(!A2 * !B1 * C1 * D1 * X)	-0.00158	-0.00162	-0.00161
	(!A2 * !B1 * C1 * D1 * X)	0.00228	0.00229	0.00227
	(!A2 * !B1 * C1 * !D1 * X)	-0.00157	-0.00162	-0.00161
	(!A2 * !B1 * C1 * !D1 * X)	0.00227	0.00229	0.00227
	(!A2 * !B1 * !C1 * D1 * X)	-0.00157	-0.00162	-0.00161
	(!A2 * !B1 * !C1 * D1 * X)	0.00227	0.00229	0.00227
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00065	-0.00065	-0.00065
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00265	0.00265	0.00265

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)**	0.00092	0.00092	0.00092
	(A1 * B1 * D1 * X)	-0.00110	-0.00113	-0.00112
	(A1 * B1 * C1 * !D1 * X)	0.00092	0.00092	0.00092
	(A1 * B1 * C1 * !D1 * X)	-0.00110	-0.00113	-0.00112
	(A1 * B1 * !C1 * !D1 * X)	0.00092	0.00092	0.00092
	(A1 * B1 * !C1 * !D1 * X)	-0.00110	-0.00113	-0.00112
	(A1 * !B1 * C1 * D1 * X)	0.00091	0.00093	0.00092
	(A1 * !B1 * C1 * D1 * X)	-0.00104	-0.00107	-0.00107
	(A1 * !B1 * C1 * !D1 * X)	0.00091	0.00093	0.00092
	(A1 * !B1 * C1 * !D1 * X)	-0.00104	-0.00107	-0.00107
	(A1 * !B1 * !C1 * D1 * X)	0.00091	0.00092	0.00092
	(A1 * !B1 * !C1 * D1 * X)	-0.00102	-0.00105	-0.00105
	(!A1 * B1 * X)	0.00086	0.00087	0.00086
	(!A1 * B1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * !B1 * C1 * X)	0.00086	0.00087	0.00086
	(!A1 * !B1 * C1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * !B1 * !C1 * D1 * X)	0.00086	0.00087	0.00086
	(!A1 * !B1 * !C1 * D1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00075	0.00076	0.00075
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00127	-0.00128	-0.00128

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00105	0.00105	0.00104
	(A1 * B1 * D1 * X)	-0.00119	-0.00122	-0.00121
	(A1 * B1 * C1 * !D1 * X)	0.00105	0.00105	0.00104
	(A1 * B1 * C1 * !D1 * X)	-0.00119	-0.00122	-0.00121
	(A1 * B1 * !C1 * !D1 * X)	0.00105	0.00105	0.00104
	(A1 * B1 * !C1 * !D1 * X)	-0.00119	-0.00122	-0.00121
	(A1 * !B1 * C1 * D1 * X)	0.00104	0.00105	0.00104
	(A1 * !B1 * C1 * D1 * X)	-0.00113	-0.00116	-0.00116
	(A1 * !B1 * C1 * !D1 * X)	0.00104	0.00105	0.00104
	(A1 * !B1 * C1 * !D1 * X)	-0.00112	-0.00116	-0.00116
	(A1 * !B1 * !C1 * D1 * X)	0.00103	0.00105	0.00104
	(A1 * !B1 * !C1 * D1 * X)	-0.00110	-0.00114	-0.00114
	(!A1 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * B1 * X)	-0.00126	-0.00127	-0.00126
	(!A1 * !B1 * C1 * X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * C1 * X)	-0.00126	-0.00127	-0.00126
	(!A1 * !B1 * !C1 * D1 * X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * !C1 * D1 * X)	-0.00126	-0.00127	-0.00126
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00134	-0.00135	-0.00134

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00175	0.00176	0.00175
	(A1 * B1 * D1 * X)	-0.00216	-0.00222	-0.00220
	(A1 * B1 * C1 * !D1 * X)	0.00175	0.00176	0.00175
	(A1 * B1 * C1 * !D1 * X)	-0.00216	-0.00222	-0.00220
	(A1 * B1 * !C1 * !D1 * X)	0.00175	0.00176	0.00175
	(A1 * B1 * !C1 * !D1 * X)	-0.00215	-0.00222	-0.00220
	(A1 * !B1 * C1 * D1 * X)	0.00176	0.00175	0.00175
	(A1 * !B1 * C1 * D1 * X)	-0.00204	-0.00211	-0.00210
	(A1 * !B1 * C1 * !D1 * X)	0.00176	0.00175	0.00175
	(A1 * !B1 * C1 * !D1 * X)	-0.00204	-0.00211	-0.00210
	(A1 * !B1 * !C1 * D1 * X)	0.00175	0.00177	0.00175
	(A1 * !B1 * !C1 * D1 * X)	-0.00202	-0.00208	-0.00207
	(!A1 * B1 * X)	0.00166	0.00167	0.00165
	(!A1 * B1 * X)	-0.00229	-0.00229	-0.00228
	(!A1 * !B1 * C1 * X)	0.00166	0.00167	0.00165
	(!A1 * !B1 * C1 * X)	-0.00228	-0.00229	-0.00228
	(!A1 * !B1 * !C1 * D1 * X)	0.00166	0.00166	0.00165
	(!A1 * !B1 * !C1 * D1 * X)	-0.00229	-0.00228	-0.00228
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00166	0.00166	0.00165
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00229	-0.00230	-0.00229

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)**	-0.00092	-0.00092	-0.00091
	(A1 * B1 * D1 * X)	0.00113	0.00113	0.00112
	(A1 * B1 * C1 * !D1 * X)	-0.00092	-0.00092	-0.00091
	(A1 * B1 * C1 * !D1 * X)	0.00113	0.00113	0.00112
	(A1 * B1 * !C1 * !D1 * X)	-0.00092	-0.00092	-0.00091
	(A1 * B1 * !C1 * !D1 * X)	0.00113	0.00113	0.00112
	(A1 * !B1 * C1 * D1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !B1 * C1 * D1 * X)	0.00107	0.00107	0.00107
	(A1 * !B1 * C1 * !D1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !B1 * C1 * !D1 * X)	0.00107	0.00107	0.00107
	(A1 * !B1 * !C1 * D1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !B1 * !C1 * D1 * X)	0.00106	0.00105	0.00105
	(!A1 * B1 * X)	-0.00085	-0.00087	-0.00086
	(!A1 * B1 * X)	0.00116	0.00117	0.00116
	(!A1 * !B1 * C1 * X)	-0.00085	-0.00087	-0.00086
	(!A1 * !B1 * C1 * X)	0.00116	0.00117	0.00116
	(!A1 * !B1 * !C1 * D1 * X)	-0.00085	-0.00087	-0.00086
	(!A1 * !B1 * !C1 * D1 * X)	0.00116	0.00117	0.00116
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00073	-0.00075	-0.00075
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00128	0.00129	0.00128

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00104	-0.00104	-0.00104
	(A1 * B1 * D1 * X)	0.00122	0.00122	0.00121
	(A1 * B1 * C1 * !D1 * X)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * C1 * !D1 * X)	0.00122	0.00122	0.00121
	(A1 * B1 * !C1 * !D1 * X)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * !C1 * !D1 * X)	0.00122	0.00122	0.00121
	(A1 * !B1 * C1 * D1 * X)	-0.00104	-0.00104	-0.00104
	(A1 * !B1 * C1 * D1 * X)	0.00116	0.00116	0.00116
	(A1 * !B1 * C1 * !D1 * X)	-0.00104	-0.00104	-0.00104
	(A1 * !B1 * C1 * !D1 * X)	0.00116	0.00116	0.00116
	(A1 * !B1 * !C1 * D1 * X)	-0.00103	-0.00104	-0.00104
	(A1 * !B1 * !C1 * D1 * X)	0.00114	0.00114	0.00114
	(!A1 * B1 * X)	-0.00096	-0.00099	-0.00098
	(!A1 * B1 * X)	0.00126	0.00128	0.00127
	(!A1 * !B1 * C1 * X)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1 * C1 * X)	0.00126	0.00128	0.00127
	(!A1 * !B1 * !C1 * D1 * X)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1 * !C1 * D1 * X)	0.00126	0.00128	0.00127
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00088	-0.00091	-0.00090
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00134	0.00135	0.00134

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00175	-0.00176	-0.00175
	(A1 * B1 * D1 * X)	0.00220	0.00222	0.00220
	(A1 * B1 * C1 * !D1 * X)	-0.00175	-0.00176	-0.00175
	(A1 * B1 * C1 * !D1 * X)	0.00220	0.00222	0.00220
	(A1 * B1 * !C1 * !D1 * X)	-0.00175	-0.00176	-0.00175
	(A1 * B1 * !C1 * !D1 * X)	0.00220	0.00222	0.00220
	(A1 * !B1 * C1 * D1 * X)	-0.00175	-0.00175	-0.00175
	(A1 * !B1 * C1 * D1 * X)	0.00211	0.00211	0.00210
	(A1 * !B1 * C1 * !D1 * X)	-0.00175	-0.00175	-0.00175
	(A1 * !B1 * C1 * !D1 * X)	0.00211	0.00211	0.00210
	(A1 * !B1 * !C1 * D1 * X)	-0.00175	-0.00176	-0.00175
	(A1 * !B1 * !C1 * D1 * X)	0.00206	0.00208	0.00207
	(!A1 * B1 * X)	-0.00162	-0.00167	-0.00165
	(!A1 * B1 * X)	0.00229	0.00230	0.00229
	(!A1 * !B1 * C1 * X)	-0.00162	-0.00167	-0.00165
	(!A1 * !B1 * C1 * X)	0.00230	0.00230	0.00229
	(!A1 * !B1 * !C1 * D1 * X)	-0.00162	-0.00166	-0.00165
	(!A1 * !B1 * !C1 * D1 * X)	0.00230	0.00230	0.00229
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00161	-0.00166	-0.00165
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00230	0.00231	0.00229

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)**	0.00094	0.00094	0.00094
	(A1 * A2 * C1 * D1 * X)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * C1 * !D1 * X)	0.00094	0.00094	0.00094
	(A1 * A2 * C1 * !D1 * X)	-0.00082	-0.00083	-0.00082
	(A1 * A2 * !C1 * D1 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * !C1 * D1 * X)	-0.00080	-0.00079	-0.00079
	(A1 * A2 * !C1 * !D1 * X)	0.00094	0.00094	0.00093
	(A1 * A2 * !C1 * !D1 * X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * C1 * D1 * X)	0.00093	0.00094	0.00093
	(A1 * !A2 * C1 * D1 * X)	-0.00104	-0.00106	-0.00106
	(A1 * !A2 * C1 * !D1 * X)	0.00093	0.00094	0.00093
	(A1 * !A2 * C1 * !D1 * X)	-0.00104	-0.00106	-0.00106
	(A1 * !A2 * !C1 * D1 * X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !C1 * D1 * X)	-0.00096	-0.00099	-0.00099
	(!A1 * C1 * D1 * X)	0.00093	0.00094	0.00093
	(!A1 * C1 * D1 * X)	-0.00104	-0.00106	-0.00106
	(!A1 * C1 * !D1 * X)	0.00093	0.00094	0.00093
	(!A1 * C1 * !D1 * X)	-0.00104	-0.00106	-0.00106
	(!A1 * !C1 * D1 * X)	0.00093	0.00094	0.00093
	(!A1 * !C1 * D1 * X)	-0.00096	-0.00099	-0.00099

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00100	0.00100	0.00100
	(A1 * A2 * C1 * D1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * A2 * C1 * !D1 * X)	0.00100	0.00100	0.00100
	(A1 * A2 * C1 * !D1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * A2 * !C1 * D1 * X)	0.00099	0.00101	0.00100
	(A1 * A2 * !C1 * D1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * !C1 * !D1 * X)	0.00101	0.00100	0.00100
	(A1 * A2 * !C1 * !D1 * X)	-0.00084	-0.00082	-0.00082
	(A1 * !A2 * C1 * D1 * X)	0.00100	0.00101	0.00100
	(A1 * !A2 * C1 * D1 * X)	-0.00116	-0.00119	-0.00118
	(A1 * !A2 * C1 * !D1 * X)	0.00100	0.00101	0.00100
	(A1 * !A2 * C1 * !D1 * X)	-0.00116	-0.00119	-0.00118
	(A1 * !A2 * !C1 * D1 * X)	0.00100	0.00100	0.00100
	(A1 * !A2 * !C1 * D1 * X)	-0.00108	-0.00111	-0.00111
	(!A1 * C1 * D1 * X)	0.00100	0.00101	0.00100
	(!A1 * C1 * D1 * X)	-0.00116	-0.00119	-0.00118
	(!A1 * C1 * !D1 * X)	0.00100	0.00101	0.00100
	(!A1 * C1 * !D1 * X)	-0.00116	-0.00119	-0.00118
	(!A1 * !C1 * D1 * X)	0.00100	0.00100	0.00100
	(!A1 * !C1 * D1 * X)	-0.00108	-0.00110	-0.00111

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00183	0.00183	0.00183
	(A1 * A2 * C1 * D1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * A2 * C1 * !D1 * X)	0.00183	0.00183	0.00183
	(A1 * A2 * C1 * !D1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * A2 * !C1 * D1 * X)	0.00184	0.00187	0.00184
	(A1 * A2 * !C1 * D1 * X)	-0.00166	-0.00165	-0.00164
	(A1 * A2 * !C1 * !D1 * X)	0.00185	0.00183	0.00183
	(A1 * A2 * !C1 * !D1 * X)	-0.00156	-0.00154	-0.00153
	(A1 * !A2 * C1 * D1 * X)	0.00183	0.00183	0.00183
	(A1 * !A2 * C1 * D1 * X)	-0.00212	-0.00219	-0.00217
	(A1 * !A2 * C1 * !D1 * X)	0.00183	0.00183	0.00183
	(A1 * !A2 * C1 * !D1 * X)	-0.00211	-0.00219	-0.00217
	(A1 * !A2 * !C1 * D1 * X)	0.00184	0.00184	0.00183
	(A1 * !A2 * !C1 * D1 * X)	-0.00200	-0.00205	-0.00205
	(!A1 * C1 * D1 * X)	0.00183	0.00183	0.00183
	(!A1 * C1 * D1 * X)	-0.00212	-0.00219	-0.00217
	(!A1 * C1 * !D1 * X)	0.00183	0.00183	0.00183
	(!A1 * C1 * !D1 * X)	-0.00211	-0.00219	-0.00217
	(!A1 * !C1 * D1 * X)	0.00184	0.00185	0.00183
	(!A1 * !C1 * D1 * X)	-0.00200	-0.00205	-0.00205

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)**	-0.00093	-0.00094	-0.00093
	(A1 * A2 * C1 * D1 * X)	0.00084	0.00084	0.00084
	(A1 * A2 * C1 * !D1 * X)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * C1 * !D1 * X)	0.00082	0.00083	0.00082
	(A1 * A2 * !C1 * D1 * X)	-0.00094	-0.00094	-0.00093
	(A1 * A2 * !C1 * D1 * X)	0.00080	0.00079	0.00079
	(A1 * A2 * !C1 * !D1 * X)	-0.00090	-0.00090	-0.00089
	(A1 * A2 * !C1 * !D1 * X)	0.00078	0.00078	0.00078
	(A1 * !A2 * C1 * D1 * X)	-0.00093	-0.00094	-0.00093
	(A1 * !A2 * C1 * D1 * X)	0.00105	0.00107	0.00106
	(A1 * !A2 * C1 * !D1 * X)	-0.00093	-0.00094	-0.00093
	(A1 * !A2 * C1 * !D1 * X)	0.00105	0.00107	0.00106
	(A1 * !A2 * !C1 * D1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * !A2 * !C1 * D1 * X)	0.00099	0.00099	0.00099
	(!A1 * C1 * D1 * X)	-0.00093	-0.00094	-0.00093
	(!A1 * C1 * D1 * X)	0.00105	0.00107	0.00106
	(!A1 * C1 * !D1 * X)	-0.00093	-0.00094	-0.00093
	(!A1 * C1 * !D1 * X)	0.00105	0.00107	0.00106
	(!A1 * !C1 * D1 * X)	-0.00093	-0.00093	-0.00093
	(!A1 * !C1 * D1 * X)	0.00099	0.00099	0.00099

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00100	-0.00100	-0.00100
	(A1 * A2 * C1 * D1 * X)	0.00094	0.00094	0.00094
	(A1 * A2 * C1 * !D1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * A2 * C1 * !D1 * X)	0.00092	0.00092	0.00092
	(A1 * A2 * !C1 * D1 * X)	-0.00099	-0.00100	-0.00100
	(A1 * A2 * !C1 * D1 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * !C1 * !D1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * A2 * !C1 * !D1 * X)	0.00087	0.00086	0.00087
	(A1 * !A2 * C1 * D1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * C1 * D1 * X)	0.00119	0.00119	0.00118
	(A1 * !A2 * C1 * !D1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * C1 * !D1 * X)	0.00119	0.00119	0.00118
	(A1 * !A2 * !C1 * D1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * !C1 * D1 * X)	0.00111	0.00111	0.00111
	(!A1 * C1 * D1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * C1 * D1 * X)	0.00119	0.00119	0.00118
	(!A1 * C1 * !D1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * C1 * !D1 * X)	0.00119	0.00119	0.00118
	(!A1 * !C1 * D1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * !C1 * D1 * X)	0.00111	0.00110	0.00111

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00182	-0.00183	-0.00183
	(A1 * A2 * C1 * D1 * X)	0.00172	0.00173	0.00172
	(A1 * A2 * C1 * !D1 * X)	-0.00182	-0.00183	-0.00183
	(A1 * A2 * C1 * !D1 * X)	0.00169	0.00170	0.00169
	(A1 * A2 * !C1 * D1 * X)	-0.00184	-0.00184	-0.00183
	(A1 * A2 * !C1 * D1 * X)	0.00166	0.00165	0.00164
	(A1 * A2 * !C1 * !D1 * X)	-0.00180	-0.00180	-0.00180
	(A1 * A2 * !C1 * !D1 * X)	0.00159	0.00159	0.00158
	(A1 * !A2 * C1 * D1 * X)	-0.00183	-0.00183	-0.00183
	(A1 * !A2 * C1 * D1 * X)	0.00217	0.00219	0.00217
	(A1 * !A2 * C1 * !D1 * X)	-0.00183	-0.00183	-0.00183
	(A1 * !A2 * C1 * !D1 * X)	0.00217	0.00219	0.00217
	(A1 * !A2 * !C1 * D1 * X)	-0.00184	-0.00183	-0.00183
	(A1 * !A2 * !C1 * D1 * X)	0.00205	0.00205	0.00205
	(!A1 * C1 * D1 * X)	-0.00183	-0.00183	-0.00183
	(!A1 * C1 * D1 * X)	0.00217	0.00219	0.00217
	(!A1 * C1 * !D1 * X)	-0.00183	-0.00183	-0.00183
	(!A1 * C1 * !D1 * X)	0.00217	0.00219	0.00217
	(!A1 * !C1 * D1 * X)	-0.00183	-0.00183	-0.00183
	(!A1 * !C1 * D1 * X)	0.00204	0.00205	0.00205

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)**	0.00094	0.00094	0.00094
	(A1 * B1 * D1 * X)	-0.00077	-0.00076	-0.00076
	(A1 * B1 * !D1 * X)	0.00095	0.00095	0.00094
	(A1 * B1 * !D1 * X)	-0.00073	-0.00073	-0.00073
	(A1 * A2 * !B1 * D1 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * !B1 * D1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B1 * !D1 * X)	0.00095	0.00095	0.00094
	(A1 * A2 * !B1 * !D1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * !B1 * D1 * X)	0.00095	0.00094	0.00094
	(A1 * !A2 * !B1 * D1 * X)	-0.00102	-0.00105	-0.00104
	(!A1 * B1 * D1 * X)	0.00094	0.00094	0.00094
	(!A1 * B1 * D1 * X)	-0.00077	-0.00077	-0.00076
	(!A1 * B1 * !D1 * X)	0.00095	0.00095	0.00094
	(!A1 * B1 * !D1 * X)	-0.00073	-0.00073	-0.00073
	(!A1 * !B1 * D1 * X)	0.00095	0.00094	0.00094
	(!A1 * !B1 * D1 * X)	-0.00102	-0.00105	-0.00104

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00099	0.00100	0.00099
	(A1 * B1 * D1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * B1 * !D1 * X)	0.00101	0.00100	0.00099
	(A1 * B1 * !D1 * X)	-0.00087	-0.00085	-0.00086
	(A1 * A2 * !B1 * D1 * X)	0.00100	0.00100	0.00099
	(A1 * A2 * !B1 * D1 * X)	-0.00093	-0.00094	-0.00094
	(A1 * A2 * !B1 * !D1 * X)	0.00101	0.00100	0.00099
	(A1 * A2 * !B1 * !D1 * X)	-0.00086	-0.00085	-0.00085
	(A1 * !A2 * !B1 * D1 * X)	0.00099	0.00100	0.00099
	(A1 * !A2 * !B1 * D1 * X)	-0.00119	-0.00123	-0.00122
	(!A1 * B1 * D1 * X)	0.00099	0.00099	0.00099
	(!A1 * B1 * D1 * X)	-0.00091	-0.00091	-0.00091
	(!A1 * B1 * !D1 * X)	0.00101	0.00100	0.00099
	(!A1 * B1 * !D1 * X)	-0.00088	-0.00086	-0.00087
	(!A1 * !B1 * D1 * X)	0.00099	0.00100	0.00099
	(!A1 * !B1 * D1 * X)	-0.00119	-0.00123	-0.00122

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00179	0.00180	0.00180
	(A1 * B1 * D1 * X)	-0.00164	-0.00164	-0.00164
	(A1 * B1 * !D1 * X)	0.00182	0.00179	0.00179
	(A1 * B1 * !D1 * X)	-0.00159	-0.00157	-0.00158
	(A1 * A2 * !B1 * D1 * X)	0.00180	0.00179	0.00179
	(A1 * A2 * !B1 * D1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * A2 * !B1 * !D1 * X)	0.00182	0.00179	0.00179
	(A1 * A2 * !B1 * !D1 * X)	-0.00159	-0.00157	-0.00157
	(A1 * !A2 * !B1 * D1 * X)	0.00179	0.00181	0.00178
	(A1 * !A2 * !B1 * D1 * X)	-0.00219	-0.00225	-0.00223
	(!A1 * B1 * D1 * X)	0.00179	0.00181	0.00180
	(!A1 * B1 * D1 * X)	-0.00165	-0.00164	-0.00164
	(!A1 * B1 * !D1 * X)	0.00178	0.00179	0.00179
	(!A1 * B1 * !D1 * X)	-0.00156	-0.00158	-0.00158
	(!A1 * !B1 * D1 * X)	0.00179	0.00181	0.00178
	(!A1 * !B1 * D1 * X)	-0.00219	-0.00225	-0.00224

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)**	-0.00094	-0.00094	-0.00094
	(A1 * B1 * D1 * X)	0.00077	0.00076	0.00076
	(A1 * B1 * !D1 * X)	-0.00094	-0.00094	-0.00093
	(A1 * B1 * !D1 * X)	0.00074	0.00074	0.00074
	(A1 * A2 * !B1 * D1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * A2 * !B1 * D1 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * !B1 * !D1 * X)	-0.00088	-0.00089	-0.00092
	(A1 * A2 * !B1 * !D1 * X)	0.00077	0.00077	0.00074
	(A1 * !A2 * !B1 * D1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * !A2 * !B1 * D1 * X)	0.00104	0.00105	0.00104
	(!A1 * B1 * D1 * X)	-0.00094	-0.00094	-0.00094
	(!A1 * B1 * D1 * X)	0.00077	0.00077	0.00076
	(!A1 * B1 * !D1 * X)	-0.00094	-0.00094	-0.00093
	(!A1 * B1 * !D1 * X)	0.00074	0.00074	0.00074
	(!A1 * !B1 * D1 * X)	-0.00094	-0.00094	-0.00094
	(!A1 * !B1 * D1 * X)	0.00104	0.00105	0.00104

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00099	-0.00099	-0.00099
	(A1 * B1 * D1 * X)	0.00090	0.00090	0.00090
	(A1 * B1 * !D1 * X)	-0.00099	-0.00099	-0.00099
	(A1 * B1 * !D1 * X)	0.00087	0.00087	0.00087
	(A1 * A2 * !B1 * D1 * X)	-0.00099	-0.00099	-0.00099
	(A1 * A2 * !B1 * D1 * X)	0.00093	0.00094	0.00094
	(A1 * A2 * !B1 * !D1 * X)	-0.00092	-0.00092	-0.00098
	(A1 * A2 * !B1 * !D1 * X)	0.00090	0.00089	0.00086
	(A1 * !A2 * !B1 * D1 * X)	-0.00099	-0.00100	-0.00099
	(A1 * !A2 * !B1 * D1 * X)	0.00123	0.00123	0.00122
	(!A1 * B1 * D1 * X)	-0.00099	-0.00099	-0.00099
	(!A1 * B1 * D1 * X)	0.00091	0.00091	0.00091
	(!A1 * B1 * !D1 * X)	-0.00099	-0.00099	-0.00099
	(!A1 * B1 * !D1 * X)	0.00088	0.00088	0.00088
	(!A1 * !B1 * D1 * X)	-0.00099	-0.00100	-0.00099
	(!A1 * !B1 * D1 * X)	0.00123	0.00123	0.00122

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00178	-0.00179	-0.00179
	(A1 * B1 * D1 * X)	0.00164	0.00164	0.00164
	(A1 * B1 * !D1 * X)	-0.00178	-0.00178	-0.00178
	(A1 * B1 * !D1 * X)	0.00159	0.00159	0.00160
	(A1 * A2 * !B1 * D1 * X)	-0.00179	-0.00179	-0.00179
	(A1 * A2 * !B1 * D1 * X)	0.00172	0.00173	0.00172
	(A1 * A2 * !B1 * !D1 * X)	-0.00168	-0.00169	-0.00173
	(A1 * A2 * !B1 * !D1 * X)	0.00163	0.00163	0.00162
	(A1 * !A2 * !B1 * D1 * X)	-0.00179	-0.00180	-0.00178
	(A1 * !A2 * !B1 * D1 * X)	0.00224	0.00225	0.00223
	(!A1 * B1 * D1 * X)	-0.00179	-0.00179	-0.00179
	(!A1 * B1 * D1 * X)	0.00165	0.00164	0.00164
	(!A1 * B1 * !D1 * X)	-0.00178	-0.00178	-0.00178
	(!A1 * B1 * !D1 * X)	0.00160	0.00160	0.00160
	(!A1 * !B1 * D1 * X)	-0.00179	-0.00180	-0.00178
	(!A1 * !B1 * D1 * X)	0.00225	0.00225	0.00224

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00101	0.00102	0.00102
	(A1 * C1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * B1 * !C1 * X)	0.00101	0.00102	0.00102
	(A1 * B1 * !C1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * !B1 * !C1 * X)	0.00103	0.00102	0.00102
	(A1 * A2 * !B1 * !C1 * X)	-0.00069	-0.00068	-0.00068
	(!A1 * C1 * X)	0.00102	0.00102	0.00102
	(!A1 * C1 * X)	-0.00068	-0.00068	-0.00068
	(!A1 * B1 * !C1 * X)	0.00102	0.00102	0.00102
	(!A1 * B1 * !C1 * X)	-0.00068	-0.00068	-0.00068

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00123	0.00124	0.00124
	(A1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(A1 * B1 * !C1 * X)	0.00124	0.00124	0.00124
	(A1 * B1 * !C1 * X)	-0.00074	-0.00074	-0.00074
	(A1 * A2 * !B1 * !C1 * X)	0.00123	0.00124	0.00124
	(A1 * A2 * !B1 * !C1 * X)	-0.00074	-0.00074	-0.00074
	(!A1 * C1 * X)	0.00123	0.00124	0.00124
	(!A1 * C1 * X)	-0.00074	-0.00074	-0.00074
	(!A1 * B1 * !C1 * X)	0.00123	0.00124	0.00124
	(!A1 * B1 * !C1 * X)	-0.00074	-0.00074	-0.00074
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00198	0.00198	0.00198
	(A1 * C1 * X)	-0.00138	-0.00138	-0.00138
	(A1 * B1 * !C1 * X)	0.00198	0.00198	0.00198
	(A1 * B1 * !C1 * X)	-0.00138	-0.00138	-0.00138
	(A1 * A2 * !B1 * !C1 * X)	0.00198	0.00198	0.00198
	(A1 * A2 * !B1 * !C1 * X)	-0.00138	-0.00138	-0.00138
	(!A1 * C1 * X)	0.00198	0.00198	0.00198
	(!A1 * C1 * X)	-0.00138	-0.00138	-0.00138
	(!A1 * B1 * !C1 * X)	0.00198	0.00198	0.00198
	(!A1 * B1 * !C1 * X)	-0.00138	-0.00138	-0.00138

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00099	-0.00099	-0.00102
	(A1 * C1 * X)	0.00071	0.00070	0.00069
	(A1 * B1 * !C1 * X)	-0.00094	-0.00094	-0.00101
	(A1 * B1 * !C1 * X)	0.00074	0.00073	0.00069
	(A1 * A2 * !B1 * !C1 * X)	-0.00081	-0.00082	-0.00097
	(A1 * A2 * !B1 * !C1 * X)	0.00082	0.00081	0.00071
	(!A1 * C1 * X)	-0.00100	-0.00099	-0.00102
	(!A1 * C1 * X)	0.00071	0.00070	0.00069
	(!A1 * B1 * !C1 * X)	-0.00094	-0.00094	-0.00101
	(!A1 * B1 * !C1 * X)	0.00074	0.00073	0.00069
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00121	-0.00121	-0.00124
	(A1 * C1 * X)	0.00077	0.00076	0.00075
	(A1 * B1 * !C1 * X)	-0.00114	-0.00114	-0.00122
	(A1 * B1 * !C1 * X)	0.00081	0.00081	0.00075
	(A1 * A2 * !B1 * !C1 * X)	-0.00099	-0.00100	-0.00118
	(A1 * A2 * !B1 * !C1 * X)	0.00091	0.00090	0.00078
	(!A1 * C1 * X)	-0.00121	-0.00121	-0.00124
	(!A1 * C1 * X)	0.00077	0.00076	0.00075
	(!A1 * B1 * !C1 * X)	-0.00114	-0.00114	-0.00122
	(!A1 * B1 * !C1 * X)	0.00081	0.00081	0.00075
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00189	-0.00190	-0.00198
	(A1 * C1 * X)	0.00148	0.00147	0.00140
	(A1 * B1 * !C1 * X)	-0.00176	-0.00176	-0.00195
	(A1 * B1 * !C1 * X)	0.00154	0.00154	0.00140
	(A1 * A2 * !B1 * !C1 * X)	-0.00151	-0.00153	-0.00187
	(A1 * A2 * !B1 * !C1 * X)	0.00171	0.00170	0.00146
	(!A1 * C1 * X)	-0.00189	-0.00190	-0.00198
	(!A1 * C1 * X)	0.00148	0.00147	0.00140
	(!A1 * B1 * !C1 * X)	-0.00176	-0.00176	-0.00195
	(!A1 * B1 * !C1 * X)	0.00155	0.00154	0.00141

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211oi_1	9.59040
sky130_fd_sc_hs__a211oi_2	15.98400
sky130_fd_sc_hs__a211oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__a211oi_1	0.00265	0.00247	0.00265	0.00273	0.09903
sky130_fd_sc_hs__a211oi_2	0.00483	0.00498	0.00406	0.00391	0.19328
sky130_fd_sc_hs__a211oi_4	0.00970	0.00954	0.00771	0.00796	0.36485

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.00009	0.00016
sky130_fd_sc_hs__a211oi_2	0.00000	0.00017	0.00023
sky130_fd_sc_hs__a211oi_4	0.00000	0.00034	0.00045

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)	0.49256	2.24911	13.27190
	A2->Y (FR)	0.58981	2.37561	13.49550
	B1->Y (FR)	0.54258	2.30349	13.67820
	C1->Y (FR)	0.45190	2.15294	13.09920
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.41134	1.94796	13.39320
	A2->Y (FR)	0.54392	2.08306	13.52660
	B1->Y (FR)	0.48158	2.01012	13.72690
	C1->Y (FR)	0.34957	1.81975	13.10490
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.38384	1.71323	13.21330
	A2->Y (FR)	0.51799	1.86241	13.47670
	B1->Y (FR)	0.44685	1.77788	13.68100
	C1->Y (FR)	0.33076	1.60148	13.09460

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.05029	0.55247	3.86322
	A2->Y (RF)	0.05477	0.53942	3.78731
	B1->Y (RF)	0.04055	0.47863	3.44647
	C1->Y (RF)	0.03850	0.46898	3.43458
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.04429	0.51913	3.97623
	A2->Y (RF)	0.05293	0.51407	3.87925
	B1->Y (RF)	0.05079	0.56664	4.43820
	C1->Y (RF)	0.04318	0.53992	4.36123
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.04357	0.49005	4.02956
	A2->Y (RF)	0.05051	0.47235	3.80386
	B1->Y (RF)	0.04866	0.52648	4.45811
	C1->Y (RF)	0.04248	0.50520	4.42805

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00042	0.00030	0.00029
	A1	0.00450	0.00439	0.00437
	A2	0.00067	0.00060	0.00058
	A2	0.00531	0.00523	0.00521
	B1	0.00071	0.00062	0.00059
	B1	0.00482	0.00471	0.00468
	C1	0.00061	0.00049	0.00046
	C1	0.00436	0.00423	0.00404
sky130_fd_sc_hs__a211oi_2	A1	0.00005	-0.00012	-0.00014
	A1	0.00781	0.00765	0.00763
	A2	0.00111	0.00090	0.00086
	A2	0.01012	0.00991	0.00986
	B1	0.00175	0.00162	0.00158
	B1	0.00875	0.00861	0.00855
	C1	0.00167	0.00152	0.00149
	C1	0.00764	0.00752	0.00705
sky130_fd_sc_hs__a211oi_4	A1	-0.00023	-0.00055	-0.00057
	A1	0.01510	0.01478	0.01480
	A2	0.00150	0.00114	0.00109
	A2	0.01929	0.01892	0.01887
	B1	0.00291	0.00266	0.00262
	B1	0.01661	0.01636	0.01628
	C1	0.00283	0.00250	0.00246
	C1	0.01466	0.01430	0.01361

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00503	0.00492	0.00479
	A1	0.00108	0.00095	0.00085
	A2	0.00561	0.00552	0.00538
	A2	0.00106	0.00096	0.00085
	B1	0.00445	0.00438	0.00430
	B1	0.00035	0.00027	0.00019
	C1	0.00363	0.00361	0.00355
	C1	-0.00016	-0.00019	-0.00024
sky130_fd_sc_hs__a211oi_2	A1	0.00914	0.00892	0.00870
	A1	0.00163	0.00140	0.00121
	A2	0.01048	0.01028	0.01000
	A2	0.00162	0.00140	0.00119
	B1	0.00753	0.00736	0.00721
	B1	0.00052	0.00034	0.00022
	C1	0.00525	0.00523	0.00518
	C1	-0.00082	-0.00086	-0.00090
sky130_fd_sc_hs__a211oi_4	A1	0.01801	0.01750	0.01702
	A1	0.00317	0.00263	0.00227
	A2	0.02056	0.02017	0.01963
	A2	0.00315	0.00269	0.00229
	B1	0.01423	0.01385	0.01363
	B1	0.00050	0.00010	-0.00004
	C1	0.01003	0.00992	0.00995
	C1	-0.00193	-0.00206	-0.00207

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)**	0.00099	0.00099	0.00099
	(A2 * B1 * C1 * !Y)	-0.00117	-0.00120	-0.00119
	(A2 * B1 * !C1 * !Y)	0.00099	0.00099	0.00099
	(A2 * B1 * !C1 * !Y)	-0.00117	-0.00120	-0.00119
	(A2 * !B1 * C1 * !Y)	0.00098	0.00100	0.00099
	(A2 * !B1 * C1 * !Y)	-0.00111	-0.00114	-0.00114
	(!A2 * B1 * C1 * !Y)	0.00092	0.00093	0.00092
	(!A2 * B1 * C1 * !Y)	-0.00123	-0.00124	-0.00123
	(!A2 * B1 * !C1 * !Y)	0.00093	0.00093	0.00092
	(!A2 * B1 * !C1 * !Y)	-0.00124	-0.00124	-0.00123
	(!A2 * !B1 * C1 * !Y)	0.00093	0.00093	0.00093
	(!A2 * !B1 * C1 * !Y)	-0.00124	-0.00124	-0.00123
	(!A2 * !B1 * !C1 * Y)	0.00036	0.00037	0.00036
	(!A2 * !B1 * !C1 * Y)	-0.00143	-0.00144	-0.00146
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00201	0.00202	0.00201
	(A2 * B1 * C1 * !Y)	-0.00229	-0.00236	-0.00234
	(A2 * B1 * !C1 * !Y)	0.00202	0.00202	0.00201
	(A2 * B1 * !C1 * !Y)	-0.00229	-0.00237	-0.00234
	(A2 * !B1 * C1 * !Y)	0.00202	0.00201	0.00201
	(A2 * !B1 * C1 * !Y)	-0.00219	-0.00227	-0.00225
	(!A2 * B1 * C1 * !Y)	0.00190	0.00192	0.00191
	(!A2 * B1 * C1 * !Y)	-0.00242	-0.00244	-0.00242
	(!A2 * B1 * !C1 * !Y)	0.00190	0.00191	0.00190
	(!A2 * B1 * !C1 * !Y)	-0.00242	-0.00244	-0.00242
	(!A2 * !B1 * C1 * !Y)	0.00190	0.00191	0.00190
	(!A2 * !B1 * C1 * !Y)	-0.00242	-0.00244	-0.00242
	(!A2 * !B1 * !C1 * Y)	0.00085	0.00086	0.00082
	(!A2 * !B1 * !C1 * Y)	-0.00276	-0.00279	-0.00284

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00390	0.00392	0.00391
	(A2 * B1 * C1 * !Y)	-0.00464	-0.00480	-0.00476
	(A2 * B1 * !C1 * !Y)	0.00390	0.00392	0.00391
	(A2 * B1 * !C1 * !Y)	-0.00465	-0.00474	-0.00476
	(A2 * !B1 * C1 * !Y)	0.00392	0.00396	0.00391
	(A2 * !B1 * C1 * !Y)	-0.00443	-0.00457	-0.00455
	(!A2 * B1 * C1 * !Y)	0.00368	0.00371	0.00369
	(!A2 * B1 * C1 * !Y)	-0.00494	-0.00496	-0.00494
	(!A2 * B1 * !C1 * !Y)	0.00366	0.00370	0.00368
	(!A2 * B1 * !C1 * !Y)	-0.00493	-0.00494	-0.00494
	(!A2 * !B1 * C1 * !Y)	0.00367	0.00370	0.00368
	(!A2 * !B1 * C1 * !Y)	-0.00493	-0.00495	-0.00494
	(!A2 * !B1 * !C1 * Y)	0.00151	0.00151	0.00144
	(!A2 * !B1 * !C1 * Y)	-0.00570	-0.00574	-0.00582

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)**	-0.00098	-0.00099	-0.00098
	(A2 * B1 * C1 * !Y)	0.00119	0.00120	0.00119
	(A2 * B1 * !C1 * !Y)	-0.00098	-0.00099	-0.00098
	(A2 * B1 * !C1 * !Y)	0.00119	0.00120	0.00119
	(A2 * !B1 * C1 * !Y)	-0.00098	-0.00098	-0.00098
	(A2 * !B1 * C1 * !Y)	0.00113	0.00114	0.00114
	(!A2 * B1 * C1 * !Y)	-0.00090	-0.00093	-0.00092
	(!A2 * B1 * C1 * !Y)	0.00123	0.00125	0.00124
	(!A2 * B1 * !C1 * !Y)	-0.00090	-0.00093	-0.00092
	(!A2 * B1 * !C1 * !Y)	0.00124	0.00124	0.00124
	(!A2 * !B1 * C1 * !Y)	-0.00090	-0.00093	-0.00093
	(!A2 * !B1 * C1 * !Y)	0.00124	0.00124	0.00124
	(!A2 * !B1 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !C1 * Y)	0.00145	0.00146	0.00146
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00201	-0.00202	-0.00201
	(A2 * B1 * C1 * !Y)	0.00235	0.00236	0.00234
	(A2 * B1 * !C1 * !Y)	-0.00202	-0.00202	-0.00201
	(A2 * B1 * !C1 * !Y)	0.00235	0.00237	0.00234
	(A2 * !B1 * C1 * !Y)	-0.00202	-0.00201	-0.00201
	(A2 * !B1 * C1 * !Y)	0.00226	0.00227	0.00225
	(!A2 * B1 * C1 * !Y)	-0.00186	-0.00192	-0.00191
	(!A2 * B1 * C1 * !Y)	0.00244	0.00245	0.00243
	(!A2 * B1 * !C1 * !Y)	-0.00184	-0.00191	-0.00190
	(!A2 * B1 * !C1 * !Y)	0.00242	0.00246	0.00243
	(!A2 * !B1 * C1 * !Y)	-0.00184	-0.00191	-0.00190
	(!A2 * !B1 * C1 * !Y)	0.00242	0.00245	0.00243
	(!A2 * !B1 * !C1 * Y)	-0.00080	-0.00080	-0.00080
	(!A2 * !B1 * !C1 * Y)	0.00284	0.00284	0.00284

sky130_fd_sc_hs__a211oi_4	(A2 * B1 * C1 * !Y)	-0.00390	-0.00392	-0.00390
	(A2 * B1 * C1 * !Y)	0.00478	0.00480	0.00476
	(A2 * B1 * !C1 * !Y)	-0.00390	-0.00389	-0.00390
	(A2 * B1 * !C1 * !Y)	0.00479	0.00474	0.00476
	(A2 * !B1 * C1 * !Y)	-0.00392	-0.00391	-0.00391
	(A2 * !B1 * C1 * !Y)	0.00458	0.00457	0.00455
	(!A2 * B1 * C1 * !Y)	-0.00357	-0.00371	-0.00369
	(!A2 * B1 * C1 * !Y)	0.00497	0.00499	0.00495
	(!A2 * B1 * !C1 * !Y)	-0.00353	-0.00370	-0.00368
	(!A2 * B1 * !C1 * !Y)	0.00493	0.00494	0.00495
	(!A2 * !B1 * C1 * !Y)	-0.00353	-0.00370	-0.00368
	(!A2 * !B1 * C1 * !Y)	0.00493	0.00495	0.00495
	(!A2 * !B1 * !C1 * Y)	-0.00141	-0.00141	-0.00141
	(!A2 * !B1 * !C1 * Y)	0.00581	0.00584	0.00583

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)	0.00101	0.00101	0.00100
	(A1 * B1 * C1 * !Y)	-0.00118	-0.00121	-0.00120
	(A1 * B1 * !C1 * !Y)	0.00101	0.00101	0.00100
	(A1 * B1 * !C1 * !Y)	-0.00118	-0.00121	-0.00120
	(A1 * !B1 * C1 * !Y)	0.00100	0.00101	0.00100
	(A1 * !B1 * C1 * !Y)	-0.00111	-0.00115	-0.00115
	(!A1 * B1 * !Y)	0.00093	0.00094	0.00094
	(!A1 * B1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1 * C1 * !Y)	0.00093	0.00094	0.00094
	(!A1 * !B1 * C1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1 * !C1 * Y)	0.00093	0.00095	0.00094
	(!A1 * !B1 * !C1 * Y)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00207	0.00208	0.00207
	(A1 * B1 * C1 * !Y)	-0.00236	-0.00244	-0.00242
	(A1 * B1 * !C1 * !Y)	0.00207	0.00208	0.00207
	(A1 * B1 * !C1 * !Y)	-0.00237	-0.00244	-0.00242
	(A1 * !B1 * C1 * !Y)	0.00207	0.00209	0.00207
	(A1 * !B1 * C1 * !Y)	-0.00225	-0.00231	-0.00231
	(!A1 * B1 * !Y)	0.00198	0.00198	0.00197
	(!A1 * B1 * !Y)	-0.00252	-0.00252	-0.00251
	(!A1 * !B1 * C1 * !Y)	0.00196	0.00198	0.00197
	(!A1 * !B1 * C1 * !Y)	-0.00250	-0.00252	-0.00251
	(!A1 * !B1 * !C1 * Y)	0.00181	0.00182	0.00180
	(!A1 * !B1 * !C1 * Y)	-0.00269	-0.00269	-0.00268
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00402	0.00404	0.00402
	(A1 * B1 * C1 * !Y)	-0.00470	-0.00484	-0.00481
	(A1 * B1 * !C1 * !Y)	0.00402	0.00404	0.00402
	(A1 * B1 * !C1 * !Y)	-0.00470	-0.00484	-0.00481
	(A1 * !B1 * C1 * !Y)	0.00405	0.00407	0.00402
	(A1 * !B1 * C1 * !Y)	-0.00449	-0.00459	-0.00459
	(!A1 * B1 * !Y)	0.00375	0.00380	0.00377
	(!A1 * B1 * !Y)	-0.00498	-0.00502	-0.00499
	(!A1 * !B1 * C1 * !Y)	0.00376	0.00379	0.00377
	(!A1 * !B1 * C1 * !Y)	-0.00499	-0.00502	-0.00499
	(!A1 * !B1 * !C1 * Y)	0.00374	0.00379	0.00376
	(!A1 * !B1 * !C1 * Y)	-0.00498	-0.00502	-0.00500

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)**	-0.00100	-0.00100	-0.00100
	(A1 * B1 * C1 * !Y)	0.00121	0.00121	0.00120
	(A1 * B1 * !C1 * !Y)	-0.00100	-0.00100	-0.00100
	(A1 * B1 * !C1 * !Y)	0.00121	0.00121	0.00120
	(A1 * !B1 * C1 * !Y)	-0.00100	-0.00099	-0.00100
	(A1 * !B1 * C1 * !Y)	0.00115	0.00115	0.00115
	(!A1 * B1 * !Y)	-0.00092	-0.00094	-0.00094
	(!A1 * B1 * !Y)	0.00124	0.00126	0.00125
	(!A1 * !B1 * C1 * !Y)	-0.00092	-0.00094	-0.00094
	(!A1 * !B1 * C1 * !Y)	0.00124	0.00126	0.00125
	(!A1 * !B1 * !C1 * Y)	-0.00092	-0.00094	-0.00094
	(!A1 * !B1 * !C1 * Y)	0.00124	0.00126	0.00125
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00206	-0.00207	-0.00206
	(A1 * B1 * C1 * !Y)	0.00241	0.00244	0.00242
	(A1 * B1 * !C1 * !Y)	-0.00206	-0.00207	-0.00206
	(A1 * B1 * !C1 * !Y)	0.00241	0.00244	0.00242
	(A1 * !B1 * C1 * !Y)	-0.00207	-0.00207	-0.00207
	(A1 * !B1 * C1 * !Y)	0.00231	0.00231	0.00231
	(!A1 * B1 * !Y)	-0.00193	-0.00198	-0.00197
	(!A1 * B1 * !Y)	0.00253	0.00253	0.00252
	(!A1 * !B1 * C1 * !Y)	-0.00193	-0.00198	-0.00197
	(!A1 * !B1 * C1 * !Y)	0.00252	0.00253	0.00252
	(!A1 * !B1 * !C1 * Y)	-0.00176	-0.00181	-0.00180
	(!A1 * !B1 * !C1 * Y)	0.00270	0.00270	0.00269

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00400	-0.00403	-0.00401
	(A1 * B1 * C1 * !Y)	0.00480	0.00484	0.00481
	(A1 * B1 * !C1 * !Y)	-0.00402	-0.00402	-0.00401
	(A1 * B1 * !C1 * !Y)	0.00482	0.00484	0.00481
	(A1 * !B1 * C1 * !Y)	-0.00403	-0.00402	-0.00402
	(A1 * !B1 * C1 * !Y)	0.00461	0.00459	0.00459
	(!A1 * B1 * !Y)	-0.00369	-0.00380	-0.00377
	(!A1 * B1 * !Y)	0.00503	0.00505	0.00501
	(!A1 * !B1 * C1 * !Y)	-0.00369	-0.00379	-0.00377
	(!A1 * !B1 * C1 * !Y)	0.00503	0.00505	0.00501
	(!A1 * !B1 * !C1 * Y)	-0.00368	-0.00379	-0.00376
	(!A1 * !B1 * !C1 * Y)	0.00504	0.00505	0.00501

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)	0.00104	0.00105	0.00105
	(A1 * A2 * C1 * !Y)	-0.00089	-0.00089	-0.00089
	(A1 * A2 * !C1 * !Y)	0.00105	0.00105	0.00104
	(A1 * A2 * !C1 * !Y)	-0.00081	-0.00081	-0.00082
	(A1 * !A2 * C1 * !Y)	0.00104	0.00105	0.00104
	(A1 * !A2 * C1 * !Y)	-0.00115	-0.00119	-0.00117
	(!A1 * C1 * !Y)	0.00104	0.00105	0.00104
	(!A1 * C1 * !Y)	-0.00115	-0.00119	-0.00117
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00125	0.00125	0.00125
	(A1 * A2 * C1 * !Y)	-0.00173	-0.00173	-0.00173
	(A1 * A2 * !C1 * !Y)	0.00124	0.00123	0.00123
	(A1 * A2 * !C1 * !Y)	-0.00161	-0.00160	-0.00161
	(A1 * !A2 * C1 * !Y)	0.00124	0.00123	0.00123
	(A1 * !A2 * C1 * !Y)	-0.00226	-0.00233	-0.00231
	(!A1 * C1 * !Y)	0.00124	0.00123	0.00123
	(!A1 * C1 * !Y)	-0.00226	-0.00233	-0.00231
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00222	0.00222	0.00222
	(A1 * A2 * C1 * !Y)	-0.00360	-0.00358	-0.00358
	(A1 * A2 * !C1 * !Y)	0.00221	0.00222	0.00220
	(A1 * A2 * !C1 * !Y)	-0.00332	-0.00333	-0.00334
	(A1 * !A2 * C1 * !Y)	0.00222	0.00222	0.00220
	(A1 * !A2 * C1 * !Y)	-0.00469	-0.00482	-0.00479
	(!A1 * C1 * !Y)	0.00222	0.00221	0.00220
	(!A1 * C1 * !Y)	-0.00469	-0.00482	-0.00479

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)	-0.00104	-0.00104	-0.00104
	(A1 * A2 * C1 * !Y)	0.00089	0.00089	0.00089
	(A1 * A2 * !C1 * !Y)	-0.00102	-0.00103	-0.00103
	(A1 * A2 * !C1 * !Y)	0.00084	0.00084	0.00084
	(A1 * !A2 * C1 * !Y)	-0.00104	-0.00105	-0.00104
	(A1 * !A2 * C1 * !Y)	0.00117	0.00119	0.00117
	(!A1 * C1 * !Y)	-0.00104	-0.00105	-0.00104
	(!A1 * C1 * !Y)	0.00117	0.00119	0.00117
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00123	-0.00123	-0.00124
	(A1 * A2 * C1 * !Y)	0.00173	0.00173	0.00173
	(A1 * A2 * !C1 * !Y)	-0.00120	-0.00120	-0.00119
	(A1 * A2 * !C1 * !Y)	0.00165	0.00164	0.00166
	(A1 * !A2 * C1 * !Y)	-0.00124	-0.00123	-0.00123
	(A1 * !A2 * C1 * !Y)	0.00232	0.00233	0.00231
	(!A1 * C1 * !Y)	-0.00123	-0.00123	-0.00123
	(!A1 * C1 * !Y)	0.00230	0.00233	0.00231
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00221	-0.00220	-0.00220
	(A1 * A2 * C1 * !Y)	0.00360	0.00358	0.00358
	(A1 * A2 * !C1 * !Y)	-0.00214	-0.00214	-0.00212
	(A1 * A2 * !C1 * !Y)	0.00343	0.00341	0.00345
	(A1 * !A2 * C1 * !Y)	-0.00221	-0.00221	-0.00220
	(A1 * !A2 * C1 * !Y)	0.00480	0.00482	0.00479
	(!A1 * C1 * !Y)	-0.00220	-0.00221	-0.00220
	(!A1 * C1 * !Y)	0.00477	0.00482	0.00479

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00125	0.00125	0.00125
	(A1 * B1 * !Y)	-0.00073	-0.00072	-0.00072
	(A1 * A2 * !B1 * !Y)	0.00125	0.00125	0.00125
	(A1 * A2 * !B1 * !Y)	-0.00073	-0.00072	-0.00072
	(!A1 * B1 * !Y)	0.00125	0.00125	0.00125
	(!A1 * B1 * !Y)	-0.00073	-0.00072	-0.00072
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00133	0.00133	0.00133
	(A1 * B1 * !Y)	-0.00147	-0.00148	-0.00148
	(A1 * A2 * !B1 * !Y)	0.00133	0.00133	0.00133
	(A1 * A2 * !B1 * !Y)	-0.00148	-0.00147	-0.00147
	(!A1 * B1 * !Y)	0.00133	0.00133	0.00133
	(!A1 * B1 * !Y)	-0.00149	-0.00148	-0.00148
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00269	0.00269	0.00269
	(A1 * B1 * !Y)	-0.00298	-0.00296	-0.00296
	(A1 * A2 * !B1 * !Y)	0.00269	0.00269	0.00269
	(A1 * A2 * !B1 * !Y)	-0.00297	-0.00296	-0.00296
	(!A1 * B1 * !Y)	0.00270	0.00269	0.00269
	(!A1 * B1 * !Y)	-0.00299	-0.00297	-0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00122	-0.00122	-0.00125
	(A1 * B1 * !Y)	0.00076	0.00075	0.00073
	(A1 * A2 * !B1 * !Y)	-0.00110	-0.00111	-0.00123
	(A1 * A2 * !B1 * !Y)	0.00083	0.00083	0.00074
	(!A1 * B1 * !Y)	-0.00121	-0.00122	-0.00125
	(!A1 * B1 * !Y)	0.00075	0.00075	0.00073
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00123	-0.00124	-0.00133
	(A1 * B1 * !Y)	0.00157	0.00156	0.00150
	(A1 * A2 * !B1 * !Y)	-0.00103	-0.00103	-0.00128
	(A1 * A2 * !B1 * !Y)	0.00170	0.00169	0.00151
	(!A1 * B1 * !Y)	-0.00123	-0.00123	-0.00133
	(!A1 * B1 * !Y)	0.00159	0.00157	0.00150
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00253	-0.00254	-0.00269
	(A1 * B1 * !Y)	0.00313	0.00311	0.00300
	(A1 * A2 * !B1 * !Y)	-0.00207	-0.00210	-0.00259
	(A1 * A2 * !B1 * !Y)	0.00338	0.00338	0.00304
	(!A1 * B1 * !Y)	-0.00251	-0.00253	-0.00269
	(!A1 * B1 * !Y)	0.00313	0.00313	0.00301

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211o_1	12.78720
sky130_fd_sc_hs__a211o_2	12.78720
sky130_fd_sc_hs__a211o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__a211o_1	0.00243	0.00227	0.00249	0.00248	0.36099
sky130_fd_sc_hs__a211o_2	0.00269	0.00265	0.00266	0.00258	0.71188
sky130_fd_sc_hs__a211o_4	0.00451	0.00459	0.00494	0.00449	1.38544

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	0.00015	0.00025
sky130_fd_sc_hs__a211o_2	0.00000	0.00021	0.00035
sky130_fd_sc_hs__a211o_4	0.00000	0.00042	0.00070

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)	0.17394	1.19614	8.66973
	A2->X (RR)	0.17890	1.20324	8.85140
	B1->X (RR)	0.14640	1.15350	8.61288
	C1->X (RR)	0.14230	1.13733	8.54452
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.16794	1.06252	8.81689
	A2->X (RR)	0.17338	1.06134	8.95110
	B1->X (RR)	0.13492	1.01495	8.74687
	C1->X (RR)	0.13170	1.00260	8.69640
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.17202	0.95716	8.86407
	A2->X (RR)	0.17804	0.96016	9.02050
	B1->X (RR)	0.13014	0.89456	8.76872
	C1->X (RR)	0.13132	0.89072	8.72711

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.70935	1.55197	7.15529
	A2->X (FF)	0.81041	1.66278	7.33944
	B1->X (FF)	0.75231	1.58262	7.34683
	C1->X (FF)	0.66600	1.43436	6.71967
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.96157	1.82702	7.70625
	A2->X (FF)	1.09070	1.96832	7.88871
	B1->X (FF)	1.03459	1.89325	7.98410
	C1->X (FF)	0.94100	1.73655	7.41463
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.86718	1.68919	7.52006
	A2->X (FF)	0.94385	1.77463	7.67419
	B1->X (FF)	0.90396	1.71036	7.74888
	C1->X (FF)	0.79856	1.53562	7.14039

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00705	0.00696	0.00683
	A1	0.00342	0.00333	0.00321
	A2	0.00752	0.00746	0.00736
	A2	0.00341	0.00334	0.00327
	B1	0.00656	0.00650	0.00639
	B1	0.00278	0.00271	0.00262
	C1	0.00577	0.00565	0.00556
	C1	0.00234	0.00222	0.00213
sky130_fd_sc_hs__a211o_2	A1	0.00898	0.00900	0.00891
	A1	0.00494	0.00497	0.00491
	A2	0.00962	0.00967	0.00960
	A2	0.00493	0.00498	0.00496
	B1	0.00859	0.00864	0.00859
	B1	0.00437	0.00443	0.00440
	C1	0.00776	0.00781	0.00773
	C1	0.00392	0.00397	0.00391
sky130_fd_sc_hs__a211o_4	A1	0.01646	0.01662	0.01666
	A1	0.00932	0.00948	0.00962
	A2	0.01773	0.01801	0.01810
	A2	0.00933	0.00961	0.00975
	B1	0.01551	0.01556	0.01549
	B1	0.00807	0.00812	0.00806
	C1	0.01346	0.01357	0.01354
	C1	0.00707	0.00718	0.00719

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00263	0.00267	0.00286
	A1	0.00635	0.00640	0.00637
	A2	0.00288	0.00297	0.00344
	A2	0.00705	0.00712	0.00710
	B1	0.00271	0.00279	0.00365
	B1	0.00647	0.00655	0.00653
	C1	0.00268	0.00272	0.00296
	C1	0.00608	0.00611	0.00608
sky130_fd_sc_hs__a211o_2	A1	0.00412	0.00432	0.00470
	A1	0.00823	0.00843	0.00849
	A2	0.00434	0.00458	0.00521
	A2	0.00906	0.00930	0.00935
	B1	0.00406	0.00431	0.00639
	B1	0.00855	0.00878	0.00883
	C1	0.00436	0.00455	0.00461
	C1	0.00815	0.00835	0.00838
sky130_fd_sc_hs__a211o_4	A1	0.00778	0.00828	0.00847
	A1	0.01511	0.01562	0.01577
	A2	0.00789	0.00847	0.01029
	A2	0.01638	0.01698	0.01716
	B1	0.00761	0.00815	0.01113
	B1	0.01566	0.01615	0.01629
	C1	0.00830	0.00869	0.01227
	C1	0.01461	0.01501	0.01519

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)**	0.00087	0.00087	0.00086
	(A2 * B1 * C1 * X)	-0.00109	-0.00112	-0.00111
	(A2 * B1 * !C1 * X)	0.00087	0.00087	0.00086
	(A2 * B1 * !C1 * X)	-0.00109	-0.00112	-0.00111
	(A2 * !B1 * C1 * X)	0.00086	0.00087	0.00086
	(A2 * !B1 * C1 * X)	-0.00103	-0.00106	-0.00106
	(!A2 * B1 * C1 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * C1 * X)	-0.00115	-0.00116	-0.00115
	(!A2 * B1 * !C1 * X)	0.00082	0.00082	0.00082
	(!A2 * B1 * !C1 * X)	-0.00115	-0.00116	-0.00115
	(!A2 * !B1 * C1 * X)	0.00082	0.00082	0.00082
	(!A2 * !B1 * C1 * X)	-0.00115	-0.00116	-0.00115
	(!A2 * !B1 * !C1 * !X)	0.00030	0.00030	0.00029
	(!A2 * !B1 * !C1 * !X)	-0.00137	-0.00138	-0.00139
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00108	0.00108	0.00107
	(A2 * B1 * C1 * X)	-0.00105	-0.00107	-0.00106
	(A2 * B1 * !C1 * X)	0.00108	0.00108	0.00107
	(A2 * B1 * !C1 * X)	-0.00105	-0.00107	-0.00106
	(A2 * !B1 * C1 * X)	0.00107	0.00108	0.00107
	(A2 * !B1 * C1 * X)	-0.00099	-0.00102	-0.00102
	(!A2 * B1 * C1 * X)	0.00100	0.00101	0.00100
	(!A2 * B1 * C1 * X)	-0.00109	-0.00110	-0.00110
	(!A2 * B1 * !C1 * X)	0.00100	0.00101	0.00100
	(!A2 * B1 * !C1 * X)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * C1 * X)	0.00100	0.00101	0.00101
	(!A2 * !B1 * C1 * X)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * !C1 * !X)	0.00037	0.00037	0.00036
	(!A2 * !B1 * !C1 * !X)	-0.00137	-0.00138	-0.00139

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00170	0.00170	0.00169
	(A2 * B1 * C1 * X)	-0.00217	-0.00222	-0.00221
	(A2 * B1 * !C1 * X)	0.00170	0.00170	0.00169
	(A2 * B1 * !C1 * X)	-0.00217	-0.00222	-0.00221
	(A2 * !B1 * C1 * X)	0.00169	0.00170	0.00168
	(A2 * !B1 * C1 * X)	-0.00206	-0.00212	-0.00211
	(!A2 * B1 * C1 * X)	0.00157	0.00159	0.00158
	(!A2 * B1 * C1 * X)	-0.00228	-0.00230	-0.00229
	(!A2 * B1 * !C1 * X)	0.00159	0.00159	0.00158
	(!A2 * B1 * !C1 * X)	-0.00230	-0.00230	-0.00229
	(!A2 * !B1 * C1 * X)	0.00158	0.00159	0.00158
	(!A2 * !B1 * C1 * X)	-0.00230	-0.00231	-0.00229
	(!A2 * !B1 * !C1 * !X)	0.00061	0.00061	0.00058
	(!A2 * !B1 * !C1 * !X)	-0.00267	-0.00268	-0.00272

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)**	-0.00086	-0.00087	-0.00086
	(A2 * B1 * C1 * X)	0.00110	0.00112	0.00111
	(A2 * B1 * !C1 * X)	-0.00086	-0.00087	-0.00086
	(A2 * B1 * !C1 * X)	0.00110	0.00112	0.00111
	(A2 * !B1 * C1 * X)	-0.00086	-0.00086	-0.00086
	(A2 * !B1 * C1 * X)	0.00107	0.00106	0.00106
	(!A2 * B1 * C1 * X)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * C1 * X)	0.00116	0.00118	0.00116
	(!A2 * B1 * !C1 * X)	-0.00080	-0.00082	-0.00082
	(!A2 * B1 * !C1 * X)	0.00115	0.00118	0.00116
	(!A2 * !B1 * C1 * X)	-0.00080	-0.00082	-0.00082
	(!A2 * !B1 * C1 * X)	0.00115	0.00117	0.00116
	(!A2 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * !X)	0.00139	0.00139	0.00139
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00107	-0.00108	-0.00107
	(A2 * B1 * C1 * X)	0.00106	0.00107	0.00106
	(A2 * B1 * !C1 * X)	-0.00107	-0.00108	-0.00107
	(A2 * B1 * !C1 * X)	0.00106	0.00107	0.00106
	(A2 * !B1 * C1 * X)	-0.00107	-0.00107	-0.00107
	(A2 * !B1 * C1 * X)	0.00103	0.00102	0.00102
	(!A2 * B1 * C1 * X)	-0.00099	-0.00101	-0.00100
	(!A2 * B1 * C1 * X)	0.00110	0.00111	0.00110
	(!A2 * B1 * !C1 * X)	-0.00098	-0.00101	-0.00100
	(!A2 * B1 * !C1 * X)	0.00110	0.00111	0.00110
	(!A2 * !B1 * C1 * X)	-0.00098	-0.00101	-0.00101
	(!A2 * !B1 * C1 * X)	0.00110	0.00111	0.00110
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00139	0.00139	0.00139

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00169	-0.00169	-0.00169
	(A2 * B1 * C1 * X)	0.00220	0.00222	0.00221
	(A2 * B1 * !C1 * X)	-0.00168	-0.00169	-0.00169
	(A2 * B1 * !C1 * X)	0.00220	0.00222	0.00221
	(A2 * !B1 * C1 * X)	-0.00168	-0.00168	-0.00168
	(A2 * !B1 * C1 * X)	0.00211	0.00212	0.00211
	(!A2 * B1 * C1 * X)	-0.00155	-0.00159	-0.00158
	(!A2 * B1 * C1 * X)	0.00231	0.00232	0.00230
	(!A2 * B1 * !C1 * X)	-0.00154	-0.00159	-0.00158
	(!A2 * B1 * !C1 * X)	0.00231	0.00232	0.00230
	(!A2 * !B1 * C1 * X)	-0.00154	-0.00159	-0.00158
	(!A2 * !B1 * C1 * X)	0.00231	0.00232	0.00230
	(!A2 * !B1 * !C1 * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * !B1 * !C1 * !X)	0.00271	0.00272	0.00272

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)**	0.00089	0.00089	0.00088
	(A1 * B1 * C1 * X)	-0.00108	-0.00110	-0.00110
	(A1 * B1 * !C1 * X)	0.00089	0.00089	0.00088
	(A1 * B1 * !C1 * X)	-0.00108	-0.00110	-0.00110
	(A1 * !B1 * C1 * X)	0.00088	0.00089	0.00088
	(A1 * !B1 * C1 * X)	-0.00102	-0.00105	-0.00105
	(!A1 * B1 * X)	0.00084	0.00084	0.00084
	(!A1 * B1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * !B1 * C1 * X)	0.00084	0.00084	0.00084
	(!A1 * !B1 * C1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * !B1 * !C1 * !X)	0.00074	0.00076	0.00075
	(!A1 * !B1 * !C1 * !X)	-0.00122	-0.00123	-0.00123

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00115	0.00116	0.00115
	(A1 * B1 * C1 * X)	-0.00104	-0.00108	-0.00107
	(A1 * B1 * !C1 * X)	0.00115	0.00116	0.00115
	(A1 * B1 * !C1 * X)	-0.00104	-0.00108	-0.00107
	(A1 * !B1 * C1 * X)	0.00115	0.00116	0.00115
	(A1 * !B1 * C1 * X)	-0.00100	-0.00102	-0.00103
	(!A1 * B1 * X)	0.00108	0.00109	0.00109
	(!A1 * B1 * X)	-0.00110	-0.00111	-0.00111
	(!A1 * !B1 * C1 * X)	0.00109	0.00109	0.00109
	(!A1 * !B1 * C1 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00128	-0.00128
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00205	0.00206	0.00204
	(A1 * B1 * C1 * X)	-0.00209	-0.00216	-0.00214
	(A1 * B1 * !C1 * X)	0.00205	0.00206	0.00204
	(A1 * B1 * !C1 * X)	-0.00209	-0.00216	-0.00214
	(A1 * !B1 * C1 * X)	0.00204	0.00205	0.00204
	(A1 * !B1 * C1 * X)	-0.00199	-0.00207	-0.00206
	(!A1 * B1 * X)	0.00194	0.00195	0.00194
	(!A1 * B1 * X)	-0.00221	-0.00222	-0.00221
	(!A1 * !B1 * C1 * X)	0.00194	0.00194	0.00194
	(!A1 * !B1 * C1 * X)	-0.00221	-0.00221	-0.00221
	(!A1 * !B1 * !C1 * !X)	0.00188	0.00191	0.00189
	(!A1 * !B1 * !C1 * !X)	-0.00225	-0.00227	-0.00226

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)**	-0.00089	-0.00089	-0.00088
	(A1 * B1 * C1 * X)	0.00110	0.00110	0.00110
	(A1 * B1 * !C1 * X)	-0.00089	-0.00089	-0.00088
	(A1 * B1 * !C1 * X)	0.00110	0.00110	0.00110
	(A1 * !B1 * C1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * !B1 * C1 * X)	0.00105	0.00105	0.00105
	(!A1 * B1 * X)	-0.00082	-0.00084	-0.00084
	(!A1 * B1 * X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * C1 * X)	-0.00082	-0.00084	-0.00084
	(!A1 * !B1 * C1 * X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * !C1 * !X)	-0.00073	-0.00076	-0.00075
	(!A1 * !B1 * !C1 * !X)	0.00123	0.00123	0.00123
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00115	-0.00116	-0.00115
	(A1 * B1 * C1 * X)	0.00108	0.00108	0.00107
	(A1 * B1 * !C1 * X)	-0.00115	-0.00116	-0.00115
	(A1 * B1 * !C1 * X)	0.00108	0.00108	0.00107
	(A1 * !B1 * C1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * !B1 * C1 * X)	0.00103	0.00102	0.00103
	(!A1 * B1 * X)	-0.00106	-0.00109	-0.00109
	(!A1 * B1 * X)	0.00111	0.00112	0.00111
	(!A1 * !B1 * C1 * X)	-0.00106	-0.00109	-0.00109
	(!A1 * !B1 * C1 * X)	0.00111	0.00112	0.00111
	(!A1 * !B1 * !C1 * !X)	-0.00089	-0.00092	-0.00091
	(!A1 * !B1 * !C1 * !X)	0.00128	0.00129	0.00128

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00204	-0.00205	-0.00204
	(A1 * B1 * C1 * X)	0.00212	0.00216	0.00214
	(A1 * B1 * !C1 * X)	-0.00204	-0.00205	-0.00204
	(A1 * B1 * !C1 * X)	0.00212	0.00216	0.00214
	(A1 * !B1 * C1 * X)	-0.00204	-0.00205	-0.00204
	(A1 * !B1 * C1 * X)	0.00205	0.00207	0.00206
	(!A1 * B1 * X)	-0.00191	-0.00195	-0.00194
	(!A1 * B1 * X)	0.00221	0.00224	0.00222
	(!A1 * !B1 * C1 * X)	-0.00191	-0.00194	-0.00194
	(!A1 * !B1 * C1 * X)	0.00221	0.00224	0.00222
	(!A1 * !B1 * !C1 * !X)	-0.00186	-0.00191	-0.00189
	(!A1 * !B1 * !C1 * !X)	0.00226	0.00228	0.00226

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)	0.00105	0.00106	0.00104
	(A1 * A2 * C1 * X)	-0.00080	-0.00081	-0.00081
	(A1 * A2 * !C1 * X)	0.00105	0.00105	0.00104
	(A1 * A2 * !C1 * X)	-0.00073	-0.00074	-0.00074
	(A1 * !A2 * C1 * X)	0.00104	0.00104	0.00104
	(A1 * !A2 * C1 * X)	-0.00103	-0.00107	-0.00106
	(!A1 * C1 * X)	0.00104	0.00104	0.00103
	(!A1 * C1 * X)	-0.00103	-0.00107	-0.00106
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00109	0.00110	0.00109
	(A1 * A2 * C1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * !C1 * X)	0.00110	0.00109	0.00108
	(A1 * A2 * !C1 * X)	-0.00075	-0.00073	-0.00074
	(A1 * !A2 * C1 * X)	0.00108	0.00108	0.00108
	(A1 * !A2 * C1 * X)	-0.00103	-0.00105	-0.00106
	(!A1 * C1 * X)	0.00108	0.00108	0.00108
	(!A1 * C1 * X)	-0.00103	-0.00105	-0.00106
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00190	0.00191	0.00191
	(A1 * A2 * C1 * X)	-0.00170	-0.00168	-0.00168
	(A1 * A2 * !C1 * X)	0.00189	0.00190	0.00189
	(A1 * A2 * !C1 * X)	-0.00154	-0.00155	-0.00155
	(A1 * !A2 * C1 * X)	0.00189	0.00189	0.00189
	(A1 * !A2 * C1 * X)	-0.00216	-0.00222	-0.00220
	(!A1 * C1 * X)	0.00189	0.00190	0.00189
	(!A1 * C1 * X)	-0.00216	-0.00222	-0.00220

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)	-0.00104	-0.00104	-0.00104
	(A1 * A2 * C1 * X)	0.00080	0.00081	0.00081
	(A1 * A2 * !C1 * X)	-0.00103	-0.00103	-0.00102
	(A1 * A2 * !C1 * X)	0.00076	0.00076	0.00076
	(A1 * !A2 * C1 * X)	-0.00103	-0.00104	-0.00103
	(A1 * !A2 * C1 * X)	0.00105	0.00107	0.00106
	(!A1 * C1 * X)	-0.00103	-0.00104	-0.00103
	(!A1 * C1 * X)	0.00105	0.00107	0.00106
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00108	-0.00108	-0.00108
	(A1 * A2 * C1 * X)	0.00080	0.00081	0.00080
	(A1 * A2 * !C1 * X)	-0.00107	-0.00107	-0.00107
	(A1 * A2 * !C1 * X)	0.00076	0.00076	0.00076
	(A1 * !A2 * C1 * X)	-0.00108	-0.00107	-0.00107
	(A1 * !A2 * C1 * X)	0.00106	0.00105	0.00106
	(!A1 * C1 * X)	-0.00108	-0.00107	-0.00107
	(!A1 * C1 * X)	0.00106	0.00105	0.00106
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00190	-0.00190	-0.00190
	(A1 * A2 * C1 * X)	0.00170	0.00168	0.00168
	(A1 * A2 * !C1 * X)	-0.00187	-0.00187	-0.00186
	(A1 * A2 * !C1 * X)	0.00160	0.00159	0.00160
	(A1 * !A2 * C1 * X)	-0.00189	-0.00189	-0.00188
	(A1 * !A2 * C1 * X)	0.00221	0.00222	0.00220
	(!A1 * C1 * X)	-0.00189	-0.00189	-0.00188
	(!A1 * C1 * X)	0.00221	0.00222	0.00220

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00115	0.00115	0.00114
	(A1 * B1 * X)	-0.00068	-0.00068	-0.00067
	(A1 * A2 * !B1 * X)	0.00115	0.00115	0.00114
	(A1 * A2 * !B1 * X)	-0.00068	-0.00068	-0.00067
	(!A1 * B1 * X)	0.00115	0.00115	0.00114
	(!A1 * B1 * X)	-0.00068	-0.00068	-0.00067
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00115	0.00116	0.00116
	(A1 * B1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !B1 * X)	0.00115	0.00116	0.00116
	(A1 * A2 * !B1 * X)	-0.00069	-0.00070	-0.00069
	(!A1 * B1 * X)	0.00115	0.00116	0.00116
	(!A1 * B1 * X)	-0.00070	-0.00070	-0.00070
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00185	0.00185	0.00185
	(A1 * B1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * A2 * !B1 * X)	0.00185	0.00185	0.00185
	(A1 * A2 * !B1 * X)	-0.00135	-0.00135	-0.00135
	(!A1 * B1 * X)	0.00185	0.00185	0.00185
	(!A1 * B1 * X)	-0.00136	-0.00136	-0.00136

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00112	-0.00112	-0.00114
	(A1 * B1 * X)	0.00070	0.00070	0.00068
	(A1 * A2 * !B1 * X)	-0.00101	-0.00102	-0.00112
	(A1 * A2 * !B1 * X)	0.00077	0.00077	0.00069
	(!A1 * B1 * X)	-0.00111	-0.00112	-0.00114
	(!A1 * B1 * X)	0.00070	0.00070	0.00068
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00113	-0.00113	-0.00116
	(A1 * B1 * X)	0.00073	0.00072	0.00070
	(A1 * A2 * !B1 * X)	-0.00104	-0.00104	-0.00114
	(A1 * A2 * !B1 * X)	0.00079	0.00079	0.00072
	(!A1 * B1 * X)	-0.00113	-0.00113	-0.00116
	(!A1 * B1 * X)	0.00073	0.00072	0.00070
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00179	-0.00179	-0.00185
	(A1 * B1 * X)	0.00142	0.00142	0.00137
	(A1 * A2 * !B1 * X)	-0.00159	-0.00160	-0.00181
	(A1 * A2 * !B1 * X)	0.00155	0.00154	0.00139
	(!A1 * B1 * X)	-0.00178	-0.00178	-0.00185
	(!A1 * B1 * X)	0.00144	0.00143	0.00138

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21boi_1	11.18880
sky130_fd_sc_hs__a21boi_2	14.38560
sky130_fd_sc_hs__a21boi_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__a21boi_1	0.00260	0.00248	0.00242	0.15810
sky130_fd_sc_hs__a21boi_2	0.00491	0.00467	0.00237	0.31082
sky130_fd_sc_hs__a21boi_4	0.00972	0.00953	0.00349	0.59212

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	0.00014	0.00017
sky130_fd_sc_hs__a21boi_2	0.00000	0.00026	0.00034
sky130_fd_sc_hs__a21boi_4	0.00000	0.00045	0.00056

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)	0.25469	1.84132	13.36510
	A2->Y (FR)	0.31958	1.93537	13.60290
	B1_N->Y (RR)	0.30400	1.58360	9.09016
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.22107	1.61486	13.51800
	A2->Y (FR)	0.29253	1.68771	13.56820
	B1_N->Y (RR)	0.27181	1.34875	9.08987
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.21582	1.44373	13.51540
	A2->Y (FR)	0.28572	1.50490	13.45030
	B1_N->Y (RR)	0.21411	1.17413	9.37240

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.04710	0.59222	4.61379
	A2->Y (RF)	0.05171	0.57470	4.44853
	B1_N->Y (FF)	0.19604	0.90186	5.01250
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.04338	0.55551	4.77549
	A2->Y (RF)	0.05040	0.54296	4.57215
	B1_N->Y (FF)	0.22563	0.94841	5.44105
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.04412	0.52149	4.86907
	A2->Y (RF)	0.05084	0.49864	4.51651
	B1_N->Y (FF)	0.23242	0.93029	5.30435

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00051	0.00043	0.00042
	A1	0.00319	0.00311	0.00311
	A2	0.00087	0.00081	0.00079
	A2	0.00408	0.00402	0.00400
	B1_N	0.00528	0.00508	0.00501
	B1_N	0.00349	0.00328	0.00320
sky130_fd_sc_hs__a21boi_2	A1	0.00107	0.00097	0.00096
	A1	0.00626	0.00614	0.00617
	A2	0.00214	0.00198	0.00196
	A2	0.00838	0.00822	0.00818
	B1_N	0.00792	0.00774	0.00766
	B1_N	0.00697	0.00678	0.00671
sky130_fd_sc_hs__a21boi_4	A1	0.00227	0.00203	0.00206
	A1	0.01280	0.01256	0.01258
	A2	0.00398	0.00366	0.00364
	A2	0.01670	0.01636	0.01634
	B1_N	0.01388	0.01355	0.01359
	B1_N	0.01343	0.01310	0.01313

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00331	0.00321	0.00316
	A1	0.00068	0.00057	0.00051
	A2	0.00387	0.00380	0.00373
	A2	0.00067	0.00058	0.00052
	B1_N	0.00293	0.00284	0.00281
	B1_N	0.00468	0.00459	0.00458
sky130_fd_sc_hs__a21boi_2	A1	0.00582	0.00561	0.00557
	A1	0.00072	0.00049	0.00039
	A2	0.00694	0.00678	0.00670
	A2	0.00070	0.00052	0.00041
	B1_N	0.00534	0.00537	0.00545
	B1_N	0.00620	0.00627	0.00630
sky130_fd_sc_hs__a21boi_4	A1	0.01146	0.01105	0.01087
	A1	0.00113	0.00065	0.00054
	A2	0.01390	0.01354	0.01342
	A2	0.00120	0.00077	0.00060
	B1_N	0.01085	0.01106	0.01121
	B1_N	0.01112	0.01135	0.01151

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)	0.00103	0.00102	0.00101
	(A2 * !B1_N * !Y)	-0.00124	-0.00126	-0.00125
	(!A2 * B1_N * Y)	0.00045	0.00046	0.00044
	(!A2 * B1_N * Y)	-0.00143	-0.00144	-0.00145
	(!A2 * !B1_N * !Y)	0.00096	0.00096	0.00096
	(!A2 * !B1_N * !Y)	-0.00127	-0.00128	-0.00128
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00200	0.00201	0.00200
	(A2 * !B1_N * !Y)	-0.00237	-0.00242	-0.00241
	(!A2 * B1_N * Y)	0.00082	0.00082	0.00078
	(!A2 * B1_N * Y)	-0.00283	-0.00286	-0.00290
	(!A2 * !B1_N * !Y)	0.00188	0.00190	0.00189
	(!A2 * !B1_N * !Y)	-0.00246	-0.00248	-0.00247
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00392	0.00395	0.00393
	(A2 * !B1_N * !Y)	-0.00477	-0.00489	-0.00485
	(!A2 * B1_N * Y)	0.00154	0.00155	0.00148
	(!A2 * B1_N * Y)	-0.00573	-0.00578	-0.00585
	(!A2 * !B1_N * !Y)	0.00369	0.00373	0.00370
	(!A2 * !B1_N * !Y)	-0.00496	-0.00500	-0.00497

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)	-0.00101	-0.00102	-0.00101
	(A2 * !B1_N * !Y)	0.00125	0.00126	0.00125
	(!A2 * B1_N * Y)	-0.00043	-0.00043	-0.00043
	(!A2 * B1_N * Y)	0.00145	0.00146	0.00145
	(!A2 * !B1_N * !Y)	-0.00093	-0.00096	-0.00096
	(!A2 * !B1_N * !Y)	0.00127	0.00129	0.00128
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00200	-0.00201	-0.00200
	(A2 * !B1_N * !Y)	0.00242	0.00243	0.00241
	(!A2 * B1_N * Y)	-0.00077	-0.00077	-0.00076
	(!A2 * B1_N * Y)	0.00291	0.00292	0.00291
	(!A2 * !B1_N * !Y)	-0.00184	-0.00190	-0.00189
	(!A2 * !B1_N * !Y)	0.00248	0.00249	0.00247
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00392	-0.00394	-0.00392
	(A2 * !B1_N * !Y)	0.00488	0.00490	0.00485
	(!A2 * B1_N * Y)	-0.00144	-0.00145	-0.00144
	(!A2 * B1_N * Y)	0.00585	0.00588	0.00586
	(!A2 * !B1_N * !Y)	-0.00360	-0.00373	-0.00370
	(!A2 * !B1_N * !Y)	0.00500	0.00503	0.00499

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)	0.00108	0.00107	0.00106
	(A1 * !B1_N * !Y)	-0.00119	-0.00121	-0.00120
	(!A1 * B1_N * Y)	0.00098	0.00099	0.00099
	(!A1 * B1_N * Y)	-0.00123	-0.00124	-0.00124
	(!A1 * !B1_N * !Y)	0.00099	0.00101	0.00100
	(!A1 * !B1_N * !Y)	-0.00123	-0.00124	-0.00123
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00197	0.00197	0.00196
	(A1 * !B1_N * !Y)	-0.00236	-0.00242	-0.00240
	(!A1 * B1_N * Y)	0.00184	0.00186	0.00185
	(!A1 * B1_N * Y)	-0.00245	-0.00248	-0.00246
	(!A1 * !B1_N * !Y)	0.00186	0.00186	0.00185
	(!A1 * !B1_N * !Y)	-0.00247	-0.00247	-0.00246
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00398	0.00399	0.00397
	(A1 * !B1_N * !Y)	-0.00475	-0.00486	-0.00483
	(!A1 * B1_N * Y)	0.00354	0.00359	0.00356
	(!A1 * B1_N * Y)	-0.00513	-0.00517	-0.00515
	(!A1 * !B1_N * !Y)	0.00374	0.00380	0.00376
	(!A1 * !B1_N * !Y)	-0.00492	-0.00497	-0.00494

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)	-0.00106	-0.00106	-0.00106
	(A1 * !B1_N * !Y)	0.00121	0.00121	0.00120
	(!A1 * B1_N * Y)	-0.00098	-0.00099	-0.00099
	(!A1 * B1_N * Y)	0.00124	0.00125	0.00124
	(!A1 * !B1_N * !Y)	-0.00098	-0.00101	-0.00100
	(!A1 * !B1_N * !Y)	0.00123	0.00124	0.00124
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00196	-0.00197	-0.00196
	(A1 * !B1_N * !Y)	0.00239	0.00242	0.00240
	(!A1 * B1_N * Y)	-0.00181	-0.00186	-0.00185
	(!A1 * B1_N * Y)	0.00248	0.00248	0.00247
	(!A1 * !B1_N * !Y)	-0.00182	-0.00186	-0.00185
	(!A1 * !B1_N * !Y)	0.00248	0.00248	0.00247
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00398	-0.00398	-0.00397
	(A1 * !B1_N * !Y)	0.00484	0.00486	0.00483
	(!A1 * B1_N * Y)	-0.00349	-0.00359	-0.00356
	(!A1 * B1_N * Y)	0.00519	0.00518	0.00516
	(!A1 * !B1_N * !Y)	-0.00370	-0.00379	-0.00376
	(!A1 * !B1_N * !Y)	0.00498	0.00499	0.00496

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)	0.00332	0.00313	0.00302
	(A1 * A2 * !Y)	0.00071	0.00052	0.00043
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00399	0.00380	0.00366
	(A1 * A2 * !Y)	0.00144	0.00123	0.00112
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00625	0.00595	0.00570
	(A1 * A2 * !Y)	0.00248	0.00217	0.00194

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)	0.00072	0.00058	0.00056
	(A1 * A2 * !Y)	0.00330	0.00317	0.00315
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00195	0.00181	0.00179
	(A1 * A2 * !Y)	0.00449	0.00434	0.00432
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00413	0.00391	0.00388
	(A1 * A2 * !Y)	0.00785	0.00763	0.00760

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21bo_1	12.78720
sky130_fd_sc_hs__a21bo_2	12.78720
sky130_fd_sc_hs__a21bo_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__a21bo_1	0.00240	0.00229	0.00203	0.34033
sky130_fd_sc_hs__a21bo_2	0.00258	0.00239	0.00212	0.67799
sky130_fd_sc_hs__a21bo_4	0.00442	0.00465	0.00248	1.30360

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	0.00021	0.00027
sky130_fd_sc_hs__a21bo_2	0.00000	0.00028	0.00036
sky130_fd_sc_hs__a21bo_4	0.00000	0.00053	0.00072

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)	0.17169	1.19857	8.60803
	A2->X (RR)	0.17580	1.20771	8.79125
	B1_N->X (FR)	0.31239	1.60630	11.24990
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.15866	1.05360	8.77278
	A2->X (RR)	0.16350	1.05290	8.93241
	B1_N->X (FR)	0.32152	1.46977	11.45940
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.16164	0.94551	8.86971
	A2->X (RR)	0.16897	0.95384	9.04440
	B1_N->X (FR)	0.36779	1.42125	11.90450

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.42217	1.24028	6.75162
	A2->X (FF)	0.47708	1.30059	6.90241
	B1_N->X (RF)	0.46561	0.94107	3.17158
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.55614	1.37704	7.13579
	A2->X (FF)	0.63002	1.46095	7.29895
	B1_N->X (RF)	0.63566	1.13079	3.45440
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.51773	1.30704	7.05037
	A2->X (FF)	0.57205	1.36657	7.19808
	B1_N->X (RF)	0.56311	1.03505	3.40818

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00550	0.00544	0.00537
	A1	0.00296	0.00291	0.00285
	A2	0.00602	0.00604	0.00600
	A2	0.00297	0.00299	0.00296
	B1_N	0.00535	0.00531	0.00517
	B1_N	0.00671	0.00665	0.00653
sky130_fd_sc_hs__a21bo_2	A1	0.00729	0.00737	0.00734
	A1	0.00464	0.00484	0.00469
	A2	0.00778	0.00792	0.00796
	A2	0.00462	0.00476	0.00484
	B1_N	0.00740	0.00745	0.00729
	B1_N	0.00878	0.00883	0.00866
sky130_fd_sc_hs__a21bo_4	A1	0.01331	0.01345	0.01352
	A1	0.00874	0.00889	0.00904
	A2	0.01472	0.01499	0.01514
	A2	0.00875	0.00899	0.00923
	B1_N	0.01304	0.01335	0.01318
	B1_N	0.01416	0.01446	0.01436

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00300	0.00303	0.00336
	A1	0.00557	0.00560	0.00557
	A2	0.00309	0.00318	0.00317
	A2	0.00614	0.00622	0.00619
	B1_N	0.00698	0.00682	0.00669
	B1_N	0.00559	0.00544	0.00528
sky130_fd_sc_hs__a21bo_2	A1	0.00434	0.00456	0.00576
	A1	0.00703	0.00725	0.00726
	A2	0.00469	0.00498	0.00622
	A2	0.00784	0.00813	0.00814
	B1_N	0.00907	0.00901	0.00889
	B1_N	0.00763	0.00762	0.00743
sky130_fd_sc_hs__a21bo_4	A1	0.00857	0.00907	0.01057
	A1	0.01320	0.01372	0.01378
	A2	0.00871	0.00930	0.01102
	A2	0.01466	0.01527	0.01532
	B1_N	0.01513	0.01534	0.01534
	B1_N	0.01391	0.01426	0.01407

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)	0.00087	0.00087	0.00087
	(A2 * !B1_N * X)	-0.00117	-0.00119	-0.00119
	(!A2 * B1_N * !X)	0.00037	0.00037	0.00036
	(!A2 * B1_N * !X)	-0.00137	-0.00137	-0.00138
	(!A2 * !B1_N * X)	0.00081	0.00082	0.00081
	(!A2 * !B1_N * X)	-0.00122	-0.00123	-0.00122
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00105	0.00104	0.00104
	(A2 * !B1_N * X)	-0.00115	-0.00117	-0.00116
	(!A2 * B1_N * !X)	0.00047	0.00047	0.00045
	(!A2 * B1_N * !X)	-0.00136	-0.00136	-0.00137
	(!A2 * !B1_N * X)	0.00098	0.00099	0.00098
	(!A2 * !B1_N * X)	-0.00119	-0.00120	-0.00119
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00166	0.00166	0.00164
	(A2 * !B1_N * X)	-0.00219	-0.00222	-0.00221
	(!A2 * B1_N * !X)	0.00061	0.00061	0.00058
	(!A2 * B1_N * !X)	-0.00261	-0.00262	-0.00266
	(!A2 * !B1_N * X)	0.00154	0.00155	0.00154
	(!A2 * !B1_N * X)	-0.00227	-0.00228	-0.00227

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)	-0.00086	-0.00087	-0.00087
	(A2 * !B1_N * X)	0.00118	0.00119	0.00119
	(!A2 * B1_N * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * B1_N * !X)	0.00138	0.00138	0.00138
	(!A2 * !B1_N * X)	-0.00080	-0.00082	-0.00081
	(!A2 * !B1_N * X)	0.00123	0.00123	0.00122
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00104	-0.00104	-0.00104
	(A2 * !B1_N * X)	0.00116	0.00117	0.00116
	(!A2 * B1_N * !X)	-0.00045	-0.00045	-0.00045
	(!A2 * B1_N * !X)	0.00137	0.00137	0.00138
	(!A2 * !B1_N * X)	-0.00096	-0.00099	-0.00098
	(!A2 * !B1_N * X)	0.00119	0.00120	0.00119
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00165	-0.00165	-0.00164
	(A2 * !B1_N * X)	0.00221	0.00222	0.00221
	(!A2 * B1_N * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * B1_N * !X)	0.00266	0.00266	0.00266
	(!A2 * !B1_N * X)	-0.00150	-0.00155	-0.00154
	(!A2 * !B1_N * X)	0.00227	0.00229	0.00228

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)	0.00102	0.00102	0.00102
	(A1 * !B1_N * X)	-0.00107	-0.00108	-0.00109
	(!A1 * B1_N * !X)	0.00096	0.00097	0.00096
	(!A1 * B1_N * !X)	-0.00111	-0.00112	-0.00111
	(!A1 * !B1_N * X)	0.00096	0.00096	0.00096
	(!A1 * !B1_N * X)	-0.00111	-0.00111	-0.00111
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00102	0.00102	0.00101
	(A1 * !B1_N * X)	-0.00111	-0.00114	-0.00113
	(!A1 * B1_N * !X)	0.00095	0.00096	0.00095
	(!A1 * B1_N * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * !B1_N * X)	0.00096	0.00096	0.00095
	(!A1 * !B1_N * X)	-0.00116	-0.00117	-0.00116
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00206	0.00207	0.00205
	(A1 * !B1_N * X)	-0.00216	-0.00222	-0.00220
	(!A1 * B1_N * !X)	0.00193	0.00196	0.00194
	(!A1 * B1_N * !X)	-0.00225	-0.00227	-0.00225
	(!A1 * !B1_N * X)	0.00193	0.00195	0.00194
	(!A1 * !B1_N * X)	-0.00225	-0.00226	-0.00225

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)	-0.00101	-0.00101	-0.00101
	(A1 * !B1_N * X)	0.00108	0.00108	0.00109
	(!A1 * B1_N * !X)	-0.00095	-0.00097	-0.00096
	(!A1 * B1_N * !X)	0.00111	0.00112	0.00112
	(!A1 * !B1_N * X)	-0.00095	-0.00096	-0.00096
	(!A1 * !B1_N * X)	0.00112	0.00112	0.00112
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00102	-0.00101	-0.00101
	(A1 * !B1_N * X)	0.00114	0.00114	0.00113
	(!A1 * B1_N * !X)	-0.00093	-0.00096	-0.00095
	(!A1 * B1_N * !X)	0.00116	0.00117	0.00117
	(!A1 * !B1_N * X)	-0.00094	-0.00096	-0.00095
	(!A1 * !B1_N * X)	0.00116	0.00117	0.00116
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00205	-0.00207	-0.00205
	(A1 * !B1_N * X)	0.00219	0.00222	0.00220
	(!A1 * B1_N * !X)	-0.00189	-0.00196	-0.00194
	(!A1 * B1_N * !X)	0.00225	0.00228	0.00226
	(!A1 * !B1_N * X)	-0.00190	-0.00195	-0.00194
	(!A1 * !B1_N * X)	0.00225	0.00228	0.00226

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)	0.00274	0.00257	0.00249
	(A1 * A2 * X)	0.00056	0.00038	0.00031
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00310	0.00292	0.00283
	(A1 * A2 * X)	0.00080	0.00062	0.00053
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00424	0.00406	0.00392
	(A1 * A2 * X)	0.00157	0.00138	0.00126

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)	0.00086	0.00075	0.00074
	(A1 * A2 * X)	0.00303	0.00293	0.00291
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00103	0.00090	0.00089
	(A1 * A2 * X)	0.00332	0.00318	0.00317
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00157	0.00145	0.00141
	(A1 * A2 * X)	0.00423	0.00411	0.00407

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21oi_1	6.39360
sky130_fd_sc_hs__a21oi_2	12.78720
sky130_fd_sc_hs__a21oi_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__a21oi_1	0.00269	0.00248	0.00266	0.15847
sky130_fd_sc_hs__a21oi_2	0.00487	0.00499	0.00395	0.29516
sky130_fd_sc_hs__a21oi_4	0.00993	0.00948	0.00779	0.58153

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.00009	0.00011
sky130_fd_sc_hs__a21oi_2	0.00000	0.00017	0.00019
sky130_fd_sc_hs__a21oi_4	0.00000	0.00034	0.00039

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)	0.25674	1.84569	13.39450
	A2->Y (FR)	0.31573	1.93318	13.61520
	B1->Y (FR)	0.26094	1.81421	13.25310
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.22474	1.64019	13.57770
	A2->Y (FR)	0.30769	1.71113	13.53640
	B1->Y (FR)	0.14361	1.50755	13.17990
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.20907	1.44491	13.54670
	A2->Y (FR)	0.27923	1.50773	13.48310
	B1->Y (FR)	0.13109	1.31764	13.16730

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.04748	0.59244	4.61384
	A2->Y (RF)	0.05121	0.57480	4.45397
	B1->Y (RF)	0.03517	0.50284	4.03422
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.04298	0.55145	4.70237
	A2->Y (RF)	0.05205	0.54055	4.49675
	B1->Y (RF)	0.04032	0.58232	5.11313
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.04318	0.51801	4.83695
	A2->Y (RF)	0.04945	0.49538	4.48281
	B1->Y (RF)	0.04062	0.54917	5.30175

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00010	-0.00018	-0.00019
	A1	0.00334	0.00326	0.00326
	A2	0.00016	0.00010	0.00008
	A2	0.00412	0.00407	0.00404
	B1	0.00013	0.00004	0.00002
	B1	0.00360	0.00352	0.00348
sky130_fd_sc_hs__a21oi_2	A1	-0.00033	-0.00043	-0.00044
	A1	0.00608	0.00595	0.00597
	A2	0.00063	0.00044	0.00042
	A2	0.00833	0.00814	0.00812
	B1	0.00122	0.00109	0.00108
	B1	0.00696	0.00685	0.00681
sky130_fd_sc_hs__a21oi_4	A1	-0.00107	-0.00130	-0.00127
	A1	0.01202	0.01180	0.01185
	A2	0.00081	0.00048	0.00046
	A2	0.01623	0.01589	0.01588
	B1	0.00216	0.00185	0.00183
	B1	0.01345	0.01315	0.01311

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00397	0.00387	0.00381
	A1	0.00061	0.00051	0.00044
	A2	0.00454	0.00447	0.00440
	A2	0.00061	0.00052	0.00046
	B1	0.00335	0.00333	0.00331
	B1	-0.00015	-0.00018	-0.00021
sky130_fd_sc_hs__a21oi_2	A1	0.00696	0.00676	0.00669
	A1	0.00070	0.00048	0.00038
	A2	0.00842	0.00824	0.00815
	A2	0.00073	0.00053	0.00041
	B1	0.00492	0.00490	0.00495
	B1	-0.00093	-0.00097	-0.00097
sky130_fd_sc_hs__a21oi_4	A1	0.01407	0.01357	0.01339
	A1	0.00121	0.00066	0.00057
	A2	0.01646	0.01612	0.01592
	A2	0.00115	0.00073	0.00056
	B1	0.00969	0.00955	0.00988
	B1	-0.00181	-0.00195	-0.00187

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00104	0.00104	0.00103
	(A2 * B1 * !Y)	-0.00117	-0.00119	-0.00119
	(!A2 * B1 * !Y)	0.00097	0.00097	0.00097
	(!A2 * B1 * !Y)	-0.00123	-0.00124	-0.00123
	(!A2 * !B1 * Y)	0.00037	0.00037	0.00036
	(!A2 * !B1 * Y)	-0.00147	-0.00148	-0.00149
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00208	0.00206	0.00205
	(A2 * B1 * !Y)	-0.00229	-0.00235	-0.00232
	(!A2 * B1 * !Y)	0.00187	0.00190	0.00188
	(!A2 * B1 * !Y)	-0.00241	-0.00244	-0.00242
	(!A2 * !B1 * Y)	0.00081	0.00080	0.00076
	(!A2 * !B1 * Y)	-0.00279	-0.00280	-0.00285
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00414	0.00415	0.00413
	(A2 * B1 * !Y)	-0.00451	-0.00466	-0.00463
	(!A2 * B1 * !Y)	0.00388	0.00392	0.00388
	(!A2 * B1 * !Y)	-0.00480	-0.00479	-0.00480
	(!A2 * !B1 * Y)	0.00151	0.00151	0.00144
	(!A2 * !B1 * Y)	-0.00576	-0.00581	-0.00589

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00103	-0.00104	-0.00103
	(A2 * B1 * !Y)	0.00118	0.00119	0.00119
	(!A2 * B1 * !Y)	-0.00094	-0.00097	-0.00097
	(!A2 * B1 * !Y)	0.00123	0.00124	0.00123
	(!A2 * !B1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * Y)	0.00151	0.00149	0.00149
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00206	-0.00206	-0.00205
	(A2 * B1 * !Y)	0.00234	0.00235	0.00232
	(!A2 * B1 * !Y)	-0.00180	-0.00190	-0.00188
	(!A2 * B1 * !Y)	0.00243	0.00245	0.00242
	(!A2 * !B1 * Y)	-0.00074	-0.00075	-0.00074
	(!A2 * !B1 * Y)	0.00284	0.00286	0.00285
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00414	-0.00415	-0.00413
	(A2 * B1 * !Y)	0.00466	0.00466	0.00463
	(!A2 * B1 * !Y)	-0.00373	-0.00391	-0.00388
	(!A2 * B1 * !Y)	0.00480	0.00479	0.00481
	(!A2 * !B1 * Y)	-0.00141	-0.00141	-0.00140
	(!A2 * !B1 * Y)	0.00588	0.00592	0.00590

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00106	0.00104	0.00104
	(A1 * B1 * !Y)	-0.00117	-0.00119	-0.00119
	(!A1 * B1 * !Y)	0.00097	0.00098	0.00097
	(!A1 * B1 * !Y)	-0.00123	-0.00124	-0.00123
	(!A1 * !B1 * Y)	0.00097	0.00098	0.00097
	(!A1 * !B1 * Y)	-0.00123	-0.00124	-0.00123
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00216	0.00214	0.00212
	(A1 * B1 * !Y)	-0.00229	-0.00235	-0.00233
	(!A1 * B1 * !Y)	0.00197	0.00198	0.00196
	(!A1 * B1 * !Y)	-0.00243	-0.00244	-0.00243
	(!A1 * !B1 * Y)	0.00187	0.00187	0.00187
	(!A1 * !B1 * Y)	-0.00253	-0.00252	-0.00252
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00405	0.00404	0.00402
	(A1 * B1 * !Y)	-0.00466	-0.00480	-0.00477
	(!A1 * B1 * !Y)	0.00374	0.00378	0.00375
	(!A1 * B1 * !Y)	-0.00494	-0.00498	-0.00495
	(!A1 * !B1 * Y)	0.00371	0.00374	0.00371
	(!A1 * !B1 * Y)	-0.00499	-0.00502	-0.00499

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * !Y)	0.00119	0.00119	0.00119
	(!A1 * B1 * !Y)	-0.00095	-0.00098	-0.00097
	(!A1 * B1 * !Y)	0.00123	0.00125	0.00123
	(!A1 * !B1 * Y)	-0.00095	-0.00098	-0.00097
	(!A1 * !B1 * Y)	0.00123	0.00124	0.00124
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00213	-0.00214	-0.00212
	(A1 * B1 * !Y)	0.00234	0.00235	0.00233
	(!A1 * B1 * !Y)	-0.00192	-0.00198	-0.00196
	(!A1 * B1 * !Y)	0.00245	0.00245	0.00243
	(!A1 * !B1 * Y)	-0.00182	-0.00187	-0.00187
	(!A1 * !B1 * Y)	0.00254	0.00254	0.00252
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00403	-0.00404	-0.00402
	(A1 * B1 * !Y)	0.00478	0.00480	0.00477
	(!A1 * B1 * !Y)	-0.00368	-0.00378	-0.00375
	(!A1 * B1 * !Y)	0.00499	0.00501	0.00497
	(!A1 * !B1 * Y)	-0.00364	-0.00374	-0.00371
	(!A1 * !B1 * Y)	0.00503	0.00504	0.00500

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00124	0.00122	0.00122
	(A1 * A2 * !Y)	-0.00074	-0.00073	-0.00073
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00137	0.00137	0.00137
	(A1 * A2 * !Y)	-0.00151	-0.00152	-0.00151
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00265	0.00264	0.00264
	(A1 * A2 * !Y)	-0.00294	-0.00292	-0.00292

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00114	-0.00114	-0.00122
	(A1 * A2 * !Y)	0.00080	0.00080	0.00075
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00120	-0.00122	-0.00136
	(A1 * A2 * !Y)	0.00165	0.00165	0.00154
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00232	-0.00235	-0.00262
	(A1 * A2 * !Y)	0.00319	0.00318	0.00298

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21o_1	11.18880
sky130_fd_sc_hs__a21o_2	11.18880
sky130_fd_sc_hs__a21o_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__a21o_1	0.00224	0.00227	0.00233	0.36040
sky130_fd_sc_hs__a21o_2	0.00252	0.00239	0.00259	0.72772
sky130_fd_sc_hs__a21o_4	0.00453	0.00425	0.00469	1.40041

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	0.00016	0.00021
sky130_fd_sc_hs__a21o_2	0.00000	0.00023	0.00031
sky130_fd_sc_hs__a21o_4	0.00000	0.00045	0.00061

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)	0.16331	1.16582	8.52126
	A2->X (RR)	0.16891	1.17847	8.71964
	B1->X (RR)	0.13289	1.11497	8.45751
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.15449	1.03052	8.76792
	A2->X (RR)	0.15956	1.03378	8.92059
	B1->X (RR)	0.12051	0.97876	8.69528
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.17170	0.95098	8.88460
	A2->X (RR)	0.17891	0.95621	9.05695
	B1->X (RR)	0.12502	0.88016	8.78687

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.40044	1.21950	6.75690
	A2->X (FF)	0.46403	1.28774	6.94037
	B1->X (FF)	0.40869	1.17642	6.32699
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.52920	1.34992	7.15219
	A2->X (FF)	0.60265	1.43164	7.31417
	B1->X (FF)	0.55109	1.31993	6.79478
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.52271	1.31435	7.17140
	A2->X (FF)	0.59550	1.39300	7.34147
	B1->X (FF)	0.53546	1.27088	6.79531

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00587	0.00580	0.00574
	A1	0.00297	0.00291	0.00286
	A2	0.00654	0.00654	0.00648
	A2	0.00297	0.00297	0.00292
	B1	0.00521	0.00502	0.00494
	B1	0.00222	0.00204	0.00197
sky130_fd_sc_hs__a21o_2	A1	0.00785	0.00791	0.00790
	A1	0.00466	0.00472	0.00473
	A2	0.00847	0.00860	0.00862
	A2	0.00466	0.00479	0.00484
	B1	0.00732	0.00729	0.00721
	B1	0.00397	0.00393	0.00388
sky130_fd_sc_hs__a21o_4	A1	0.01482	0.01496	0.01502
	A1	0.00876	0.00891	0.00908
	A2	0.01579	0.01609	0.01622
	A2	0.00876	0.00905	0.00928
	B1	0.01352	0.01351	0.01344
	B1	0.00726	0.00724	0.00717

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00233	0.00236	0.00252
	A1	0.00527	0.00529	0.00527
	A2	0.00239	0.00247	0.00248
	A2	0.00596	0.00604	0.00600
	B1	0.00258	0.00247	0.00291
	B1	0.00552	0.00552	0.00550
sky130_fd_sc_hs__a21o_2	A1	0.00373	0.00396	0.00400
	A1	0.00698	0.00722	0.00722
	A2	0.00397	0.00427	0.00590
	A2	0.00779	0.00809	0.00810
	B1	0.00402	0.00422	0.00492
	B1	0.00732	0.00752	0.00753
sky130_fd_sc_hs__a21o_4	A1	0.00755	0.00805	0.01067
	A1	0.01372	0.01422	0.01429
	A2	0.00829	0.00887	0.00907
	A2	0.01534	0.01593	0.01601
	B1	0.00739	0.00762	0.01024
	B1	0.01444	0.01484	0.01493

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00083	0.00082	0.00082
	(A2 * B1 * X)	-0.00107	-0.00110	-0.00109
	(!A2 * B1 * X)	0.00077	0.00077	0.00077
	(!A2 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A2 * !B1 * !X)	0.00033	0.00033	0.00031
	(!A2 * !B1 * !X)	-0.00128	-0.00128	-0.00130
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00099	0.00099	0.00098
	(A2 * B1 * X)	-0.00108	-0.00111	-0.00110
	(!A2 * B1 * X)	0.00092	0.00093	0.00092
	(!A2 * B1 * X)	-0.00115	-0.00115	-0.00115
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00039
	(!A2 * !B1 * !X)	-0.00133	-0.00133	-0.00135
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00176	0.00177	0.00176
	(A2 * B1 * X)	-0.00212	-0.00220	-0.00218
	(!A2 * B1 * X)	0.00165	0.00167	0.00167
	(!A2 * B1 * X)	-0.00225	-0.00228	-0.00226
	(!A2 * !B1 * !X)	0.00071	0.00071	0.00067
	(!A2 * !B1 * !X)	-0.00265	-0.00265	-0.00270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00082	-0.00082	-0.00082
	(A2 * B1 * X)	0.00109	0.00110	0.00109
	(!A2 * B1 * X)	-0.00075	-0.00077	-0.00077
	(!A2 * B1 * X)	0.00113	0.00114	0.00113
	(!A2 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !X)	0.00129	0.00130	0.00130
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00098	-0.00099	-0.00098
	(A2 * B1 * X)	0.00109	0.00111	0.00110
	(!A2 * B1 * X)	-0.00090	-0.00093	-0.00092
	(!A2 * B1 * X)	0.00115	0.00117	0.00115
	(!A2 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * !X)	0.00134	0.00135	0.00135
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00176	-0.00177	-0.00176
	(A2 * B1 * X)	0.00217	0.00220	0.00218
	(!A2 * B1 * X)	-0.00162	-0.00167	-0.00167
	(!A2 * B1 * X)	0.00226	0.00229	0.00227
	(!A2 * !B1 * !X)	-0.00065	-0.00065	-0.00065
	(!A2 * !B1 * !X)	0.00269	0.00270	0.00270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00104	0.00104	0.00103
	(A1 * B1 * X)	-0.00105	-0.00109	-0.00108
	(!A1 * B1 * X)	0.00099	0.00100	0.00099
	(!A1 * B1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * !B1 * !X)	0.00099	0.00099	0.00099
	(!A1 * !B1 * !X)	-0.00111	-0.00112	-0.00111
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00105	0.00105	0.00104
	(A1 * B1 * X)	-0.00108	-0.00111	-0.00110
	(!A1 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * B1 * X)	-0.00114	-0.00115	-0.00115
	(!A1 * !B1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * !X)	-0.00114	-0.00115	-0.00115
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00173	0.00174	0.00173
	(A1 * B1 * X)	-0.00212	-0.00219	-0.00218
	(!A1 * B1 * X)	0.00164	0.00164	0.00163
	(!A1 * B1 * X)	-0.00226	-0.00227	-0.00226
	(!A1 * !B1 * !X)	0.00163	0.00163	0.00162
	(!A1 * !B1 * !X)	-0.00227	-0.00227	-0.00226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00104	-0.00104	-0.00103
	(A1 * B1 * X)	0.00107	0.00109	0.00108
	(!A1 * B1 * X)	-0.00097	-0.00099	-0.00099
	(!A1 * B1 * X)	0.00112	0.00112	0.00112
	(!A1 * !B1 * !X)	-0.00097	-0.00099	-0.00099
	(!A1 * !B1 * !X)	0.00111	0.00112	0.00112
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00105	-0.00104	-0.00104
	(A1 * B1 * X)	0.00111	0.00111	0.00110
	(!A1 * B1 * X)	-0.00096	-0.00099	-0.00098
	(!A1 * B1 * X)	0.00114	0.00116	0.00115
	(!A1 * !B1 * !X)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1 * !X)	0.00114	0.00116	0.00115
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00172	-0.00174	-0.00173
	(A1 * B1 * X)	0.00217	0.00219	0.00218
	(!A1 * B1 * X)	-0.00160	-0.00164	-0.00163
	(!A1 * B1 * X)	0.00227	0.00227	0.00226
	(!A1 * !B1 * !X)	-0.00159	-0.00163	-0.00162
	(!A1 * !B1 * !X)	0.00228	0.00228	0.00227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * X)	-0.00069	-0.00069	-0.00069
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00119	0.00119	0.00119
	(A1 * A2 * X)	-0.00068	-0.00068	-0.00068
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00205	0.00206	0.00206
	(A1 * A2 * X)	-0.00141	-0.00141	-0.00141

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00092	-0.00092	-0.00099
	(A1 * A2 * X)	0.00076	0.00075	0.00070
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00111	-0.00111	-0.00118
	(A1 * A2 * X)	0.00075	0.00075	0.00070
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00190	-0.00191	-0.00205
	(A1 * A2 * X)	0.00156	0.00155	0.00144

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221oi_1	12.78720
sky130_fd_sc_hs__a221oi_2	19.18080
sky130_fd_sc_hs__a221oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__a221oi_1	0.00258	0.00250	0.00264	0.00269	0.00276	0.09613
sky130_fd_sc_hs__a221oi_2	0.00548	0.00486	0.00540	0.00482	0.00505	0.17655
sky130_fd_sc_hs__a221oi_4	0.01003	0.00982	0.00995	0.00949	0.01000	0.32949

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.00011	0.00018
sky130_fd_sc_hs__a221oi_2	0.00000	0.00022	0.00037
sky130_fd_sc_hs__a221oi_4	0.00000	0.00044	0.00074

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)	0.70836	2.48992	13.51770
	A2->Y (FR)	0.80105	2.59758	13.63920
	B1->Y (FR)	0.63592	2.38681	13.62880
	B2->Y (FR)	0.73977	2.50736	13.79450
	C1->Y (FR)	0.59519	2.29623	13.19290
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.62302	2.13728	13.15160
	A2->Y (FR)	0.77248	2.32664	13.58960
	B1->Y (FR)	0.58432	2.08927	13.48500
	B2->Y (FR)	0.70140	2.23436	13.74210
	C1->Y (FR)	0.54632	2.01582	13.16210
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.65194	1.98899	13.29240
	A2->Y (FR)	0.78658	2.14355	13.53200
	B1->Y (FR)	0.56957	1.87917	13.38920
	B2->Y (FR)	0.70914	2.04540	13.70440
	C1->Y (FR)	0.55754	1.83236	13.14390

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.05336	0.56524	3.85092
	A2->Y (RF)	0.05784	0.54938	3.77463
	B1->Y (RF)	0.05599	0.55384	3.84642
	B2->Y (RF)	0.06163	0.54351	3.77898
	C1->Y (RF)	0.04052	0.47200	3.40761
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.04719	0.52039	3.81437
	A2->Y (RF)	0.05463	0.51598	3.76702
	B1->Y (RF)	0.04896	0.50210	3.77244
	B2->Y (RF)	0.05533	0.50000	3.72922
	C1->Y (RF)	0.03679	0.42934	3.36590
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.04871	0.50159	3.89798
	A2->Y (RF)	0.05535	0.47956	3.68988
	B1->Y (RF)	0.05222	0.48437	3.86782
	B2->Y (RF)	0.05863	0.46652	3.66034
	C1->Y (RF)	0.03462	0.38924	3.28108

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00132	0.00118	0.00116
	A1	0.00609	0.00594	0.00592
	A2	0.00151	0.00143	0.00140
	A2	0.00690	0.00682	0.00678
	B1	0.00133	0.00118	0.00115
	B1	0.00550	0.00536	0.00532
	B2	0.00160	0.00150	0.00146
	B2	0.00638	0.00627	0.00623
	C1	0.00155	0.00141	0.00137
	C1	0.00586	0.00571	0.00566
sky130_fd_sc_hs__a221oi_2	A1	0.00152	0.00123	0.00119
	A1	0.01133	0.01104	0.01099
	A2	0.00243	0.00219	0.00214
	A2	0.01299	0.01277	0.01272
	B1	0.00174	0.00145	0.00140
	B1	0.01022	0.00991	0.00988
	B2	0.00243	0.00220	0.00215
	B2	0.01175	0.01152	0.01147
	C1	0.00236	0.00205	0.00202
	C1	0.01076	0.01046	0.01038

sky130_fd_sc_hs__a221oi_4	**A1**	0.00276	0.00214	0.00208
	A1	0.02213	0.02149	0.02142
	A2	0.00419	0.00373	0.00364
	A2	0.02578	0.02533	0.02522
	B1	0.00263	0.00203	0.00196
	B1	0.01959	0.01901	0.01894
	B2	0.00416	0.00374	0.00364
	B2	0.02337	0.02295	0.02286
	C1	0.00407	0.00351	0.00344
	C1	0.02084	0.02032	0.01963

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.00618	0.00607	0.00589
	A1	0.00178	0.00167	0.00151
	A2	0.00683	0.00673	0.00654
	A2	0.00177	0.00166	0.00151
	B1	0.00481	0.00473	0.00463
	B1	0.00066	0.00059	0.00049
	B2	0.00543	0.00538	0.00526
	B2	0.00064	0.00058	0.00048
	C1	0.00418	0.00416	0.00411
	C1	-0.00020	-0.00023	-0.00028

sky130_fd_sc_hs__a221oi_2	**A1**	0.01167	0.01142	0.01109
	A1	0.00254	0.00229	0.00201
	A2	0.01263	0.01243	0.01208
	A2	0.00264	0.00243	0.00215
	B1	0.00911	0.00894	0.00875
	B1	0.00067	0.00048	0.00031
	B2	0.01015	0.01005	0.00984
	B2	0.00078	0.00065	0.00048
	C1	0.00769	0.00765	0.00760
	C1	-0.00087	-0.00093	-0.00099
sky130_fd_sc_hs__a221oi_4	**A1**	0.02360	0.02303	0.02247
	A1	0.00566	0.00510	0.00458
	A2	0.02598	0.02554	0.02485
	A2	0.00559	0.00513	0.00458
	B1	0.01850	0.01812	0.01779
	B1	0.00165	0.00123	0.00100
	B2	0.02091	0.02066	0.02031
	B2	0.00166	0.00135	0.00108
	C1	0.01592	0.01574	0.01571
	C1	-0.00121	-0.00143	-0.00145

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)**	0.00098	0.00097	0.00097
	(A2 * B1 * B2 * C1 * !Y)	-0.00116	-0.00118	-0.00118
	(A2 * B1 * B2 * !C1 * !Y)	0.00098	0.00097	0.00097
	(A2 * B1 * B2 * !C1 * !Y)	-0.00116	-0.00119	-0.00118
	(A2 * B1 * !B2 * C1 * !Y)	0.00098	0.00098	0.00097
	(A2 * B1 * !B2 * C1 * !Y)	-0.00111	-0.00113	-0.00113
	(A2 * !B1 * C1 * !Y)	0.00098	0.00098	0.00097
	(A2 * !B1 * C1 * !Y)	-0.00111	-0.00113	-0.00113
	(!A2 * B1 * B2 * C1 * !Y)	0.00091	0.00092	0.00091
	(!A2 * B1 * B2 * C1 * !Y)	-0.00122	-0.00123	-0.00122
	(!A2 * B1 * B2 * !C1 * !Y)	0.00091	0.00092	0.00091
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00122	-0.00123	-0.00122
	(!A2 * B1 * !B2 * C1 * !Y)	0.00091	0.00092	0.00091
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00122	-0.00122	-0.00122
	(!A2 * B1 * !B2 * !C1 * Y)	0.00037	0.00037	0.00036
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00141	-0.00141	-0.00142
	(!A2 * !B1 * C1 * !Y)	0.00091	0.00092	0.00091
	(!A2 * !B1 * C1 * !Y)	-0.00122	-0.00123	-0.00122
	(!A2 * !B1 * !C1 * Y)	0.00037	0.00037	0.00036
	(!A2 * !B1 * !C1 * Y)	-0.00141	-0.00141	-0.00142

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00207	0.00208	0.00207
	(A2 * B1 * B2 * C1 * !Y)	-0.00243	-0.00251	-0.00249
	(A2 * B1 * B2 * !C1 * !Y)	0.00207	0.00208	0.00207
	(A2 * B1 * B2 * !C1 * !Y)	-0.00243	-0.00251	-0.00249
	(A2 * B1 * !B2 * C1 * !Y)	0.00208	0.00210	0.00208
	(A2 * B1 * !B2 * C1 * !Y)	-0.00234	-0.00241	-0.00240
	(A2 * !B1 * C1 * !Y)	0.00208	0.00210	0.00208
	(A2 * !B1 * C1 * !Y)	-0.00234	-0.00241	-0.00240
	(!A2 * B1 * B2 * C1 * !Y)	0.00198	0.00200	0.00198
	(!A2 * B1 * B2 * C1 * !Y)	-0.00260	-0.00261	-0.00260
	(!A2 * B1 * B2 * !C1 * !Y)	0.00197	0.00200	0.00198
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00259	-0.00261	-0.00260
	(!A2 * B1 * !B2 * C1 * !Y)	0.00198	0.00199	0.00198
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00260	-0.00261	-0.00260
	(!A2 * B1 * !B2 * !C1 * Y)	0.00084	0.00084	0.00080
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00304	-0.00307	-0.00311
	(!A2 * !B1 * C1 * !Y)	0.00198	0.00198	0.00198
	(!A2 * !B1 * C1 * !Y)	-0.00260	-0.00260	-0.00260
	(!A2 * !B1 * !C1 * Y)	0.00084	0.00084	0.00080
	(!A2 * !B1 * !C1 * Y)	-0.00304	-0.00307	-0.00311

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00402	0.00402	0.00400
	(A2 * B1 * B2 * C1 * !Y)	-0.00474	-0.00483	-0.00480
	(A2 * B1 * B2 * !C1 * !Y)	0.00400	0.00402	0.00399
	(A2 * B1 * B2 * !C1 * !Y)	-0.00470	-0.00483	-0.00479
	(A2 * B1 * !B2 * C1 * !Y)	0.00400	0.00398	0.00399
	(A2 * B1 * !B2 * C1 * !Y)	-0.00447	-0.00461	-0.00458
	(A2 * !B1 * C1 * !Y)	0.00400	0.00398	0.00399
	(A2 * !B1 * C1 * !Y)	-0.00446	-0.00461	-0.00458
	(!A2 * B1 * B2 * C1 * !Y)	0.00378	0.00382	0.00379
	(!A2 * B1 * B2 * C1 * !Y)	-0.00495	-0.00498	-0.00495
	(!A2 * B1 * B2 * !C1 * !Y)	0.00377	0.00381	0.00378
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00494	-0.00497	-0.00494
	(!A2 * B1 * !B2 * C1 * !Y)	0.00377	0.00380	0.00377
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00501	-0.00503	-0.00500
	(!A2 * B1 * !B2 * !C1 * Y)	0.00152	0.00152	0.00145
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00586	-0.00590	-0.00598
	(!A2 * !B1 * C1 * !Y)	0.00378	0.00381	0.00378
	(!A2 * !B1 * C1 * !Y)	-0.00501	-0.00503	-0.00500
	(!A2 * !B1 * !C1 * Y)	0.00152	0.00152	0.00146
	(!A2 * !B1 * !C1 * Y)	-0.00586	-0.00590	-0.00598

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)**	-0.00098	-0.00097	-0.00097
	(A2 * B1 * B2 * C1 * !Y)	0.00119	0.00118	0.00118
	(A2 * B1 * B2 * !C1 * !Y)	-0.00097	-0.00097	-0.00097
	(A2 * B1 * B2 * !C1 * !Y)	0.00117	0.00119	0.00118
	(A2 * B1 * !B2 * C1 * !Y)	-0.00097	-0.00097	-0.00097
	(A2 * B1 * !B2 * C1 * !Y)	0.00113	0.00113	0.00113
	(A2 * !B1 * C1 * !Y)	-0.00097	-0.00097	-0.00097
	(A2 * !B1 * C1 * !Y)	0.00113	0.00113	0.00113
	(!A2 * B1 * B2 * C1 * !Y)	-0.00089	-0.00092	-0.00091
	(!A2 * B1 * B2 * C1 * !Y)	0.00123	0.00124	0.00122
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00089	-0.00092	-0.00091
	(!A2 * B1 * B2 * !C1 * !Y)	0.00122	0.00123	0.00122
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00089	-0.00092	-0.00091
	(!A2 * B1 * !B2 * C1 * !Y)	0.00122	0.00122	0.00122
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * B1 * !B2 * !C1 * Y)	0.00142	0.00142	0.00142
	(!A2 * !B1 * C1 * !Y)	-0.00089	-0.00092	-0.00091
	(!A2 * !B1 * C1 * !Y)	0.00122	0.00123	0.00122
	(!A2 * !B1 * !C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * Y)	0.00142	0.00142	0.00142

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00207	-0.00208	-0.00207
	(A2 * B1 * B2 * C1 * !Y)	0.00248	0.00251	0.00249
	(A2 * B1 * B2 * !C1 * !Y)	-0.00207	-0.00208	-0.00207
	(A2 * B1 * B2 * !C1 * !Y)	0.00250	0.00251	0.00249
	(A2 * B1 * !B2 * C1 * !Y)	-0.00207	-0.00208	-0.00208
	(A2 * B1 * !B2 * C1 * !Y)	0.00239	0.00241	0.00240
	(A2 * !B1 * C1 * !Y)	-0.00208	-0.00208	-0.00208
	(A2 * !B1 * C1 * !Y)	0.00241	0.00241	0.00240
	(!A2 * B1 * B2 * C1 * !Y)	-0.00195	-0.00200	-0.00198
	(!A2 * B1 * B2 * C1 * !Y)	0.00261	0.00262	0.00261
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00193	-0.00200	-0.00198
	(!A2 * B1 * B2 * !C1 * !Y)	0.00260	0.00263	0.00261
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00193	-0.00199	-0.00198
	(!A2 * B1 * !B2 * C1 * !Y)	0.00260	0.00263	0.00261
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00078	-0.00078	-0.00078
	(!A2 * B1 * !B2 * !C1 * Y)	0.00311	0.00312	0.00312
	(!A2 * !B1 * C1 * !Y)	-0.00193	-0.00198	-0.00198
	(!A2 * !B1 * C1 * !Y)	0.00260	0.00263	0.00261
	(!A2 * !B1 * !C1 * Y)	-0.00078	-0.00078	-0.00078
	(!A2 * !B1 * !C1 * Y)	0.00311	0.00312	0.00312

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00400	-0.00400	-0.00399
	(A2 * B1 * B2 * C1 * !Y)	0.00481	0.00483	0.00480
	(A2 * B1 * B2 * !C1 * !Y)	-0.00400	-0.00401	-0.00399
	(A2 * B1 * B2 * !C1 * !Y)	0.00481	0.00483	0.00479
	(A2 * B1 * !B2 * C1 * !Y)	-0.00399	-0.00398	-0.00399
	(A2 * B1 * !B2 * C1 * !Y)	0.00457	0.00461	0.00458
	(A2 * !B1 * C1 * !Y)	-0.00400	-0.00398	-0.00399
	(A2 * !B1 * C1 * !Y)	0.00460	0.00461	0.00458
	(!A2 * B1 * B2 * C1 * !Y)	-0.00369	-0.00382	-0.00379
	(!A2 * B1 * B2 * C1 * !Y)	0.00498	0.00500	0.00496
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00365	-0.00381	-0.00378
	(!A2 * B1 * B2 * !C1 * !Y)	0.00494	0.00501	0.00496
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00366	-0.00380	-0.00377
	(!A2 * B1 * !B2 * C1 * !Y)	0.00501	0.00506	0.00502
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00142	-0.00142	-0.00142
	(!A2 * B1 * !B2 * !C1 * Y)	0.00597	0.00599	0.00598
	(!A2 * !B1 * C1 * !Y)	-0.00366	-0.00381	-0.00378
	(!A2 * !B1 * C1 * !Y)	0.00501	0.00506	0.00502
	(!A2 * !B1 * !C1 * Y)	-0.00142	-0.00142	-0.00142
	(!A2 * !B1 * !C1 * Y)	0.00597	0.00599	0.00598

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)**	0.00105	0.00104	0.00104
	(A1 * B1 * B2 * C1 * !Y)	-0.00118	-0.00121	-0.00120
	(A1 * B1 * B2 * !C1 * !Y)	0.00105	0.00104	0.00104
	(A1 * B1 * B2 * !C1 * !Y)	-0.00118	-0.00121	-0.00120
	(A1 * B1 * !B2 * C1 * !Y)	0.00105	0.00105	0.00104
	(A1 * B1 * !B2 * C1 * !Y)	-0.00113	-0.00115	-0.00115
	(A1 * !B1 * C1 * !Y)	0.00105	0.00105	0.00104
	(A1 * !B1 * C1 * !Y)	-0.00113	-0.00115	-0.00115
	(!A1 * B1 * B2 * !Y)	0.00098	0.00098	0.00098
	(!A1 * B1 * B2 * !Y)	-0.00124	-0.00125	-0.00125
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00097	0.00099	0.00098
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00124	-0.00125	-0.00125
	(!A1 * B1 * !B2 * !C1 * Y)	0.00098	0.00099	0.00098
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1 * !C1 * Y)	0.00098	0.00099	0.00098
	(!A1 * !B1 * !C1 * Y)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00198	0.00198	0.00197
	(A1 * B1 * B2 * C1 * !Y)	-0.00226	-0.00233	-0.00231
	(A1 * B1 * B2 * !C1 * !Y)	0.00197	0.00198	0.00197
	(A1 * B1 * B2 * !C1 * !Y)	-0.00224	-0.00233	-0.00231
	(A1 * B1 * !B2 * C1 * !Y)	0.00199	0.00200	0.00197
	(A1 * B1 * !B2 * C1 * !Y)	-0.00218	-0.00224	-0.00222
	(A1 * !B1 * C1 * !Y)	0.00199	0.00200	0.00197
	(A1 * !B1 * C1 * !Y)	-0.00218	-0.00224	-0.00222
	(!A1 * B1 * B2 * !Y)	0.00187	0.00189	0.00188
	(!A1 * B1 * B2 * !Y)	-0.00239	-0.00241	-0.00240
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00188	0.00189	0.00188
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00240	-0.00241	-0.00240
	(!A1 * B1 * !B2 * !C1 * Y)	0.00178	0.00179	0.00178
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00250	-0.00251	-0.00250
	(!A1 * !B1 * !C1 * Y)	0.00178	0.00179	0.00178
	(!A1 * !B1 * !C1 * Y)	-0.00250	-0.00251	-0.00250

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00408	0.00407	0.00404
	(A1 * B1 * B2 * C1 * !Y)	-0.00476	-0.00485	-0.00482
	(A1 * B1 * B2 * !C1 * !Y)	0.00407	0.00406	0.00404
	(A1 * B1 * B2 * !C1 * !Y)	-0.00474	-0.00484	-0.00481
	(A1 * B1 * !B2 * C1 * !Y)	0.00406	0.00403	0.00404
	(A1 * B1 * !B2 * C1 * !Y)	-0.00449	-0.00460	-0.00460
	(A1 * !B1 * C1 * !Y)	0.00406	0.00402	0.00404
	(A1 * !B1 * C1 * !Y)	-0.00449	-0.00459	-0.00460
	(!A1 * B1 * B2 * !Y)	0.00382	0.00387	0.00384
	(!A1 * B1 * B2 * !Y)	-0.00496	-0.00500	-0.00497
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00382	0.00386	0.00383
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00502	-0.00506	-0.00504
	(!A1 * B1 * !B2 * !C1 * Y)	0.00354	0.00359	0.00356
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00529	-0.00533	-0.00531
	(!A1 * !B1 * !C1 * Y)	0.00354	0.00359	0.00356
	(!A1 * !B1 * !C1 * Y)	-0.00529	-0.00533	-0.00531

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)**	-0.00104	-0.00104	-0.00104
	(A1 * B1 * B2 * C1 * !Y)	0.00120	0.00121	0.00120
	(A1 * B1 * B2 * !C1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * B2 * !C1 * !Y)	0.00120	0.00121	0.00120
	(A1 * B1 * !B2 * C1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * !B2 * C1 * !Y)	0.00116	0.00115	0.00115
	(A1 * !B1 * C1 * !Y)	-0.00104	-0.00104	-0.00104
	(A1 * !B1 * C1 * !Y)	0.00116	0.00115	0.00115
	(!A1 * B1 * B2 * !Y)	-0.00096	-0.00098	-0.00098
	(!A1 * B1 * B2 * !Y)	0.00125	0.00126	0.00125
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00096	-0.00099	-0.00098
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00125	0.00126	0.00125
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00096	-0.00099	-0.00098
	(!A1 * B1 * !B2 * !C1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !B1 * !C1 * Y)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1 * !C1 * Y)	0.00125	0.00126	0.00125

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00196	-0.00198	-0.00197
	(A1 * B1 * B2 * C1 * !Y)	0.00230	0.00233	0.00231
	(A1 * B1 * B2 * !C1 * !Y)	-0.00196	-0.00198	-0.00197
	(A1 * B1 * B2 * !C1 * !Y)	0.00230	0.00233	0.00231
	(A1 * B1 * !B2 * C1 * !Y)	-0.00197	-0.00198	-0.00197
	(A1 * B1 * !B2 * C1 * !Y)	0.00222	0.00224	0.00222
	(A1 * !B1 * C1 * !Y)	-0.00197	-0.00198	-0.00197
	(A1 * !B1 * C1 * !Y)	0.00222	0.00224	0.00222
	(!A1 * B1 * B2 * !Y)	-0.00185	-0.00189	-0.00188
	(!A1 * B1 * B2 * !Y)	0.00241	0.00242	0.00241
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00185	-0.00189	-0.00188
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00241	0.00242	0.00241
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00174	-0.00179	-0.00178
	(!A1 * B1 * !B2 * !C1 * Y)	0.00252	0.00252	0.00250
	(!A1 * !B1 * !C1 * Y)	-0.00174	-0.00179	-0.00178
	(!A1 * !B1 * !C1 * Y)	0.00252	0.00252	0.00250

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00403	-0.00405	-0.00404
	(A1 * B1 * B2 * C1 * !Y)	0.00481	0.00485	0.00482
	(A1 * B1 * B2 * !C1 * !Y)	-0.00402	-0.00405	-0.00403
	(A1 * B1 * B2 * !C1 * !Y)	0.00479	0.00484	0.00481
	(A1 * B1 * !B2 * C1 * !Y)	-0.00403	-0.00403	-0.00404
	(A1 * B1 * !B2 * C1 * !Y)	0.00459	0.00460	0.00460
	(A1 * !B1 * C1 * !Y)	-0.00404	-0.00402	-0.00404
	(A1 * !B1 * C1 * !Y)	0.00462	0.00459	0.00460
	(!A1 * B1 * B2 * !Y)	-0.00377	-0.00386	-0.00384
	(!A1 * B1 * B2 * !Y)	0.00500	0.00501	0.00499
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00377	-0.00386	-0.00383
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00507	0.00508	0.00505
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00349	-0.00358	-0.00356
	(!A1 * B1 * !B2 * !C1 * Y)	0.00535	0.00534	0.00532
	(!A1 * !B1 * !C1 * Y)	-0.00349	-0.00359	-0.00356
	(!A1 * !B1 * !C1 * Y)	0.00535	0.00534	0.00532

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)**	0.00100	0.00100	0.00100
	(A1 * A2 * B2 * C1 * !Y)	-0.00094	-0.00093	-0.00093
	(A1 * A2 * B2 * !C1 * !Y)	0.00100	0.00100	0.00100
	(A1 * A2 * B2 * !C1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * !B2 * C1 * !Y)	0.00094	0.00096	0.00094
	(A1 * A2 * !B2 * C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * !B2 * !C1 * !Y)	0.00094	0.00095	0.00094
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * B2 * C1 * !Y)	0.00101	0.00101	0.00100
	(A1 * !A2 * B2 * C1 * !Y)	-0.00118	-0.00119	-0.00119
	(A1 * !A2 * !B2 * C1 * !Y)	0.00093	0.00094	0.00094
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00123	-0.00123	-0.00123
	(A1 * !A2 * !B2 * !C1 * Y)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00144	-0.00145	-0.00146
	(!A1 * B2 * C1 * !Y)	0.00100	0.00101	0.00100
	(!A1 * B2 * C1 * !Y)	-0.00116	-0.00119	-0.00119
	(!A1 * !B2 * C1 * !Y)	0.00093	0.00094	0.00094
	(!A1 * !B2 * C1 * !Y)	-0.00123	-0.00123	-0.00123
	(!A1 * !B2 * !C1 * Y)	0.00037	0.00037	0.00036
	(!A1 * !B2 * !C1 * Y)	-0.00144	-0.00145	-0.00146

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00202	0.00203	0.00203
	(A1 * A2 * B2 * C1 * !Y)	-0.00192	-0.00190	-0.00190
	(A1 * A2 * B2 * !C1 * !Y)	0.00202	0.00202	0.00202
	(A1 * A2 * B2 * !C1 * !Y)	-0.00174	-0.00173	-0.00174
	(A1 * A2 * !B2 * C1 * !Y)	0.00191	0.00192	0.00192
	(A1 * A2 * !B2 * C1 * !Y)	-0.00182	-0.00183	-0.00182
	(A1 * A2 * !B2 * !C1 * !Y)	0.00191	0.00194	0.00191
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00172	-0.00174	-0.00173
	(A1 * !A2 * B2 * C1 * !Y)	0.00202	0.00204	0.00202
	(A1 * !A2 * B2 * C1 * !Y)	-0.00241	-0.00248	-0.00247
	(A1 * !A2 * !B2 * C1 * !Y)	0.00191	0.00191	0.00191
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00255	-0.00256	-0.00255
	(A1 * !A2 * !B2 * !C1 * Y)	0.00076	0.00076	0.00073
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00302	-0.00302	-0.00305
	(!A1 * B2 * C1 * !Y)	0.00203	0.00204	0.00202
	(!A1 * B2 * C1 * !Y)	-0.00242	-0.00249	-0.00247
	(!A1 * !B2 * C1 * !Y)	0.00191	0.00191	0.00191
	(!A1 * !B2 * C1 * !Y)	-0.00256	-0.00256	-0.00255
	(!A1 * !B2 * !C1 * Y)	0.00076	0.00076	0.00073
	(!A1 * !B2 * !C1 * Y)	-0.00302	-0.00302	-0.00305

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00399	0.00399	0.00399
	(A1 * A2 * B2 * C1 * !Y)	-0.00366	-0.00364	-0.00363
	(A1 * A2 * B2 * !C1 * !Y)	0.00402	0.00399	0.00398
	(A1 * A2 * B2 * !C1 * !Y)	-0.00333	-0.00329	-0.00331
	(A1 * A2 * !B2 * C1 * !Y)	0.00376	0.00378	0.00376
	(A1 * A2 * !B2 * C1 * !Y)	-0.00352	-0.00353	-0.00350
	(A1 * A2 * !B2 * !C1 * !Y)	0.00377	0.00382	0.00375
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00329	-0.00332	-0.00329
	(A1 * !A2 * B2 * C1 * !Y)	0.00398	0.00402	0.00397
	(A1 * !A2 * B2 * C1 * !Y)	-0.00454	-0.00471	-0.00467
	(A1 * !A2 * !B2 * C1 * !Y)	0.00372	0.00376	0.00373
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00495	-0.00498	-0.00496
	(A1 * !A2 * !B2 * !C1 * Y)	0.00152	0.00151	0.00144
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00581	-0.00581	-0.00590
	(!A1 * B2 * C1 * !Y)	0.00398	0.00402	0.00397
	(!A1 * B2 * C1 * !Y)	-0.00455	-0.00471	-0.00467
	(!A1 * !B2 * C1 * !Y)	0.00372	0.00377	0.00373
	(!A1 * !B2 * C1 * !Y)	-0.00495	-0.00499	-0.00496
	(!A1 * !B2 * !C1 * Y)	0.00152	0.00151	0.00144
	(!A1 * !B2 * !C1 * Y)	-0.00581	-0.00581	-0.00590

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)**	-0.00100	-0.00100	-0.00100
	(A1 * A2 * B2 * C1 * !Y)	0.00094	0.00093	0.00093
	(A1 * A2 * B2 * !C1 * !Y)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * B2 * !C1 * !Y)	0.00088	0.00087	0.00087
	(A1 * A2 * !B2 * C1 * !Y)	-0.00092	-0.00095	-0.00094
	(A1 * A2 * !B2 * C1 * !Y)	0.00090	0.00090	0.00090
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00091	-0.00095	-0.00094
	(A1 * A2 * !B2 * !C1 * !Y)	0.00083	0.00084	0.00083
	(A1 * !A2 * B2 * C1 * !Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * B2 * C1 * !Y)	0.00119	0.00119	0.00119
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00091	-0.00094	-0.00094
	(A1 * !A2 * !B2 * C1 * !Y)	0.00123	0.00123	0.00123
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * !B2 * !C1 * Y)	0.00145	0.00146	0.00146
	(!A1 * B2 * C1 * !Y)	-0.00100	-0.00100	-0.00100
	(!A1 * B2 * C1 * !Y)	0.00118	0.00119	0.00119
	(!A1 * !B2 * C1 * !Y)	-0.00091	-0.00094	-0.00094
	(!A1 * !B2 * C1 * !Y)	0.00124	0.00123	0.00123
	(!A1 * !B2 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !B2 * !C1 * Y)	0.00145	0.00146	0.00146

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00202	-0.00202	-0.00202
	(A1 * A2 * B2 * C1 * !Y)	0.00192	0.00190	0.00190
	(A1 * A2 * B2 * !C1 * !Y)	-0.00199	-0.00200	-0.00199
	(A1 * A2 * B2 * !C1 * !Y)	0.00176	0.00177	0.00178
	(A1 * A2 * !B2 * C1 * !Y)	-0.00187	-0.00192	-0.00192
	(A1 * A2 * !B2 * C1 * !Y)	0.00182	0.00183	0.00182
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00185	-0.00194	-0.00191
	(A1 * A2 * !B2 * !C1 * !Y)	0.00172	0.00174	0.00173
	(A1 * !A2 * B2 * C1 * !Y)	-0.00202	-0.00203	-0.00202
	(A1 * !A2 * B2 * C1 * !Y)	0.00246	0.00248	0.00247
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00185	-0.00191	-0.00191
	(A1 * !A2 * !B2 * C1 * !Y)	0.00255	0.00257	0.00256
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00071	-0.00071	-0.00071
	(A1 * !A2 * !B2 * !C1 * Y)	0.00304	0.00306	0.00305
	(!A1 * B2 * C1 * !Y)	-0.00202	-0.00203	-0.00202
	(!A1 * B2 * C1 * !Y)	0.00246	0.00249	0.00247
	(!A1 * !B2 * C1 * !Y)	-0.00186	-0.00191	-0.00191
	(!A1 * !B2 * C1 * !Y)	0.00257	0.00257	0.00256
	(!A1 * !B2 * !C1 * Y)	-0.00071	-0.00071	-0.00071
	(!A1 * !B2 * !C1 * Y)	0.00304	0.00306	0.00305

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00399	-0.00398	-0.00397
	(A1 * A2 * B2 * C1 * !Y)	0.00366	0.00364	0.00363
	(A1 * A2 * B2 * !C1 * !Y)	-0.00391	-0.00392	-0.00388
	(A1 * A2 * B2 * !C1 * !Y)	0.00342	0.00344	0.00342
	(A1 * A2 * !B2 * C1 * !Y)	-0.00365	-0.00378	-0.00376
	(A1 * A2 * !B2 * C1 * !Y)	0.00352	0.00353	0.00350
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00360	-0.00381	-0.00375
	(A1 * A2 * !B2 * !C1 * !Y)	0.00329	0.00332	0.00329
	(A1 * !A2 * B2 * C1 * !Y)	-0.00397	-0.00399	-0.00397
	(A1 * !A2 * B2 * C1 * !Y)	0.00466	0.00471	0.00467
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00361	-0.00376	-0.00373
	(A1 * !A2 * !B2 * C1 * !Y)	0.00495	0.00500	0.00496
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00140	-0.00141	-0.00140
	(A1 * !A2 * !B2 * !C1 * Y)	0.00588	0.00590	0.00590
	(!A1 * B2 * C1 * !Y)	-0.00398	-0.00399	-0.00397
	(!A1 * B2 * C1 * !Y)	0.00469	0.00471	0.00467
	(!A1 * !B2 * C1 * !Y)	-0.00360	-0.00377	-0.00373
	(!A1 * !B2 * C1 * !Y)	0.00496	0.00500	0.00496
	(!A1 * !B2 * !C1 * Y)	-0.00140	-0.00141	-0.00141
	(!A1 * !B2 * !C1 * Y)	0.00588	0.00591	0.00590

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)**	0.00103	0.00104	0.00104
	(A1 * A2 * B1 * C1 * !Y)	-0.00097	-0.00096	-0.00096
	(A1 * A2 * B1 * !C1 * !Y)	0.00105	0.00103	0.00103
	(A1 * A2 * B1 * !C1 * !Y)	-0.00088	-0.00087	-0.00087
	(A1 * A2 * !B1 * C1 * !Y)	0.00097	0.00099	0.00097
	(A1 * A2 * !B1 * C1 * !Y)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * !B1 * !C1 * !Y)	0.00098	0.00099	0.00097
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * B1 * C1 * !Y)	0.00105	0.00104	0.00103
	(A1 * !A2 * B1 * C1 * !Y)	-0.00121	-0.00123	-0.00122
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00097	0.00098	0.00097
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00127	-0.00127	-0.00127
	(A1 * !A2 * !B1 * !C1 * Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00134	-0.00135	-0.00135
	(!A1 * B1 * C1 * !Y)	0.00105	0.00104	0.00103
	(!A1 * B1 * C1 * !Y)	-0.00121	-0.00123	-0.00122
	(!A1 * !B1 * !C1 * Y)	0.00089	0.00091	0.00089
	(!A1 * !B1 * !C1 * Y)	-0.00134	-0.00135	-0.00135

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00197	0.00198	0.00197
	(A1 * A2 * B1 * C1 * !Y)	-0.00179	-0.00179	-0.00178
	(A1 * A2 * B1 * !C1 * !Y)	0.00196	0.00196	0.00196
	(A1 * A2 * B1 * !C1 * !Y)	-0.00160	-0.00160	-0.00161
	(A1 * A2 * !B1 * C1 * !Y)	0.00186	0.00187	0.00186
	(A1 * A2 * !B1 * C1 * !Y)	-0.00171	-0.00172	-0.00171
	(A1 * A2 * !B1 * !C1 * !Y)	0.00186	0.00187	0.00185
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * B1 * C1 * !Y)	0.00197	0.00198	0.00196
	(A1 * !A2 * B1 * C1 * !Y)	-0.00226	-0.00232	-0.00230
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00184	0.00186	0.00185
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00238	-0.00239	-0.00238
	(A1 * !A2 * !B1 * !C1 * Y)	0.00177	0.00179	0.00177
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00246	-0.00247	-0.00246
	(!A1 * B1 * C1 * !Y)	0.00197	0.00198	0.00196
	(!A1 * B1 * C1 * !Y)	-0.00226	-0.00232	-0.00230
	(!A1 * !B1 * !C1 * Y)	0.00177	0.00179	0.00177
	(!A1 * !B1 * !C1 * Y)	-0.00246	-0.00247	-0.00246

	(A1 * A2 * B1 * C1 * !Y)	0.00402	0.00401	0.00400
	(A1 * A2 * B1 * C1 * !Y)	-0.00363	-0.00364	-0.00363
	(A1 * A2 * B1 * !C1 * !Y)	0.00401	0.00400	0.00399
	(A1 * A2 * B1 * !C1 * !Y)	-0.00331	-0.00330	-0.00331
	(A1 * A2 * !B1 * C1 * !Y)	0.00374	0.00380	0.00374
	(A1 * A2 * !B1 * C1 * !Y)	-0.00351	-0.00353	-0.00350
	(A1 * A2 * !B1 * !C1 * !Y)	0.00376	0.00381	0.00374
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00330	-0.00332	-0.00330
	(A1 * !A2 * B1 * C1 * !Y)	0.00400	0.00398	0.00398
sky130_fd_sc_hs__a221oi_4	**(A1 * !A2 * B1 * C1 * !Y)**	-0.00455	-0.00470	-0.00467
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00373	0.00374	0.00373
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00496	-0.00496	-0.00495
	(A1 * !A2 * !B1 * !C1 * Y)	0.00372	0.00375	0.00371
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00497	-0.00499	-0.00496
	(!A1 * B1 * C1 * !Y)	0.00400	0.00398	0.00398
	(!A1 * B1 * C1 * !Y)	-0.00455	-0.00470	-0.00467
	(!A1 * !B1 * !C1 * Y)	0.00372	0.00376	0.00372
	(!A1 * !B1 * !C1 * Y)	-0.00497	-0.00499	-0.00496

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)**	-0.00103	-0.00103	-0.00103
	(A1 * A2 * B1 * C1 * !Y)	0.00097	0.00096	0.00096
	(A1 * A2 * B1 * !C1 * !Y)	-0.00101	-0.00101	-0.00101
	(A1 * A2 * B1 * !C1 * !Y)	0.00090	0.00090	0.00090
	(A1 * A2 * !B1 * C1 * !Y)	-0.00095	-0.00098	-0.00097
	(A1 * A2 * !B1 * C1 * !Y)	0.00092	0.00093	0.00092
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00095	-0.00098	-0.00097
	(A1 * A2 * !B1 * !C1 * !Y)	0.00087	0.00087	0.00087
	(A1 * !A2 * B1 * C1 * !Y)	-0.00104	-0.00104	-0.00103
	(A1 * !A2 * B1 * C1 * !Y)	0.00123	0.00123	0.00122
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00095	-0.00097	-0.00097
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00127	0.00127	0.00127
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00087	-0.00090	-0.00089
	(A1 * !A2 * !B1 * !C1 * Y)	0.00135	0.00135	0.00135
	(!A1 * B1 * C1 * !Y)	-0.00103	-0.00104	-0.00103
	(!A1 * B1 * C1 * !Y)	0.00122	0.00123	0.00122
	(!A1 * !B1 * !C1 * Y)	-0.00087	-0.00090	-0.00089
	(!A1 * !B1 * !C1 * Y)	0.00135	0.00135	0.00135

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00197	-0.00197	-0.00196
	(A1 * A2 * B1 * C1 * !Y)	0.00179	0.00179	0.00178
	(A1 * A2 * B1 * !C1 * !Y)	-0.00192	-0.00193	-0.00192
	(A1 * A2 * B1 * !C1 * !Y)	0.00164	0.00165	0.00166
	(A1 * A2 * !B1 * C1 * !Y)	-0.00182	-0.00187	-0.00186
	(A1 * A2 * !B1 * C1 * !Y)	0.00171	0.00172	0.00171
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00181	-0.00186	-0.00185
	(A1 * A2 * !B1 * !C1 * !Y)	0.00160	0.00161	0.00160
	(A1 * !A2 * B1 * C1 * !Y)	-0.00196	-0.00197	-0.00196
	(A1 * !A2 * B1 * C1 * !Y)	0.00230	0.00232	0.00230
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00181	-0.00186	-0.00185
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00239	0.00240	0.00239
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00173	-0.00178	-0.00177
	(A1 * !A2 * !B1 * !C1 * Y)	0.00247	0.00247	0.00246
	(!A1 * B1 * C1 * !Y)	-0.00196	-0.00197	-0.00196
	(!A1 * B1 * C1 * !Y)	0.00229	0.00232	0.00230
	(!A1 * !B1 * !C1 * Y)	-0.00173	-0.00178	-0.00177
	(!A1 * !B1 * !C1 * Y)	0.00247	0.00247	0.00246

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00398	-0.00399	-0.00398
	(A1 * A2 * B1 * C1 * !Y)	0.00363	0.00364	0.00363
	(A1 * A2 * B1 * !C1 * !Y)	-0.00392	-0.00393	-0.00389
	(A1 * A2 * B1 * !C1 * !Y)	0.00344	0.00344	0.00342
	(A1 * A2 * !B1 * C1 * !Y)	-0.00366	-0.00378	-0.00374
	(A1 * A2 * !B1 * C1 * !Y)	0.00351	0.00353	0.00350
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00366	-0.00377	-0.00374
	(A1 * A2 * !B1 * !C1 * !Y)	0.00330	0.00332	0.00330
	(A1 * !A2 * B1 * C1 * !Y)	-0.00398	-0.00398	-0.00398
	(A1 * !A2 * B1 * C1 * !Y)	0.00466	0.00470	0.00467
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00364	-0.00374	-0.00373
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00496	0.00499	0.00496
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00363	-0.00375	-0.00371
	(A1 * !A2 * !B1 * !C1 * Y)	0.00497	0.00499	0.00497
	(!A1 * B1 * C1 * !Y)	-0.00398	-0.00398	-0.00398
	(!A1 * B1 * C1 * !Y)	0.00466	0.00470	0.00467
	(!A1 * !B1 * !C1 * Y)	-0.00363	-0.00375	-0.00372
	(!A1 * !B1 * !C1 * Y)	0.00497	0.00499	0.00497

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)	0.00121	0.00121	0.00121
	(A1 * B1 * B2 * !Y)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * B1 * !B2 * !Y)	0.00121	0.00121	0.00121
	(A1 * A2 * B1 * !B2 * !Y)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !B1 * !Y)	0.00121	0.00121	0.00121
	(A1 * A2 * !B1 * !Y)	-0.00079	-0.00079	-0.00079
	(!A1 * B1 * B2 * !Y)	0.00121	0.00121	0.00121
	(!A1 * B1 * B2 * !Y)	-0.00080	-0.00079	-0.00079
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00227	0.00226	0.00227
	(A1 * B1 * B2 * !Y)	-0.00147	-0.00146	-0.00147
	(A1 * A2 * B1 * !B2 * !Y)	0.00227	0.00226	0.00227
	(A1 * A2 * B1 * !B2 * !Y)	-0.00147	-0.00146	-0.00146
	(A1 * A2 * !B1 * !Y)	0.00227	0.00227	0.00227
	(A1 * A2 * !B1 * !Y)	-0.00147	-0.00146	-0.00146
	(!A1 * B1 * B2 * !Y)	0.00227	0.00226	0.00227
	(!A1 * B1 * B2 * !Y)	-0.00147	-0.00147	-0.00147
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00446	0.00448	0.00448
	(A1 * B1 * B2 * !Y)	-0.00294	-0.00294	-0.00294
	(A1 * A2 * B1 * !B2 * !Y)	0.00446	0.00449	0.00448
	(A1 * A2 * B1 * !B2 * !Y)	-0.00293	-0.00295	-0.00294
	(A1 * A2 * !B1 * !Y)	0.00447	0.00450	0.00448
	(A1 * A2 * !B1 * !Y)	-0.00293	-0.00295	-0.00294
	(!A1 * B1 * B2 * !Y)	0.00447	0.00450	0.00448
	(!A1 * B1 * B2 * !Y)	-0.00295	-0.00297	-0.00295

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)	-0.00113	-0.00113	-0.00121
	(A1 * B1 * B2 * !Y)	0.00087	0.00087	0.00081
	(A1 * A2 * B1 * !B2 * !Y)	-0.00098	-0.00100	-0.00117
	(A1 * A2 * B1 * !B2 * !Y)	0.00095	0.00095	0.00083
	(A1 * A2 * !B1 * !Y)	-0.00099	-0.00100	-0.00117
	(A1 * A2 * !B1 * !Y)	0.00096	0.00095	0.00083
	(!A1 * B1 * B2 * !Y)	-0.00112	-0.00113	-0.00121
	(!A1 * B1 * B2 * !Y)	0.00087	0.00087	0.00081
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00210	-0.00212	-0.00225
	(A1 * B1 * B2 * !Y)	0.00162	0.00162	0.00150
	(A1 * A2 * B1 * !B2 * !Y)	-0.00186	-0.00189	-0.00220
	(A1 * A2 * B1 * !B2 * !Y)	0.00175	0.00175	0.00153
	(A1 * A2 * !B1 * !Y)	-0.00187	-0.00189	-0.00220
	(A1 * A2 * !B1 * !Y)	0.00175	0.00175	0.00153
	(!A1 * B1 * B2 * !Y)	-0.00209	-0.00211	-0.00225
	(!A1 * B1 * B2 * !Y)	0.00162	0.00162	0.00150
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00417	-0.00420	-0.00446
	(A1 * B1 * B2 * !Y)	0.00318	0.00318	0.00300
	(A1 * A2 * B1 * !B2 * !Y)	-0.00372	-0.00374	-0.00435
	(A1 * A2 * B1 * !B2 * !Y)	0.00350	0.00349	0.00308
	(A1 * A2 * !B1 * !Y)	-0.00372	-0.00375	-0.00435
	(A1 * A2 * !B1 * !Y)	0.00351	0.00349	0.00308
	(!A1 * B1 * B2 * !Y)	-0.00417	-0.00420	-0.00446
	(!A1 * B1 * B2 * !Y)	0.00320	0.00319	0.00301

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221o_1	14.38560
sky130_fd_sc_hs__a221o_2	14.38560
sky130_fd_sc_hs__a221o_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__a221o_1	0.00243	0.00250	0.00241	0.00239	0.00241	0.36426
sky130_fd_sc_hs__a221o_2	0.00254	0.00259	0.00263	0.00261	0.00257	0.71700
sky130_fd_sc_hs__a221o_4	0.00444	0.00440	0.00461	0.00465	0.00461	1.26811

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.00018	0.00028
sky130_fd_sc_hs__a221o_2	0.00000	0.00023	0.00038
sky130_fd_sc_hs__a221o_4	0.00000	0.00047	0.00075

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)	0.18861	1.23466	8.86917
	A2->X (RR)	0.19441	1.23541	9.01558
	B1->X (RR)	0.18397	1.21804	8.79264
	B2->X (RR)	0.18943	1.21988	8.93252
	C1->X (RR)	0.14808	1.16017	8.69498
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.18995	1.10985	9.03915
	A2->X (RR)	0.19586	1.10299	9.14057
	B1->X (RR)	0.18624	1.09681	8.97453
	B2->X (RR)	0.19148	1.09103	9.07850
	C1->X (RR)	0.14298	1.03289	8.86228
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.21990	1.05678	9.11753
	A2->X (RR)	0.22776	1.03348	9.18733
	B1->X (RR)	0.21153	1.03344	9.01827
	B2->X (RR)	0.21955	1.01571	9.10378
	C1->X (RR)	0.14369	0.93018	8.84522

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.88488	1.74082	7.47563
	A2->X (FF)	0.97646	1.83756	7.61659
	B1->X (FF)	0.83232	1.66686	7.48971
	B2->X (FF)	0.91287	1.75735	7.65534
	C1->X (FF)	0.76579	1.54221	6.95198
sky130_fd_sc_hs__a221o_2	A1->X (FF)	1.17284	2.05770	8.07035
	A2->X (FF)	1.27792	2.17268	8.21735
	B1->X (FF)	1.13804	2.00205	8.17080
	B2->X (FF)	1.22012	2.09679	8.32246
	C1->X (FF)	1.07450	1.88225	7.69817
sky130_fd_sc_hs__a221o_4	A1->X (FF)	1.11520	1.94117	7.80700
	A2->X (FF)	1.23007	2.06943	7.98054
	B1->X (FF)	1.07320	1.87922	7.92881
	B2->X (FF)	1.17296	1.99277	8.10187
	C1->X (FF)	1.00931	1.74237	7.42918

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.00808	0.00800	0.00787
	A1	0.00386	0.00378	0.00367
	A2	0.00868	0.00862	0.00849
	A2	0.00388	0.00382	0.00370
	B1	0.00688	0.00683	0.00672
	B1	0.00296	0.00292	0.00282
	B2	0.00741	0.00740	0.00730
	B2	0.00301	0.00298	0.00292
	C1	0.00631	0.00621	0.00610
	C1	0.00225	0.00214	0.00205
sky130_fd_sc_hs__a221o_2	A1	0.01018	0.01020	0.01006
	A1	0.00560	0.00561	0.00552
	A2	0.01083	0.01087	0.01075
	A2	0.00561	0.00564	0.00557
	B1	0.00909	0.00921	0.00915
	B1	0.00471	0.00483	0.00482
	B2	0.00970	0.00986	0.00982
	B2	0.00479	0.00496	0.00497
	C1	0.00853	0.00859	0.00851
	C1	0.00404	0.00412	0.00408

sky130_fd_sc_hs__a221o_4	**A1**	0.01974	0.01986	0.01975
	A1	0.01168	0.01179	0.01173
	A2	0.02078	0.02100	0.02091
	A2	0.01170	0.01197	0.01187
	B1	0.01732	0.01751	0.01752
	B1	0.00976	0.00997	0.01005
	B2	0.01855	0.01892	0.01895
	B2	0.00982	0.01019	0.01024
	C1	0.01561	0.01570	0.01562
	C1	0.00801	0.00810	0.00801

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00277	0.00282	0.00353
	A1	0.00755	0.00758	0.00756
	A2	0.00321	0.00323	0.00384
	A2	0.00824	0.00826	0.00821
	B1	0.00279	0.00282	0.00347
	B1	0.00699	0.00698	0.00694
	B2	0.00300	0.00307	0.00436
	B2	0.00763	0.00768	0.00763
	C1	0.00285	0.00289	0.00341
	C1	0.00712	0.00713	0.00708

sky130_fd_sc_hs__a221o_2	**A1**	0.00477	0.00498	0.00610
	A1	0.00995	0.01014	0.01020
	A2	0.00530	0.00550	0.00606
	A2	0.01075	0.01094	0.01097
	B1	0.00508	0.00522	0.00556
	B1	0.00946	0.00959	0.00964
	B2	0.00530	0.00551	0.00557
	B2	0.01016	0.01036	0.01039
	C1	0.00496	0.00514	0.00741
	C1	0.00967	0.00983	0.00986
sky130_fd_sc_hs__a221o_4	**A1**	0.00900	0.00947	0.00982
	A1	0.01761	0.01808	0.01829
	A2	0.00975	0.01026	0.01079
	A2	0.01925	0.01978	0.01991
	B1	0.00919	0.00958	0.01124
	B1	0.01674	0.01710	0.01723
	B2	0.00876	0.00936	0.01083
	B2	0.01819	0.01872	0.01880
	C1	0.00914	0.00955	0.01205
	C1	0.01734	0.01771	0.01780

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)**	0.00088	0.00088	0.00087
	(A2 * B1 * B2 * C1 * X)	-0.00109	-0.00112	-0.00111
	(A2 * B1 * B2 * !C1 * X)	0.00087	0.00088	0.00087
	(A2 * B1 * B2 * !C1 * X)	-0.00109	-0.00112	-0.00111
	(A2 * B1 * !B2 * C1 * X)	0.00088	0.00088	0.00087
	(A2 * B1 * !B2 * C1 * X)	-0.00106	-0.00108	-0.00108
	(A2 * !B1 * C1 * X)	0.00088	0.00088	0.00087
	(A2 * !B1 * C1 * X)	-0.00106	-0.00108	-0.00108
	(!A2 * B1 * B2 * C1 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * B2 * C1 * X)	-0.00116	-0.00117	-0.00116
	(!A2 * B1 * B2 * !C1 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * B2 * !C1 * X)	-0.00116	-0.00117	-0.00116
	(!A2 * B1 * !B2 * C1 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * !B2 * C1 * X)	-0.00116	-0.00117	-0.00116
	(!A2 * B1 * !B2 * !C1 * !X)	0.00034	0.00034	0.00033
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00135	-0.00136	-0.00137
	(!A2 * !B1 * C1 * X)	0.00082	0.00083	0.00082
	(!A2 * !B1 * C1 * X)	-0.00116	-0.00117	-0.00116
	(!A2 * !B1 * !C1 * !X)	0.00034	0.00034	0.00033
	(!A2 * !B1 * !C1 * !X)	-0.00135	-0.00136	-0.00137

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00101	0.00101	0.00100
	(A2 * B1 * B2 * C1 * X)	-0.00108	-0.00111	-0.00110
	(A2 * B1 * B2 * !C1 * X)	0.00101	0.00101	0.00100
	(A2 * B1 * B2 * !C1 * X)	-0.00108	-0.00111	-0.00110
	(A2 * B1 * !B2 * C1 * X)	0.00101	0.00101	0.00100
	(A2 * B1 * !B2 * C1 * X)	-0.00105	-0.00106	-0.00107
	(A2 * !B1 * C1 * X)	0.00101	0.00101	0.00100
	(A2 * !B1 * C1 * X)	-0.00105	-0.00106	-0.00107
	(!A2 * B1 * B2 * C1 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * B2 * C1 * X)	-0.00115	-0.00116	-0.00115
	(!A2 * B1 * B2 * !C1 * X)	0.00094	0.00095	0.00094
	(!A2 * B1 * B2 * !C1 * X)	-0.00115	-0.00116	-0.00115
	(!A2 * B1 * !B2 * C1 * X)	0.00093	0.00095	0.00094
	(!A2 * B1 * !B2 * C1 * X)	-0.00114	-0.00116	-0.00115
	(!A2 * B1 * !B2 * !C1 * !X)	0.00037	0.00037	0.00037
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00135	-0.00137	-0.00138
	(!A2 * !B1 * C1 * X)	0.00094	0.00095	0.00094
	(!A2 * !B1 * C1 * X)	-0.00115	-0.00116	-0.00115
	(!A2 * !B1 * !C1 * !X)	0.00037	0.00037	0.00037
	(!A2 * !B1 * !C1 * !X)	-0.00135	-0.00137	-0.00138

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00197	0.00198	0.00196
	(A2 * B1 * B2 * C1 * X)	-0.00211	-0.00218	-0.00216
	(A2 * B1 * B2 * !C1 * X)	0.00197	0.00198	0.00196
	(A2 * B1 * B2 * !C1 * X)	-0.00211	-0.00218	-0.00216
	(A2 * B1 * !B2 * C1 * X)	0.00196	0.00196	0.00196
	(A2 * B1 * !B2 * C1 * X)	-0.00206	-0.00212	-0.00211
	(A2 * !B1 * C1 * X)	0.00196	0.00196	0.00196
	(A2 * !B1 * C1 * X)	-0.00206	-0.00212	-0.00211
	(!A2 * B1 * B2 * C1 * X)	0.00185	0.00186	0.00185
	(!A2 * B1 * B2 * C1 * X)	-0.00226	-0.00227	-0.00226
	(!A2 * B1 * B2 * !C1 * X)	0.00185	0.00186	0.00185
	(!A2 * B1 * B2 * !C1 * X)	-0.00226	-0.00226	-0.00226
	(!A2 * B1 * !B2 * C1 * X)	0.00185	0.00186	0.00185
	(!A2 * B1 * !B2 * C1 * X)	-0.00226	-0.00227	-0.00226
	(!A2 * B1 * !B2 * !C1 * !X)	0.00100	0.00101	0.00097
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00250	-0.00252	-0.00256
	(!A2 * !B1 * C1 * X)	0.00185	0.00187	0.00185
	(!A2 * !B1 * C1 * X)	-0.00226	-0.00227	-0.00226
	(!A2 * !B1 * !C1 * !X)	0.00100	0.00101	0.00097
	(!A2 * !B1 * !C1 * !X)	-0.00250	-0.00252	-0.00256

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)**	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * C1 * X)	0.00111	0.00112	0.00111
	(A2 * B1 * B2 * !C1 * X)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * !C1 * X)	0.00113	0.00112	0.00111
	(A2 * B1 * !B2 * C1 * X)	-0.00088	-0.00087	-0.00087
	(A2 * B1 * !B2 * C1 * X)	0.00109	0.00108	0.00108
	(A2 * !B1 * C1 * X)	-0.00087	-0.00087	-0.00087
	(A2 * !B1 * C1 * X)	0.00107	0.00108	0.00108
	(!A2 * B1 * B2 * C1 * X)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * B2 * C1 * X)	0.00116	0.00117	0.00117
	(!A2 * B1 * B2 * !C1 * X)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * B2 * !C1 * X)	0.00117	0.00118	0.00117
	(!A2 * B1 * !B2 * C1 * X)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * !B2 * C1 * X)	0.00116	0.00117	0.00117
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * B1 * !B2 * !C1 * !X)	0.00137	0.00137	0.00137
	(!A2 * !B1 * C1 * X)	-0.00080	-0.00083	-0.00082
	(!A2 * !B1 * C1 * X)	0.00116	0.00117	0.00117
	(!A2 * !B1 * !C1 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * !B1 * !C1 * !X)	0.00137	0.00137	0.00137

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00101	-0.00100	-0.00100
	(A2 * B1 * B2 * C1 * X)	0.00112	0.00111	0.00110
	(A2 * B1 * B2 * !C1 * X)	-0.00101	-0.00100	-0.00100
	(A2 * B1 * B2 * !C1 * X)	0.00111	0.00111	0.00110
	(A2 * B1 * !B2 * C1 * X)	-0.00101	-0.00100	-0.00100
	(A2 * B1 * !B2 * C1 * X)	0.00108	0.00106	0.00107
	(A2 * !B1 * C1 * X)	-0.00101	-0.00100	-0.00100
	(A2 * !B1 * C1 * X)	0.00108	0.00106	0.00107
	(!A2 * B1 * B2 * C1 * X)	-0.00092	-0.00095	-0.00094
	(!A2 * B1 * B2 * C1 * X)	0.00115	0.00117	0.00116
	(!A2 * B1 * B2 * !C1 * X)	-0.00092	-0.00095	-0.00094
	(!A2 * B1 * B2 * !C1 * X)	0.00116	0.00116	0.00116
	(!A2 * B1 * !B2 * C1 * X)	-0.00092	-0.00095	-0.00094
	(!A2 * B1 * !B2 * C1 * X)	0.00115	0.00117	0.00116
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * B1 * !B2 * !C1 * !X)	0.00138	0.00138	0.00138
	(!A2 * !B1 * C1 * X)	-0.00092	-0.00095	-0.00094
	(!A2 * !B1 * C1 * X)	0.00115	0.00117	0.00116
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00138	0.00138	0.00138

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00197	-0.00198	-0.00196
	(A2 * B1 * B2 * C1 * X)	0.00217	0.00218	0.00216
	(A2 * B1 * B2 * !C1 * X)	-0.00197	-0.00198	-0.00196
	(A2 * B1 * B2 * !C1 * X)	0.00217	0.00218	0.00216
	(A2 * B1 * !B2 * C1 * X)	-0.00196	-0.00196	-0.00196
	(A2 * B1 * !B2 * C1 * X)	0.00211	0.00212	0.00211
	(A2 * !B1 * C1 * X)	-0.00196	-0.00196	-0.00196
	(A2 * !B1 * C1 * X)	0.00211	0.00212	0.00211
	(!A2 * B1 * B2 * C1 * X)	-0.00180	-0.00186	-0.00185
	(!A2 * B1 * B2 * C1 * X)	0.00227	0.00228	0.00226
	(!A2 * B1 * B2 * !C1 * X)	-0.00179	-0.00186	-0.00185
	(!A2 * B1 * B2 * !C1 * X)	0.00226	0.00226	0.00226
	(!A2 * B1 * !B2 * C1 * X)	-0.00180	-0.00186	-0.00185
	(!A2 * B1 * !B2 * C1 * X)	0.00227	0.00228	0.00226
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00095	-0.00096	-0.00095
	(!A2 * B1 * !B2 * !C1 * !X)	0.00255	0.00258	0.00256
	(!A2 * !B1 * C1 * X)	-0.00180	-0.00187	-0.00185
	(!A2 * !B1 * C1 * X)	0.00227	0.00228	0.00226
	(!A2 * !B1 * !C1 * !X)	-0.00095	-0.00096	-0.00095
	(!A2 * !B1 * !C1 * !X)	0.00255	0.00258	0.00256

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)**	0.00103	0.00102	0.00102
	(A1 * B1 * B2 * C1 * X)	-0.00106	-0.00109	-0.00108
	(A1 * B1 * B2 * !C1 * X)	0.00103	0.00102	0.00102
	(A1 * B1 * B2 * !C1 * X)	-0.00106	-0.00109	-0.00108
	(A1 * B1 * !B2 * C1 * X)	0.00102	0.00103	0.00102
	(A1 * B1 * !B2 * C1 * X)	-0.00101	-0.00104	-0.00104
	(A1 * !B1 * C1 * X)	0.00102	0.00103	0.00102
	(A1 * !B1 * C1 * X)	-0.00101	-0.00104	-0.00104
	(!A1 * B1 * B2 * X)	0.00097	0.00098	0.00097
	(!A1 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * B1 * !B2 * !C1 * !X)	0.00081	0.00082	0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * !B1 * !C1 * !X)	0.00081	0.00082	0.00081
	(!A1 * !B1 * !C1 * !X)	-0.00128	-0.00129	-0.00128

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00113	0.00113	0.00112
	(A1 * B1 * B2 * C1 * X)	-0.00105	-0.00108	-0.00107
	(A1 * B1 * B2 * !C1 * X)	0.00113	0.00113	0.00112
	(A1 * B1 * B2 * !C1 * X)	-0.00105	-0.00108	-0.00107
	(A1 * B1 * !B2 * C1 * X)	0.00112	0.00114	0.00113
	(A1 * B1 * !B2 * C1 * X)	-0.00100	-0.00103	-0.00103
	(A1 * !B1 * C1 * X)	0.00112	0.00114	0.00113
	(A1 * !B1 * C1 * X)	-0.00100	-0.00103	-0.00103
	(!A1 * B1 * B2 * X)	0.00106	0.00108	0.00106
	(!A1 * B1 * B2 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00106	0.00107	0.00106
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * B1 * !B2 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00128	-0.00127

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00195	0.00196	0.00194
	(A1 * B1 * B2 * C1 * X)	-0.00209	-0.00216	-0.00215
	(A1 * B1 * B2 * !C1 * X)	0.00195	0.00196	0.00194
	(A1 * B1 * B2 * !C1 * X)	-0.00209	-0.00216	-0.00215
	(A1 * B1 * !B2 * C1 * X)	0.00194	0.00194	0.00193
	(A1 * B1 * !B2 * C1 * X)	-0.00204	-0.00210	-0.00209
	(A1 * !B1 * C1 * X)	0.00194	0.00194	0.00193
	(A1 * !B1 * C1 * X)	-0.00204	-0.00210	-0.00209
	(!A1 * B1 * B2 * X)	0.00183	0.00184	0.00183
	(!A1 * B1 * B2 * X)	-0.00224	-0.00225	-0.00224
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00183	0.00185	0.00183
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00224	-0.00226	-0.00224
	(!A1 * B1 * !B2 * !C1 * !X)	0.00177	0.00178	0.00177
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00230	-0.00230	-0.00230
	(!A1 * !B1 * !C1 * !X)	0.00177	0.00179	0.00177
	(!A1 * !B1 * !C1 * !X)	-0.00230	-0.00231	-0.00230

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)**	-0.00102	-0.00102	-0.00102
	(A1 * B1 * B2 * C1 * X)	0.00109	0.00109	0.00108
	(A1 * B1 * B2 * !C1 * X)	-0.00102	-0.00102	-0.00102
	(A1 * B1 * B2 * !C1 * X)	0.00109	0.00109	0.00108
	(A1 * B1 * !B2 * C1 * X)	-0.00102	-0.00102	-0.00102
	(A1 * B1 * !B2 * C1 * X)	0.00105	0.00104	0.00104
	(A1 * !B1 * C1 * X)	-0.00102	-0.00102	-0.00102
	(A1 * !B1 * C1 * X)	0.00105	0.00104	0.00104
	(!A1 * B1 * B2 * X)	-0.00095	-0.00098	-0.00097
	(!A1 * B1 * B2 * X)	0.00112	0.00114	0.00113
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00095	-0.00098	-0.00097
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00112	0.00114	0.00113
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00079	-0.00082	-0.00081
	(!A1 * B1 * !B2 * !C1 * !X)	0.00128	0.00129	0.00129
	(!A1 * !B1 * !C1 * !X)	-0.00079	-0.00082	-0.00081
	(!A1 * !B1 * !C1 * !X)	0.00128	0.00129	0.00129

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00113	-0.00113	-0.00112
	(A1 * B1 * B2 * C1 * X)	0.00108	0.00108	0.00107
	(A1 * B1 * B2 * !C1 * X)	-0.00113	-0.00113	-0.00112
	(A1 * B1 * B2 * !C1 * X)	0.00108	0.00108	0.00107
	(A1 * B1 * !B2 * C1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * B1 * !B2 * C1 * X)	0.00104	0.00103	0.00103
	(A1 * !B1 * C1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * C1 * X)	0.00104	0.00103	0.00103
	(!A1 * B1 * B2 * X)	-0.00104	-0.00107	-0.00106
	(!A1 * B1 * B2 * X)	0.00111	0.00112	0.00112
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00104	-0.00107	-0.00106
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00112	0.00112	0.00112
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00089	-0.00091	-0.00091
	(!A1 * B1 * !B2 * !C1 * !X)	0.00127	0.00128	0.00127
	(!A1 * !B1 * !C1 * !X)	-0.00089	-0.00091	-0.00091
	(!A1 * !B1 * !C1 * !X)	0.00127	0.00128	0.00127

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00195	-0.00195	-0.00194
	(A1 * B1 * B2 * C1 * X)	0.00215	0.00216	0.00215
	(A1 * B1 * B2 * !C1 * X)	-0.00195	-0.00195	-0.00194
	(A1 * B1 * B2 * !C1 * X)	0.00215	0.00216	0.00215
	(A1 * B1 * !B2 * C1 * X)	-0.00194	-0.00194	-0.00193
	(A1 * B1 * !B2 * C1 * X)	0.00209	0.00210	0.00209
	(A1 * !B1 * C1 * X)	-0.00194	-0.00194	-0.00193
	(A1 * !B1 * C1 * X)	0.00209	0.00210	0.00209
	(!A1 * B1 * B2 * X)	-0.00179	-0.00184	-0.00183
	(!A1 * B1 * B2 * X)	0.00225	0.00226	0.00225
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00179	-0.00185	-0.00183
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00225	0.00226	0.00225
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00174	-0.00178	-0.00177
	(!A1 * B1 * !B2 * !C1 * !X)	0.00231	0.00232	0.00230
	(!A1 * !B1 * !C1 * !X)	-0.00174	-0.00179	-0.00177
	(!A1 * !B1 * !C1 * !X)	0.00231	0.00232	0.00230

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)**	0.00088	0.00088	0.00089
	(A1 * A2 * B2 * C1 * X)	-0.00087	-0.00086	-0.00086
	(A1 * A2 * B2 * !C1 * X)	0.00089	0.00088	0.00088
	(A1 * A2 * B2 * !C1 * X)	-0.00080	-0.00079	-0.00079
	(A1 * A2 * !B2 * C1 * X)	0.00083	0.00084	0.00083
	(A1 * A2 * !B2 * C1 * X)	-0.00083	-0.00084	-0.00083
	(A1 * A2 * !B2 * !C1 * X)	0.00083	0.00084	0.00083
	(A1 * A2 * !B2 * !C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * B2 * C1 * X)	0.00089	0.00089	0.00088
	(A1 * !A2 * B2 * C1 * X)	-0.00110	-0.00112	-0.00111
	(A1 * !A2 * !B2 * C1 * X)	0.00082	0.00083	0.00083
	(A1 * !A2 * !B2 * C1 * X)	-0.00115	-0.00115	-0.00115
	(A1 * !A2 * !B2 * !C1 * !X)	0.00032	0.00032	0.00031
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00136	-0.00136	-0.00137
	(!A1 * B2 * C1 * X)	0.00089	0.00089	0.00088
	(!A1 * B2 * C1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * !B2 * C1 * X)	0.00082	0.00083	0.00083
	(!A1 * !B2 * C1 * X)	-0.00115	-0.00115	-0.00115
	(!A1 * !B2 * !C1 * !X)	0.00032	0.00032	0.00031
	(!A1 * !B2 * !C1 * !X)	-0.00136	-0.00136	-0.00137

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00108	0.00108	0.00108
	(A1 * A2 * B2 * C1 * X)	-0.00089	-0.00088	-0.00088
	(A1 * A2 * B2 * !C1 * X)	0.00107	0.00107	0.00107
	(A1 * A2 * B2 * !C1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * !B2 * C1 * X)	0.00101	0.00103	0.00102
	(A1 * A2 * !B2 * C1 * X)	-0.00084	-0.00086	-0.00084
	(A1 * A2 * !B2 * !C1 * X)	0.00101	0.00102	0.00101
	(A1 * A2 * !B2 * !C1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * B2 * C1 * X)	0.00108	0.00108	0.00107
	(A1 * !A2 * B2 * C1 * X)	-0.00112	-0.00113	-0.00113
	(A1 * !A2 * !B2 * C1 * X)	0.00100	0.00101	0.00101
	(A1 * !A2 * !B2 * C1 * X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !B2 * !C1 * !X)	0.00039	0.00038	0.00037
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00144	-0.00144	-0.00145
	(!A1 * B2 * C1 * X)	0.00108	0.00108	0.00107
	(!A1 * B2 * C1 * X)	-0.00112	-0.00113	-0.00113
	(!A1 * !B2 * C1 * X)	0.00100	0.00101	0.00101
	(!A1 * !B2 * C1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * !B2 * !C1 * !X)	0.00038	0.00038	0.00037
	(!A1 * !B2 * !C1 * !X)	-0.00144	-0.00144	-0.00145

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00190	0.00191	0.00190
	(A1 * A2 * B2 * C1 * X)	-0.00179	-0.00178	-0.00178
	(A1 * A2 * B2 * !C1 * X)	0.00189	0.00189	0.00189
	(A1 * A2 * B2 * !C1 * X)	-0.00162	-0.00161	-0.00161
	(A1 * A2 * !B2 * C1 * X)	0.00181	0.00182	0.00181
	(A1 * A2 * !B2 * C1 * X)	-0.00171	-0.00172	-0.00171
	(A1 * A2 * !B2 * !C1 * X)	0.00179	0.00180	0.00180
	(A1 * A2 * !B2 * !C1 * X)	-0.00160	-0.00162	-0.00161
	(A1 * !A2 * B2 * C1 * X)	0.00187	0.00189	0.00188
	(A1 * !A2 * B2 * C1 * X)	-0.00221	-0.00226	-0.00225
	(A1 * !A2 * !B2 * C1 * X)	0.00178	0.00179	0.00179
	(A1 * !A2 * !B2 * C1 * X)	-0.00231	-0.00232	-0.00231
	(A1 * !A2 * !B2 * !C1 * !X)	0.00080	0.00081	0.00077
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00271	-0.00272	-0.00277
	(!A1 * B2 * C1 * X)	0.00187	0.00189	0.00188
	(!A1 * B2 * C1 * X)	-0.00221	-0.00226	-0.00225
	(!A1 * !B2 * C1 * X)	0.00178	0.00179	0.00179
	(!A1 * !B2 * C1 * X)	-0.00231	-0.00232	-0.00231
	(!A1 * !B2 * !C1 * !X)	0.00080	0.00081	0.00077
	(!A1 * !B2 * !C1 * !X)	-0.00271	-0.00272	-0.00277

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)**	-0.00088	-0.00088	-0.00088
	(A1 * A2 * B2 * C1 * X)	0.00087	0.00086	0.00086
	(A1 * A2 * B2 * !C1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * B2 * !C1 * X)	0.00081	0.00080	0.00081
	(A1 * A2 * !B2 * C1 * X)	-0.00081	-0.00084	-0.00083
	(A1 * A2 * !B2 * C1 * X)	0.00083	0.00084	0.00083
	(A1 * A2 * !B2 * !C1 * X)	-0.00081	-0.00084	-0.00083
	(A1 * A2 * !B2 * !C1 * X)	0.00079	0.00079	0.00079
	(A1 * !A2 * B2 * C1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * !A2 * B2 * C1 * X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !B2 * C1 * X)	-0.00080	-0.00083	-0.00083
	(A1 * !A2 * !B2 * C1 * X)	0.00115	0.00115	0.00115
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(A1 * !A2 * !B2 * !C1 * !X)	0.00137	0.00137	0.00137
	(!A1 * B2 * C1 * X)	-0.00088	-0.00088	-0.00088
	(!A1 * B2 * C1 * X)	0.00111	0.00112	0.00111
	(!A1 * !B2 * C1 * X)	-0.00080	-0.00083	-0.00083
	(!A1 * !B2 * C1 * X)	0.00115	0.00115	0.00115
	(!A1 * !B2 * !C1 * !X)	-0.00030	-0.00030	-0.00030
	(!A1 * !B2 * !C1 * !X)	0.00137	0.00137	0.00137

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00108	-0.00107	-0.00107
	(A1 * A2 * B2 * C1 * X)	0.00089	0.00088	0.00088
	(A1 * A2 * B2 * !C1 * X)	-0.00106	-0.00106	-0.00106
	(A1 * A2 * B2 * !C1 * X)	0.00082	0.00082	0.00082
	(A1 * A2 * !B2 * C1 * X)	-0.00099	-0.00103	-0.00102
	(A1 * A2 * !B2 * C1 * X)	0.00084	0.00086	0.00084
	(A1 * A2 * !B2 * !C1 * X)	-0.00098	-0.00102	-0.00101
	(A1 * A2 * !B2 * !C1 * X)	0.00080	0.00080	0.00080
	(A1 * !A2 * B2 * C1 * X)	-0.00107	-0.00107	-0.00107
	(A1 * !A2 * B2 * C1 * X)	0.00112	0.00113	0.00113
	(A1 * !A2 * !B2 * C1 * X)	-0.00098	-0.00101	-0.00101
	(A1 * !A2 * !B2 * C1 * X)	0.00116	0.00117	0.00117
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00036	-0.00037	-0.00037
	(A1 * !A2 * !B2 * !C1 * !X)	0.00145	0.00145	0.00145
	(!A1 * B2 * C1 * X)	-0.00107	-0.00107	-0.00107
	(!A1 * B2 * C1 * X)	0.00112	0.00113	0.00113
	(!A1 * !B2 * C1 * X)	-0.00098	-0.00101	-0.00101
	(!A1 * !B2 * C1 * X)	0.00116	0.00117	0.00117
	(!A1 * !B2 * !C1 * !X)	-0.00036	-0.00037	-0.00037
	(!A1 * !B2 * !C1 * !X)	0.00145	0.00145	0.00145

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00190	-0.00190	-0.00189
	(A1 * A2 * B2 * C1 * X)	0.00179	0.00178	0.00178
	(A1 * A2 * B2 * !C1 * X)	-0.00187	-0.00187	-0.00185
	(A1 * A2 * B2 * !C1 * X)	0.00165	0.00165	0.00167
	(A1 * A2 * !B2 * C1 * X)	-0.00177	-0.00182	-0.00181
	(A1 * A2 * !B2 * C1 * X)	0.00171	0.00172	0.00171
	(A1 * A2 * !B2 * !C1 * X)	-0.00175	-0.00180	-0.00180
	(A1 * A2 * !B2 * !C1 * X)	0.00160	0.00162	0.00161
	(A1 * !A2 * B2 * C1 * X)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * B2 * C1 * X)	0.00224	0.00226	0.00225
	(A1 * !A2 * !B2 * C1 * X)	-0.00175	-0.00179	-0.00179
	(A1 * !A2 * !B2 * C1 * X)	0.00231	0.00233	0.00231
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * !B2 * !C1 * !X)	0.00277	0.00277	0.00277
	(!A1 * B2 * C1 * X)	-0.00187	-0.00188	-0.00187
	(!A1 * B2 * C1 * X)	0.00224	0.00226	0.00225
	(!A1 * !B2 * C1 * X)	-0.00175	-0.00179	-0.00179
	(!A1 * !B2 * C1 * X)	0.00231	0.00233	0.00231
	(!A1 * !B2 * !C1 * !X)	-0.00075	-0.00075	-0.00075
	(!A1 * !B2 * !C1 * !X)	0.00277	0.00277	0.00277

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)**	0.00092	0.00092	0.00092
	(A1 * A2 * B1 * C1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * B1 * !C1 * X)	0.00093	0.00091	0.00091
	(A1 * A2 * B1 * !C1 * X)	-0.00078	-0.00077	-0.00077
	(A1 * A2 * !B1 * C1 * X)	0.00086	0.00088	0.00086
	(A1 * A2 * !B1 * C1 * X)	-0.00082	-0.00082	-0.00081
	(A1 * A2 * !B1 * !C1 * X)	0.00086	0.00088	0.00086
	(A1 * A2 * !B1 * !C1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * B1 * C1 * X)	0.00092	0.00092	0.00091
	(A1 * !A2 * B1 * C1 * X)	-0.00108	-0.00109	-0.00109
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00086	0.00086	0.00086
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00112	-0.00112	-0.00113
	(A1 * !A2 * !B1 * !C1 * !X)	0.00077	0.00078	0.00076
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * B1 * C1 * X)	0.00092	0.00092	0.00091
	(!A1 * B1 * C1 * X)	-0.00108	-0.00109	-0.00109
	(!A1 * !B1 * !C1 * !X)	0.00077	0.00078	0.00076
	(!A1 * !B1 * !C1 * !X)	-0.00122	-0.00122	-0.00122

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00111	0.00111	0.00111
	(A1 * A2 * B1 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * B1 * !C1 * X)	0.00112	0.00110	0.00110
	(A1 * A2 * B1 * !C1 * X)	-0.00075	-0.00074	-0.00074
	(A1 * A2 * !B1 * C1 * X)	0.00105	0.00106	0.00105
	(A1 * A2 * !B1 * C1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A2 * !B1 * !C1 * X)	0.00104	0.00106	0.00104
	(A1 * A2 * !B1 * !C1 * X)	-0.00073	-0.00074	-0.00073
	(A1 * !A2 * B1 * C1 * X)	0.00111	0.00111	0.00110
	(A1 * !A2 * B1 * C1 * X)	-0.00104	-0.00105	-0.00105
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00104	0.00105	0.00104
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * !B1 * !C1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00123	-0.00123	-0.00123
	(!A1 * B1 * C1 * X)	0.00112	0.00111	0.00110
	(!A1 * B1 * C1 * X)	-0.00104	-0.00105	-0.00105
	(!A1 * !B1 * !C1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !B1 * !C1 * !X)	-0.00123	-0.00123	-0.00123

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00213	0.00215	0.00212
	(A1 * A2 * B1 * C1 * X)	-0.00170	-0.00172	-0.00170
	(A1 * A2 * B1 * !C1 * X)	0.00210	0.00213	0.00210
	(A1 * A2 * B1 * !C1 * X)	-0.00153	-0.00155	-0.00154
	(A1 * A2 * !B1 * C1 * X)	0.00202	0.00203	0.00202
	(A1 * A2 * !B1 * C1 * X)	-0.00163	-0.00165	-0.00164
	(A1 * A2 * !B1 * !C1 * X)	0.00203	0.00203	0.00202
	(A1 * A2 * !B1 * !C1 * X)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * B1 * C1 * X)	0.00209	0.00210	0.00209
	(A1 * !A2 * B1 * C1 * X)	-0.00214	-0.00219	-0.00217
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00200	0.00202	0.00201
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00223	-0.00224	-0.00224
	(A1 * !A2 * !B1 * !C1 * !X)	0.00193	0.00194	0.00194
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00229	-0.00231	-0.00230
	(!A1 * B1 * C1 * X)	0.00210	0.00210	0.00209
	(!A1 * B1 * C1 * X)	-0.00214	-0.00219	-0.00217
	(!A1 * !B1 * !C1 * !X)	0.00193	0.00194	0.00194
	(!A1 * !B1 * !C1 * !X)	-0.00229	-0.00231	-0.00230

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)**	-0.00091	-0.00091	-0.00091
	(A1 * A2 * B1 * C1 * X)	0.00085	0.00085	0.00085
	(A1 * A2 * B1 * !C1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * B1 * !C1 * X)	0.00078	0.00078	0.00079
	(A1 * A2 * !B1 * C1 * X)	-0.00085	-0.00087	-0.00086
	(A1 * A2 * !B1 * C1 * X)	0.00082	0.00082	0.00081
	(A1 * A2 * !B1 * !C1 * X)	-0.00084	-0.00087	-0.00086
	(A1 * A2 * !B1 * !C1 * X)	0.00077	0.00077	0.00077
	(A1 * !A2 * B1 * C1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * !A2 * B1 * C1 * X)	0.00109	0.00109	0.00109
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00084	-0.00086	-0.00086
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00112	0.00112	0.00113
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00075	-0.00077	-0.00076
	(A1 * !A2 * !B1 * !C1 * !X)	0.00122	0.00122	0.00122
	(!A1 * B1 * C1 * X)	-0.00091	-0.00092	-0.00091
	(!A1 * B1 * C1 * X)	0.00109	0.00109	0.00109
	(!A1 * !B1 * !C1 * !X)	-0.00075	-0.00077	-0.00076
	(!A1 * !B1 * !C1 * !X)	0.00122	0.00122	0.00122

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00110	-0.00110	-0.00110
	(A1 * A2 * B1 * C1 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * B1 * !C1 * X)	-0.00108	-0.00108	-0.00108
	(A1 * A2 * B1 * !C1 * X)	0.00075	0.00075	0.00076
	(A1 * A2 * !B1 * C1 * X)	-0.00102	-0.00105	-0.00105
	(A1 * A2 * !B1 * C1 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !B1 * !C1 * X)	-0.00102	-0.00105	-0.00104
	(A1 * A2 * !B1 * !C1 * X)	0.00073	0.00074	0.00073
	(A1 * !A2 * B1 * C1 * X)	-0.00110	-0.00111	-0.00110
	(A1 * !A2 * B1 * C1 * X)	0.00105	0.00105	0.00105
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00102	-0.00104	-0.00104
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00108	0.00109	0.00109
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00090	-0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	0.00123	0.00123	0.00123
	(!A1 * B1 * C1 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * B1 * C1 * X)	0.00105	0.00105	0.00105
	(!A1 * !B1 * !C1 * !X)	-0.00087	-0.00090	-0.00090
	(!A1 * !B1 * !C1 * !X)	0.00123	0.00123	0.00123

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00211	-0.00212	-0.00211
	(A1 * A2 * B1 * C1 * X)	0.00170	0.00172	0.00170
	(A1 * A2 * B1 * !C1 * X)	-0.00208	-0.00209	-0.00206
	(A1 * A2 * B1 * !C1 * X)	0.00157	0.00158	0.00159
	(A1 * A2 * !B1 * C1 * X)	-0.00198	-0.00203	-0.00202
	(A1 * A2 * !B1 * C1 * X)	0.00163	0.00165	0.00164
	(A1 * A2 * !B1 * !C1 * X)	-0.00198	-0.00203	-0.00202
	(A1 * A2 * !B1 * !C1 * X)	0.00153	0.00154	0.00153
	(A1 * !A2 * B1 * C1 * X)	-0.00209	-0.00210	-0.00209
	(A1 * !A2 * B1 * C1 * X)	0.00217	0.00219	0.00217
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00197	-0.00202	-0.00201
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00223	0.00226	0.00224
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00189	-0.00194	-0.00194
	(A1 * !A2 * !B1 * !C1 * !X)	0.00230	0.00232	0.00230
	(!A1 * B1 * C1 * X)	-0.00209	-0.00210	-0.00209
	(!A1 * B1 * C1 * X)	0.00216	0.00219	0.00217
	(!A1 * !B1 * !C1 * !X)	-0.00189	-0.00194	-0.00194
	(!A1 * !B1 * !C1 * !X)	0.00230	0.00232	0.00230

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)	0.00113	0.00113	0.00112
	(A1 * B1 * B2 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * B1 * !B2 * X)	0.00112	0.00113	0.00112
	(A1 * A2 * B1 * !B2 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * !B1 * X)	0.00113	0.00113	0.00112
	(A1 * A2 * !B1 * X)	-0.00068	-0.00068	-0.00068
	(!A1 * B1 * B2 * X)	0.00113	0.00113	0.00112
	(!A1 * B1 * B2 * X)	-0.00068	-0.00068	-0.00068
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00118	0.00118	0.00118
	(A1 * B1 * B2 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * B1 * !B2 * X)	0.00120	0.00118	0.00118
	(A1 * A2 * B1 * !B2 * X)	-0.00069	-0.00068	-0.00068
	(A1 * A2 * !B1 * X)	0.00118	0.00118	0.00118
	(A1 * A2 * !B1 * X)	-0.00067	-0.00068	-0.00068
	(!A1 * B1 * B2 * X)	0.00118	0.00118	0.00118
	(!A1 * B1 * B2 * X)	-0.00068	-0.00068	-0.00068
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00198	0.00198	0.00198
	(A1 * B1 * B2 * X)	-0.00143	-0.00143	-0.00143
	(A1 * A2 * B1 * !B2 * X)	0.00197	0.00198	0.00198
	(A1 * A2 * B1 * !B2 * X)	-0.00142	-0.00143	-0.00143
	(A1 * A2 * !B1 * X)	0.00198	0.00198	0.00198
	(A1 * A2 * !B1 * X)	-0.00143	-0.00143	-0.00143
	(!A1 * B1 * B2 * X)	0.00197	0.00198	0.00198
	(!A1 * B1 * B2 * X)	-0.00145	-0.00145	-0.00145

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)	-0.00105	-0.00105	-0.00112
	(A1 * B1 * B2 * X)	0.00075	0.00075	0.00069
	(A1 * A2 * B1 * !B2 * X)	-0.00094	-0.00095	-0.00109
	(A1 * A2 * B1 * !B2 * X)	0.00081	0.00081	0.00071
	(A1 * A2 * !B1 * X)	-0.00094	-0.00095	-0.00109
	(A1 * A2 * !B1 * X)	0.00081	0.00081	0.00071
	(!A1 * B1 * B2 * X)	-0.00104	-0.00105	-0.00112
	(!A1 * B1 * B2 * X)	0.00075	0.00075	0.00070
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00111	-0.00111	-0.00118
	(A1 * B1 * B2 * X)	0.00075	0.00074	0.00069
	(A1 * A2 * B1 * !B2 * X)	-0.00100	-0.00101	-0.00115
	(A1 * A2 * B1 * !B2 * X)	0.00081	0.00081	0.00071
	(A1 * A2 * !B1 * X)	-0.00101	-0.00101	-0.00115
	(A1 * A2 * !B1 * X)	0.00081	0.00081	0.00071
	(!A1 * B1 * B2 * X)	-0.00111	-0.00111	-0.00118
	(!A1 * B1 * B2 * X)	0.00075	0.00075	0.00070
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00181	-0.00183	-0.00197
	(A1 * B1 * B2 * X)	0.00159	0.00158	0.00147
	(A1 * A2 * B1 * !B2 * X)	-0.00159	-0.00161	-0.00191
	(A1 * A2 * B1 * !B2 * X)	0.00174	0.00173	0.00150
	(A1 * A2 * !B1 * X)	-0.00159	-0.00161	-0.00191
	(A1 * A2 * !B1 * X)	0.00174	0.00173	0.00150
	(!A1 * B1 * B2 * X)	-0.00181	-0.00182	-0.00196
	(!A1 * B1 * B2 * X)	0.00161	0.00161	0.00148

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222oi_1	14.38560
sky130_fd_sc_hs__a222oi_2	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	Y
sky130_fd_sc_hs__a222oi_1	0.00246	0.00228	0.00241	0.00241	0.00246	0.00253	0.08946
sky130_fd_sc_hs__a222oi_2	0.00493	0.00429	0.00489	0.00441	0.00446	0.00504	0.16744

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.00018	0.00024
sky130_fd_sc_hs__a222oi_2	0.00000	0.00036	0.00047

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)	0.84517	2.62710	13.43830
	A2->Y (FR)	0.92692	2.72409	13.54840
	B1->Y (FR)	0.77152	2.52270	13.55040
	B2->Y (FR)	0.86769	2.63472	13.69280
	C1->Y (FR)	0.61701	2.30311	12.91210
	C2->Y (FR)	0.70880	2.40622	13.01060
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.78489	2.31389	13.28000
	A2->Y (FR)	0.88687	2.43672	13.48490
	B1->Y (FR)	0.71006	2.19962	13.32920
	B2->Y (FR)	0.82401	2.35263	13.68200
	C1->Y (FR)	0.54807	2.00216	12.87860
	C2->Y (FR)	0.66418	2.12373	12.99770

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.07034	0.60863	3.99688
	A2->Y (RF)	0.07510	0.59366	3.94139
	B1->Y (RF)	0.06814	0.58580	3.93864
	B2->Y (RF)	0.07375	0.57510	3.88703
	C1->Y (RF)	0.05771	0.56053	3.89660
	C2->Y (RF)	0.06296	0.55172	3.84736
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.06513	0.56692	3.97885
	A2->Y (RF)	0.07091	0.55948	3.94334
	B1->Y (RF)	0.06463	0.54626	3.94207
	B2->Y (RF)	0.07080	0.54383	3.91539
	C1->Y (RF)	0.04949	0.50189	3.81436
	C2->Y (RF)	0.05661	0.50351	3.78657

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00137	0.00123	0.00120
	A1	0.00644	0.00630	0.00626
	A2	0.00154	0.00147	0.00144
	A2	0.00710	0.00702	0.00698
	B1	0.00139	0.00125	0.00122
	B1	0.00586	0.00571	0.00567
	B2	0.00159	0.00150	0.00146
	B2	0.00659	0.00649	0.00644
	C1	0.00133	0.00116	0.00112
	C1	0.00534	0.00516	0.00513
	C2	0.00156	0.00144	0.00139
	C2	0.00608	0.00596	0.00590
sky130_fd_sc_hs__a222oi_2	A1	0.00214	0.00185	0.00180
	A1	0.01227	0.01197	0.01191
	A2	0.00274	0.00254	0.00249
	A2	0.01345	0.01326	0.01321
	B1	0.00220	0.00190	0.00185
	B1	0.01120	0.01089	0.01082
	B2	0.00271	0.00250	0.00245
	B2	0.01238	0.01217	0.01212
	C1	0.00209	0.00180	0.00176
	C1	0.00977	0.00948	0.00942
	C2	0.00257	0.00230	0.00223
	C2	0.01153	0.01127	0.01118

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00721	0.00713	0.00693
	A1	0.00261	0.00251	0.00236
	A2	0.00770	0.00763	0.00742
	A2	0.00259	0.00250	0.00235
	B1	0.00585	0.00581	0.00569
	B1	0.00158	0.00152	0.00141
	B2	0.00641	0.00639	0.00625
	B2	0.00157	0.00153	0.00142
	C1	0.00463	0.00462	0.00455
	C1	0.00055	0.00053	0.00048
	C2	0.00515	0.00514	0.00509
	C2	0.00054	0.00053	0.00047
sky130_fd_sc_hs__a222oi_2	A1	0.01351	0.01334	0.01297
	A1	0.00431	0.00410	0.00382
	A2	0.01425	0.01410	0.01374
	A2	0.00435	0.00418	0.00391
	B1	0.01104	0.01093	0.01070
	B1	0.00242	0.00227	0.00208
	B2	0.01198	0.01190	0.01166
	B2	0.00258	0.00247	0.00229
	C1	0.00829	0.00826	0.00819
	C1	0.00049	0.00043	0.00037
	C2	0.00962	0.00958	0.00952
	C2	0.00046	0.00040	0.00033

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)**	0.00087	0.00087	0.00087
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00109	-0.00111	-0.00111
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00087	0.00087	0.00087
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00109	-0.00111	-0.00111
	(A2 * B1 * B2 * !C1 * !Y)	0.00087	0.00087	0.00087
	(A2 * B1 * B2 * !C1 * !Y)	-0.00109	-0.00111	-0.00111
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00087	0.00087	0.00087
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00105	-0.00107	-0.00107
	(A2 * !B1 * C1 * C2 * !Y)	0.00087	0.00087	0.00087
	(A2 * !B1 * C1 * C2 * !Y)	-0.00105	-0.00107	-0.00107
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00081	0.00082	0.00081
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00116	-0.00116	-0.00116
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00081	0.00081	0.00081
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00116	-0.00116	-0.00116
	(!A2 * B1 * B2 * !C1 * !Y)	0.00081	0.00081	0.00081
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00116	-0.00116	-0.00116
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00081	0.00082	0.00081
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00115	-0.00116	-0.00116
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00035	0.00035	0.00034
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00132	-0.00132	-0.00134
	(!A2 * B1 * !B2 * !C1 * Y)	0.00035	0.00035	0.00034
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00132	-0.00132	-0.00134
	(!A2 * !B1 * C1 * C2 * !Y)	0.00081	0.00082	0.00081
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00116	-0.00116	-0.00116
	(!A2 * !B1 * C1 * !C2 * Y)	0.00035	0.00035	0.00034
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00132	-0.00132	-0.00134
	(!A2 * !B1 * !C1 * Y)	0.00035	0.00035	0.00034
	(!A2 * !B1 * !C1 * Y)	-0.00132	-0.00132	-0.00134

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00181	0.00180	0.00180
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00221	-0.00226	-0.00225
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00181	0.00180	0.00179
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00221	-0.00227	-0.00225
	(A2 * B1 * B2 * !C1 * !Y)	0.00181	0.00180	0.00179
	(A2 * B1 * B2 * !C1 * !Y)	-0.00221	-0.00226	-0.00225
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00180	0.00181	0.00180
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00211	-0.00217	-0.00216
	(A2 * !B1 * C1 * C2 * !Y)	0.00180	0.00181	0.00180
	(A2 * !B1 * C1 * C2 * !Y)	-0.00211	-0.00217	-0.00216
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00170	0.00171	0.00170
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00235	-0.00236	-0.00235
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00170	0.00171	0.00170
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00235	-0.00236	-0.00235
	(!A2 * B1 * B2 * !C1 * !Y)	0.00170	0.00171	0.00170
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00235	-0.00236	-0.00235
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00169	0.00170	0.00170
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00234	-0.00236	-0.00235
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00069	0.00070	0.00067
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00276	-0.00278	-0.00281
	(!A2 * B1 * !B2 * !C1 * Y)	0.00069	0.00070	0.00067
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00276	-0.00278	-0.00281
	(!A2 * !B1 * C1 * C2 * !Y)	0.00169	0.00171	0.00170
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00235	-0.00236	-0.00235
	(!A2 * !B1 * C1 * !C2 * Y)	0.00069	0.00070	0.00067
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00276	-0.00278	-0.00281
	(!A2 * !B1 * !C1 * Y)	0.00069	0.00070	0.00067
	(!A2 * !B1 * !C1 * Y)	-0.00276	-0.00278	-0.00281

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)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00112	0.00111	0.00111
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00112	0.00111	0.00111
	(A2 * B1 * B2 * !C1 * !Y)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * !C1 * !Y)	0.00112	0.00111	0.00111
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00107	0.00107	0.00107
	(A2 * !B1 * C1 * C2 * !Y)	-0.00087	-0.00087	-0.00087
	(A2 * !B1 * C1 * C2 * !Y)	0.00108	0.00107	0.00107
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00079	-0.00082	-0.00081
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00116	0.00118	0.00116
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00079	-0.00081	-0.00081
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00116	0.00117	0.00116
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00079	-0.00081	-0.00081
	(!A2 * B1 * B2 * !C1 * !Y)	0.00116	0.00117	0.00116
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00079	-0.00082	-0.00081
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00115	0.00118	0.00116
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00135	0.00134	0.00134
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * B1 * !B2 * !C1 * Y)	0.00135	0.00134	0.00134
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00079	-0.00082	-0.00081
	(!A2 * !B1 * C1 * C2 * !Y)	0.00116	0.00117	0.00116
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * C1 * !C2 * Y)	0.00135	0.00134	0.00134
	(!A2 * !B1 * !C1 * Y)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * !C1 * Y)	0.00135	0.00134	0.00134

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00179	-0.00180	-0.00179
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00224	0.00226	0.00225
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00179	-0.00180	-0.00179
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00223	0.00227	0.00225
	(A2 * B1 * B2 * !C1 * !Y)	-0.00179	-0.00180	-0.00179
	(A2 * B1 * B2 * !C1 * !Y)	0.00224	0.00226	0.00225
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00179	-0.00180	-0.00180
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00216	0.00217	0.00216
	(A2 * !B1 * C1 * C2 * !Y)	-0.00180	-0.00180	-0.00180
	(A2 * !B1 * C1 * C2 * !Y)	0.00216	0.00217	0.00216
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00166	-0.00171	-0.00170
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00235	0.00237	0.00235
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00166	-0.00171	-0.00170
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00235	0.00237	0.00235
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00166	-0.00171	-0.00170
	(!A2 * B1 * B2 * !C1 * !Y)	0.00235	0.00237	0.00235
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00165	-0.00170	-0.00170
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00234	0.00237	0.00235
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00066	-0.00066	-0.00066
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00281	0.00281	0.00282
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00066	-0.00066	-0.00066
	(!A2 * B1 * !B2 * !C1 * Y)	0.00281	0.00281	0.00282
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00165	-0.00171	-0.00170
	(!A2 * !B1 * C1 * C2 * !Y)	0.00235	0.00237	0.00235
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00066	-0.00066	-0.00066
	(!A2 * !B1 * C1 * !C2 * Y)	0.00281	0.00281	0.00282
	(!A2 * !B1 * !C1 * Y)	-0.00066	-0.00066	-0.00066
	(!A2 * !B1 * !C1 * Y)	0.00281	0.00281	0.00282

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)	0.00091	0.00090	0.00090
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00109	-0.00111	-0.00111
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00091	0.00090	0.00090
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00109	-0.00111	-0.00111
	(A1 * B1 * B2 * !C1 * !Y)	0.00091	0.00090	0.00090
	(A1 * B1 * B2 * !C1 * !Y)	-0.00109	-0.00111	-0.00111
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00090	0.00091	0.00090
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00104	-0.00107	-0.00107
	(A1 * !B1 * C1 * C2 * !Y)	0.00090	0.00091	0.00090
	(A1 * !B1 * C1 * C2 * !Y)	-0.00104	-0.00107	-0.00107
	(!A1 * B1 * B2 * !Y)	0.00085	0.00086	0.00085
	(!A1 * B1 * B2 * !Y)	-0.00115	-0.00116	-0.00115
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00084	0.00086	0.00085
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00115	-0.00116	-0.00115
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00084	0.00086	0.00085
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00115	-0.00116	-0.00115
	(!A1 * B1 * !B2 * !C1 * Y)	0.00084	0.00086	0.00085
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00115	-0.00116	-0.00115
	(!A1 * !B1 * C1 * !C2 * Y)	0.00085	0.00086	0.00085
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00115	-0.00116	-0.00115
	(!A1 * !B1 * !C1 * Y)	0.00085	0.00086	0.00085
	(!A1 * !B1 * !C1 * Y)	-0.00115	-0.00116	-0.00115

	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00169	0.00169	0.00168
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00205	-0.00211	-0.00209
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00169	0.00169	0.00168
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00205	-0.00211	-0.00209
	(A1 * B1 * B2 * !C1 * !Y)	0.00169	0.00169	0.00168
	(A1 * B1 * B2 * !C1 * !Y)	-0.00205	-0.00211	-0.00209
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00168	0.00170	0.00168
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00197	-0.00203	-0.00202
	(A1 * !B1 * C1 * C2 * !Y)	0.00169	0.00170	0.00168
	(A1 * !B1 * C1 * C2 * !Y)	-0.00197	-0.00203	-0.00202
	(!A1 * B1 * B2 * !Y)	0.00159	0.00160	0.00159
sky130_fd_sc_hs__a222oi_2	**(!A1 * B1 * B2 * !Y)**	-0.00217	-0.00218	-0.00217
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00158	0.00160	0.00159
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00216	-0.00218	-0.00217
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00153	0.00154	0.00152
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00224	-0.00224	-0.00223
	(!A1 * B1 * !B2 * !C1 * Y)	0.00153	0.00154	0.00152
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00224	-0.00224	-0.00223
	(!A1 * !B1 * C1 * !C2 * Y)	0.00153	0.00154	0.00152
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00224	-0.00224	-0.00223
	(!A1 * !B1 * !C1 * Y)	0.00153	0.00154	0.00152
	(!A1 * !B1 * !C1 * Y)	-0.00224	-0.00224	-0.00223

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

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

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00090	-0.00090	-0.00090
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00111	0.00111	0.00111
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00111	0.00111	0.00111
	(A1 * B1 * B2 * !C1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * B1 * B2 * !C1 * !Y)	0.00111	0.00111	0.00111
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00107	0.00107	0.00107
	(A1 * !B1 * C1 * C2 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * !B1 * C1 * C2 * !Y)	0.00107	0.00107	0.00107
	(!A1 * B1 * B2 * !Y)	-0.00083	-0.00086	-0.00085
	(!A1 * B1 * B2 * !Y)	0.00115	0.00116	0.00116
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00083	-0.00086	-0.00085
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00115	0.00116	0.00116
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00083	-0.00085	-0.00085
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00115	0.00116	0.00116
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00083	-0.00085	-0.00085
	(!A1 * B1 * !B2 * !C1 * Y)	0.00115	0.00116	0.00116
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00083	-0.00085	-0.00085
	(!A1 * !B1 * C1 * !C2 * Y)	0.00115	0.00116	0.00116
	(!A1 * !B1 * !C1 * Y)	-0.00083	-0.00085	-0.00085
	(!A1 * !B1 * !C1 * Y)	0.00115	0.00116	0.00116

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00167	-0.00169	-0.00168
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00208	0.00211	0.00209
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00167	-0.00169	-0.00168
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00208	0.00211	0.00209
	(A1 * B1 * B2 * !C1 * !Y)	-0.00167	-0.00169	-0.00168
	(A1 * B1 * B2 * !C1 * !Y)	0.00207	0.00211	0.00209
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00167	-0.00168	-0.00168
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00201	0.00203	0.00202
	(A1 * !B1 * C1 * C2 * !Y)	-0.00168	-0.00168	-0.00168
	(A1 * !B1 * C1 * C2 * !Y)	0.00201	0.00203	0.00202
	(!A1 * B1 * B2 * !Y)	-0.00156	-0.00160	-0.00159
	(!A1 * B1 * B2 * !Y)	0.00218	0.00219	0.00217
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00156	-0.00160	-0.00159
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00218	0.00219	0.00217
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00149	-0.00153	-0.00152
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00225	0.00225	0.00224
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00149	-0.00153	-0.00152
	(!A1 * B1 * !B2 * !C1 * Y)	0.00225	0.00225	0.00224
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00149	-0.00153	-0.00152
	(!A1 * !B1 * C1 * !C2 * Y)	0.00225	0.00225	0.00224
	(!A1 * !B1 * !C1 * Y)	-0.00149	-0.00153	-0.00152
	(!A1 * !B1 * !C1 * Y)	0.00225	0.00225	0.00224

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)**	0.00087	0.00087	0.00087
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00085	-0.00084	-0.00084
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00087	0.00086	0.00086
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00079	-0.00078	-0.00078
	(A1 * A2 * B2 * !C1 * !Y)	0.00087	0.00086	0.00086
	(A1 * A2 * B2 * !C1 * !Y)	-0.00079	-0.00078	-0.00078
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00082	0.00082	0.00082
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00077	-0.00078	-0.00078
	(A1 * A2 * !B2 * !C1 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00077	-0.00078	-0.00078
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00087	0.00086	0.00086
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00108	-0.00110	-0.00109
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00080	0.00080	0.00081
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00113	-0.00113	-0.00113
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00033	0.00033	0.00032
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00131	-0.00132	-0.00133
	(A1 * !A2 * !B2 * !C1 * Y)	0.00033	0.00033	0.00032
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00131	-0.00132	-0.00133
	(!A1 * B2 * C1 * C2 * !Y)	0.00087	0.00086	0.00086
	(!A1 * B2 * C1 * C2 * !Y)	-0.00108	-0.00110	-0.00109
	(!A1 * !B2 * C1 * C2 * !Y)	0.00081	0.00081	0.00081
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00113	-0.00113	-0.00113
	(!A1 * !B2 * C1 * !C2 * Y)	0.00033	0.00033	0.00032
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00131	-0.00132	-0.00133
	(!A1 * !B2 * !C1 * Y)	0.00033	0.00033	0.00032
	(!A1 * !B2 * !C1 * Y)	-0.00131	-0.00132	-0.00133

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00180	0.00181	0.00180
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00174	-0.00172	-0.00172
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00179	0.00179	0.00179
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00161	-0.00161	-0.00161
	(A1 * A2 * B2 * !C1 * !Y)	0.00179	0.00179	0.00179
	(A1 * A2 * B2 * !C1 * !Y)	-0.00161	-0.00161	-0.00161
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00171	0.00174	0.00171
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00166	-0.00167	-0.00166
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00170	0.00170	0.00170
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00160	-0.00160	-0.00160
	(A1 * A2 * !B2 * !C1 * !Y)	0.00170	0.00173	0.00171
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00160	-0.00161	-0.00160
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00181	0.00180	0.00179
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00223	-0.00227	-0.00225
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00169	0.00169	0.00169
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00233	-0.00234	-0.00234
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00068	0.00067	0.00065
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00279	-0.00279	-0.00282
	(A1 * !A2 * !B2 * !C1 * Y)	0.00068	0.00067	0.00065
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00279	-0.00279	-0.00282
	(!A1 * B2 * C1 * C2 * !Y)	0.00181	0.00180	0.00179
	(!A1 * B2 * C1 * C2 * !Y)	-0.00223	-0.00227	-0.00225
	(!A1 * !B2 * C1 * C2 * !Y)	0.00168	0.00170	0.00169
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00233	-0.00235	-0.00234
	(!A1 * !B2 * C1 * !C2 * Y)	0.00068	0.00067	0.00065
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00279	-0.00279	-0.00282
	(!A1 * !B2 * !C1 * Y)	0.00068	0.00067	0.00065
	(!A1 * !B2 * !C1 * Y)	-0.00279	-0.00279	-0.00282

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)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00085	0.00084	0.00084
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * B2 * !C1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * B2 * !C1 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00080	-0.00082	-0.00082
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00079	-0.00081	-0.00081
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00077	0.00078	0.00078
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00079	-0.00081	-0.00081
	(A1 * A2 * !B2 * !C1 * !Y)	0.00077	0.00078	0.00078
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00079	-0.00080	-0.00081
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00113	0.00115	0.00113
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00032	-0.00031	-0.00031
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00134	0.00133	0.00133
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00032	-0.00031	-0.00031
	(A1 * !A2 * !B2 * !C1 * Y)	0.00134	0.00133	0.00133
	(!A1 * B2 * C1 * C2 * !Y)	-0.00086	-0.00086	-0.00086
	(!A1 * B2 * C1 * C2 * !Y)	0.00110	0.00110	0.00109
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00079	-0.00081	-0.00081
	(!A1 * !B2 * C1 * C2 * !Y)	0.00113	0.00114	0.00113
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00032	-0.00031	-0.00031
	(!A1 * !B2 * C1 * !C2 * Y)	0.00134	0.00133	0.00133
	(!A1 * !B2 * !C1 * Y)	-0.00032	-0.00031	-0.00031
	(!A1 * !B2 * !C1 * Y)	0.00134	0.00133	0.00133

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00180	-0.00180	-0.00180
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00174	0.00172	0.00172
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00178	-0.00178	-0.00177
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00165	0.00165	0.00165
	(A1 * A2 * B2 * !C1 * !Y)	-0.00177	-0.00178	-0.00177
	(A1 * A2 * B2 * !C1 * !Y)	0.00163	0.00165	0.00165
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00167	-0.00172	-0.00171
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00166	0.00167	0.00166
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00166	-0.00170	-0.00170
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00160	0.00161	0.00160
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00166	-0.00173	-0.00171
	(A1 * A2 * !B2 * !C1 * !Y)	0.00160	0.00161	0.00160
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00179	-0.00180	-0.00179
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00224	0.00227	0.00225
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00164	-0.00169	-0.00169
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00233	0.00236	0.00234
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00281	0.00281	0.00282
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * !B2 * !C1 * Y)	0.00281	0.00281	0.00282
	(!A1 * B2 * C1 * C2 * !Y)	-0.00179	-0.00180	-0.00179
	(!A1 * B2 * C1 * C2 * !Y)	0.00225	0.00227	0.00225
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00164	-0.00170	-0.00169
	(!A1 * !B2 * C1 * C2 * !Y)	0.00233	0.00236	0.00234
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00063	-0.00063	-0.00063
	(!A1 * !B2 * C1 * !C2 * Y)	0.00281	0.00281	0.00282
	(!A1 * !B2 * !C1 * Y)	-0.00063	-0.00063	-0.00063
	(!A1 * !B2 * !C1 * Y)	0.00281	0.00281	0.00282

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)	0.00095	0.00095	0.00095
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00096	0.00095	0.00095
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00079	-0.00078	-0.00078
	(A1 * A2 * B1 * !C1 * !Y)	0.00096	0.00095	0.00095
	(A1 * A2 * B1 * !C1 * !Y)	-0.00079	-0.00078	-0.00078
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00090	0.00090	0.00090
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00089	0.00091	0.00090
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * !B1 * !C1 * !Y)	0.00090	0.00091	0.00090
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00096	0.00095	0.00094
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00108	-0.00110	-0.00109
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00089	0.00089	0.00089
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00078	0.00079	0.00078
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * !B1 * !C1 * Y)	0.00078	0.00079	0.00078
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00125	-0.00125	-0.00125
	(!A1 * B1 * C1 * C2 * !Y)	0.00096	0.00095	0.00094
	(!A1 * B1 * C1 * C2 * !Y)	-0.00108	-0.00110	-0.00109
	(!A1 * !B1 * C1 * !C2 * Y)	0.00078	0.00079	0.00078
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00125	-0.00125	-0.00125
	(!A1 * !B1 * !C1 * Y)	0.00078	0.00079	0.00078
	(!A1 * !B1 * !C1 * Y)	-0.00125	-0.00125	-0.00125

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00177	0.00176	0.00176
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00160	-0.00159	-0.00159
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00174	0.00175	0.00175
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00147	-0.00147	-0.00147
	(A1 * A2 * B1 * !C1 * !Y)	0.00174	0.00175	0.00175
	(A1 * A2 * B1 * !C1 * !Y)	-0.00147	-0.00147	-0.00147
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00166	0.00167	0.00166
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00154	-0.00154	-0.00153
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00166	0.00167	0.00166
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00147	-0.00147	-0.00147
	(A1 * A2 * !B1 * !C1 * !Y)	0.00166	0.00167	0.00166
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00147	-0.00147	-0.00147
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00175	0.00176	0.00174
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00204	-0.00210	-0.00208
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00165	0.00165	0.00164
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00217	-0.00217	-0.00217
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00155	0.00157	0.00156
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00225	-0.00227	-0.00226
	(A1 * !A2 * !B1 * !C1 * Y)	0.00155	0.00157	0.00156
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00225	-0.00227	-0.00226
	(!A1 * B1 * C1 * C2 * !Y)	0.00175	0.00176	0.00174
	(!A1 * B1 * C1 * C2 * !Y)	-0.00204	-0.00210	-0.00208
	(!A1 * !B1 * C1 * !C2 * Y)	0.00155	0.00157	0.00156
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00225	-0.00227	-0.00226
	(!A1 * !B1 * !C1 * Y)	0.00155	0.00157	0.00156
	(!A1 * !B1 * !C1 * Y)	-0.00225	-0.00227	-0.00226

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)	-0.00095	-0.00095	-0.00095
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00084	0.00084	0.00084
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00092	-0.00092	-0.00092
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * B1 * !C1 * !Y)	-0.00092	-0.00092	-0.00092
	(A1 * A2 * B1 * !C1 * !Y)	0.00081	0.00081	0.00081
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00088	-0.00090	-0.00090
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00081	0.00082	0.00081
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00088	-0.00090	-0.00090
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00078	0.00078	0.00078
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00088	-0.00090	-0.00090
	(A1 * A2 * !B1 * !C1 * !Y)	0.00078	0.00078	0.00078
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00094	-0.00095	-0.00094
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00110	0.00110	0.00109
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00087	-0.00089	-0.00089
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00114	0.00114	0.00114
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00076	-0.00079	-0.00078
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00125	0.00125	0.00125
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00076	-0.00079	-0.00078
	(A1 * !A2 * !B1 * !C1 * Y)	0.00125	0.00125	0.00125
	(!A1 * B1 * C1 * C2 * !Y)	-0.00094	-0.00095	-0.00094
	(!A1 * B1 * C1 * C2 * !Y)	0.00110	0.00110	0.00109
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00076	-0.00079	-0.00078
	(!A1 * !B1 * C1 * !C2 * Y)	0.00125	0.00125	0.00125
	(!A1 * !B1 * !C1 * Y)	-0.00076	-0.00079	-0.00078
	(!A1 * !B1 * !C1 * Y)	0.00125	0.00125	0.00125

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00176	-0.00175	-0.00175
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00160	0.00159	0.00159
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00171	-0.00171	-0.00170
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00152	0.00152	0.00152
	(A1 * A2 * B1 * !C1 * !Y)	-0.00170	-0.00171	-0.00170
	(A1 * A2 * B1 * !C1 * !Y)	0.00151	0.00152	0.00152
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00162	-0.00167	-0.00166
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00154	0.00154	0.00153
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00162	-0.00166	-0.00166
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00147	0.00147	0.00147
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00162	-0.00166	-0.00166
	(A1 * A2 * !B1 * !C1 * !Y)	0.00147	0.00147	0.00147
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00174	-0.00175	-0.00174
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00207	0.00210	0.00208
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00161	-0.00165	-0.00164
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00217	0.00218	0.00217
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00152	-0.00157	-0.00156
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00227	0.00227	0.00226
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00152	-0.00157	-0.00156
	(A1 * !A2 * !B1 * !C1 * Y)	0.00227	0.00227	0.00226
	(!A1 * B1 * C1 * C2 * !Y)	-0.00174	-0.00175	-0.00174
	(!A1 * B1 * C1 * C2 * !Y)	0.00207	0.00210	0.00208
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00152	-0.00157	-0.00156
	(!A1 * !B1 * C1 * !C2 * Y)	0.00227	0.00227	0.00226
	(!A1 * !B1 * !C1 * Y)	-0.00152	-0.00157	-0.00156
	(!A1 * !B1 * !C1 * Y)	0.00227	0.00227	0.00226

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)	0.00105	0.00105	0.00105
	(A1 * B1 * B2 * C2 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * B1 * B2 * !C2 * !Y)	0.00100	0.00100	0.00100
	(A1 * B1 * B2 * !C2 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00105	0.00105	0.00105
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00100	0.00102	0.00100
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00068	-0.00069	-0.00069
	(A1 * A2 * !B1 * C2 * !Y)	0.00105	0.00105	0.00105
	(A1 * A2 * !B1 * C2 * !Y)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !B1 * !C2 * !Y)	0.00100	0.00102	0.00100
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00068	-0.00069	-0.00069
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00037	0.00037	0.00036
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00135	-0.00135	-0.00136
	(A1 * !A2 * !B1 * !C2 * Y)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00135	-0.00135	-0.00136
	(!A1 * B1 * B2 * C2 * !Y)	0.00105	0.00105	0.00105
	(!A1 * B1 * B2 * C2 * !Y)	-0.00069	-0.00069	-0.00069
	(!A1 * B1 * B2 * !C2 * !Y)	0.00100	0.00102	0.00100
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00068	-0.00069	-0.00069
	(!A1 * B1 * !B2 * !C2 * Y)	0.00037	0.00037	0.00036
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00135	-0.00135	-0.00136
	(!A1 * !B1 * !C2 * Y)	0.00037	0.00037	0.00036
	(!A1 * !B1 * !C2 * Y)	-0.00135	-0.00135	-0.00136

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00184	0.00184	0.00184
	(A1 * B1 * B2 * C2 * !Y)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * B2 * !C2 * !Y)	0.00174	0.00177	0.00175
	(A1 * B1 * B2 * !C2 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00184	0.00184	0.00184
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00135	-0.00134	-0.00134
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00174	0.00175	0.00174
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * A2 * !B1 * C2 * !Y)	0.00185	0.00184	0.00184
	(A1 * A2 * !B1 * C2 * !Y)	-0.00136	-0.00134	-0.00134
	(A1 * A2 * !B1 * !C2 * !Y)	0.00173	0.00175	0.00174
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00133	-0.00135	-0.00134
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00065	0.00066	0.00063
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00249	-0.00251	-0.00253
	(A1 * !A2 * !B1 * !C2 * Y)	0.00065	0.00066	0.00063
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00249	-0.00251	-0.00253
	(!A1 * B1 * B2 * C2 * !Y)	0.00184	0.00184	0.00184
	(!A1 * B1 * B2 * C2 * !Y)	-0.00135	-0.00135	-0.00135
	(!A1 * B1 * B2 * !C2 * !Y)	0.00174	0.00175	0.00174
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00134	-0.00135	-0.00134
	(!A1 * B1 * !B2 * !C2 * Y)	0.00065	0.00066	0.00063
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00249	-0.00251	-0.00253
	(!A1 * !B1 * !C2 * Y)	0.00065	0.00066	0.00063
	(!A1 * !B1 * !C2 * Y)	-0.00249	-0.00251	-0.00253

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)**	-0.00097	-0.00097	-0.00105
	(A1 * B1 * B2 * C2 * !Y)	0.00076	0.00076	0.00070
	(A1 * B1 * B2 * !C2 * !Y)	-0.00098	-0.00100	-0.00100
	(A1 * B1 * B2 * !C2 * !Y)	0.00069	0.00069	0.00069
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00084	-0.00084	-0.00101
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00086	0.00085	0.00073
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00098	-0.00101	-0.00100
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00068	0.00069	0.00069
	(A1 * A2 * !B1 * C2 * !Y)	-0.00083	-0.00084	-0.00101
	(A1 * A2 * !B1 * C2 * !Y)	0.00085	0.00085	0.00073
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00098	-0.00101	-0.00100
	(A1 * A2 * !B1 * !C2 * !Y)	0.00068	0.00069	0.00069
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00136	0.00136	0.00136
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * !B1 * !C2 * Y)	0.00136	0.00136	0.00136
	(!A1 * B1 * B2 * C2 * !Y)	-0.00096	-0.00097	-0.00105
	(!A1 * B1 * B2 * C2 * !Y)	0.00076	0.00076	0.00070
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00098	-0.00101	-0.00100
	(!A1 * B1 * B2 * !C2 * !Y)	0.00068	0.00069	0.00069
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * B1 * !B2 * !C2 * Y)	0.00136	0.00136	0.00136
	(!A1 * !B1 * !C2 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !B1 * !C2 * Y)	0.00136	0.00136	0.00136

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00168	-0.00170	-0.00183
	(A1 * B1 * B2 * C2 * !Y)	0.00148	0.00148	0.00138
	(A1 * B1 * B2 * !C2 * !Y)	-0.00170	-0.00177	-0.00175
	(A1 * B1 * B2 * !C2 * !Y)	0.00134	0.00135	0.00134
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00145	-0.00147	-0.00178
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00164	0.00164	0.00141
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00169	-0.00175	-0.00174
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00134	0.00135	0.00134
	(A1 * A2 * !B1 * C2 * !Y)	-0.00145	-0.00147	-0.00178
	(A1 * A2 * !B1 * C2 * !Y)	0.00164	0.00164	0.00141
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00169	-0.00175	-0.00174
	(A1 * A2 * !B1 * !C2 * !Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00253	0.00253	0.00253
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00062	-0.00062	-0.00062
	(A1 * !A2 * !B1 * !C2 * Y)	0.00253	0.00253	0.00253
	(!A1 * B1 * B2 * C2 * !Y)	-0.00168	-0.00169	-0.00183
	(!A1 * B1 * B2 * C2 * !Y)	0.00149	0.00149	0.00138
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00169	-0.00175	-0.00174
	(!A1 * B1 * B2 * !C2 * !Y)	0.00134	0.00135	0.00134
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00062	-0.00062	-0.00062
	(!A1 * B1 * !B2 * !C2 * Y)	0.00253	0.00253	0.00253
	(!A1 * !B1 * !C2 * Y)	-0.00062	-0.00062	-0.00062
	(!A1 * !B1 * !C2 * Y)	0.00253	0.00253	0.00253

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)**	0.00109	0.00110	0.00110
	(A1 * B1 * B2 * C1 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * B1 * B2 * !C1 * !Y)	0.00104	0.00106	0.00105
	(A1 * B1 * B2 * !C1 * !Y)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00111	0.00110	0.00110
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00071	-0.00070	-0.00070
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00104	0.00106	0.00105
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * !B1 * C1 * !Y)	0.00111	0.00110	0.00110
	(A1 * A2 * !B1 * C1 * !Y)	-0.00071	-0.00070	-0.00070
	(A1 * A2 * !B1 * !C1 * !Y)	0.00105	0.00106	0.00105
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00080	0.00080	0.00080
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !B1 * !C1 * Y)	0.00080	0.00080	0.00080
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * B1 * B2 * C1 * !Y)	0.00111	0.00110	0.00110
	(!A1 * B1 * B2 * C1 * !Y)	-0.00071	-0.00070	-0.00070
	(!A1 * B1 * B2 * !C1 * !Y)	0.00105	0.00106	0.00105
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00070	-0.00070	-0.00070
	(!A1 * B1 * !B2 * !C1 * Y)	0.00080	0.00080	0.00080
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * Y)	0.00080	0.00080	0.00080
	(!A1 * !B1 * !C1 * Y)	-0.00127	-0.00128	-0.00127

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00221	0.00219	0.00219
	(A1 * B1 * B2 * C1 * !Y)	-0.00141	-0.00139	-0.00139
	(A1 * B1 * B2 * !C1 * !Y)	0.00211	0.00214	0.00210
	(A1 * B1 * B2 * !C1 * !Y)	-0.00138	-0.00139	-0.00139
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00219	0.00220	0.00219
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00139	-0.00139	-0.00139
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00210	0.00214	0.00210
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00138	-0.00139	-0.00139
	(A1 * A2 * !B1 * C1 * !Y)	0.00219	0.00220	0.00219
	(A1 * A2 * !B1 * C1 * !Y)	-0.00139	-0.00140	-0.00139
	(A1 * A2 * !B1 * !C1 * !Y)	0.00211	0.00214	0.00210
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00138	-0.00139	-0.00139
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00159	0.00160	0.00159
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00255	-0.00256	-0.00255
	(A1 * !A2 * !B1 * !C1 * Y)	0.00159	0.00160	0.00159
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00255	-0.00256	-0.00255
	(!A1 * B1 * B2 * C1 * !Y)	0.00219	0.00220	0.00219
	(!A1 * B1 * B2 * C1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A1 * B1 * B2 * !C1 * !Y)	0.00211	0.00213	0.00210
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00139	-0.00139	-0.00139
	(!A1 * B1 * !B2 * !C1 * Y)	0.00159	0.00160	0.00159
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00255	-0.00256	-0.00255
	(!A1 * !B1 * !C1 * Y)	0.00159	0.00160	0.00159
	(!A1 * !B1 * !C1 * Y)	-0.00255	-0.00256	-0.00255

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)**	-0.00101	-0.00102	-0.00109
	(A1 * B1 * B2 * C1 * !Y)	0.00077	0.00077	0.00071
	(A1 * B1 * B2 * !C1 * !Y)	-0.00103	-0.00106	-0.00105
	(A1 * B1 * B2 * !C1 * !Y)	0.00070	0.00070	0.00070
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00088	-0.00089	-0.00106
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00087	0.00086	0.00074
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00103	-0.00105	-0.00105
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00070	0.00070	0.00070
	(A1 * A2 * !B1 * C1 * !Y)	-0.00088	-0.00089	-0.00106
	(A1 * A2 * !B1 * C1 * !Y)	0.00087	0.00086	0.00074
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00103	-0.00105	-0.00105
	(A1 * A2 * !B1 * !C1 * !Y)	0.00070	0.00070	0.00070
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00078	-0.00080	-0.00080
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00127	0.00128	0.00128
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00078	-0.00080	-0.00080
	(A1 * !A2 * !B1 * !C1 * Y)	0.00127	0.00128	0.00128
	(!A1 * B1 * B2 * C1 * !Y)	-0.00101	-0.00102	-0.00109
	(!A1 * B1 * B2 * C1 * !Y)	0.00078	0.00077	0.00072
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00103	-0.00105	-0.00105
	(!A1 * B1 * B2 * !C1 * !Y)	0.00070	0.00070	0.00070
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00078	-0.00080	-0.00080
	(!A1 * B1 * !B2 * !C1 * Y)	0.00127	0.00128	0.00128
	(!A1 * !B1 * !C1 * Y)	-0.00078	-0.00080	-0.00080
	(!A1 * !B1 * !C1 * Y)	0.00127	0.00128	0.00128

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00203	-0.00205	-0.00219
	(A1 * B1 * B2 * C1 * !Y)	0.00152	0.00152	0.00142
	(A1 * B1 * B2 * !C1 * !Y)	-0.00207	-0.00212	-0.00210
	(A1 * B1 * B2 * !C1 * !Y)	0.00138	0.00139	0.00139
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00181	-0.00182	-0.00213
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00169	0.00168	0.00146
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00207	-0.00212	-0.00210
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00138	0.00139	0.00139
	(A1 * A2 * !B1 * C1 * !Y)	-0.00180	-0.00182	-0.00213
	(A1 * A2 * !B1 * C1 * !Y)	0.00168	0.00168	0.00146
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00207	-0.00212	-0.00210
	(A1 * A2 * !B1 * !C1 * !Y)	0.00138	0.00139	0.00139
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00156	-0.00160	-0.00159
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00255	0.00256	0.00255
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00156	-0.00160	-0.00159
	(A1 * !A2 * !B1 * !C1 * Y)	0.00255	0.00256	0.00255
	(!A1 * B1 * B2 * C1 * !Y)	-0.00203	-0.00204	-0.00218
	(!A1 * B1 * B2 * C1 * !Y)	0.00153	0.00153	0.00142
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00207	-0.00212	-0.00210
	(!A1 * B1 * B2 * !C1 * !Y)	0.00139	0.00139	0.00139
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00156	-0.00160	-0.00159
	(!A1 * B1 * !B2 * !C1 * Y)	0.00255	0.00256	0.00255
	(!A1 * !B1 * !C1 * Y)	-0.00156	-0.00160	-0.00159
	(!A1 * !B1 * !C1 * Y)	0.00255	0.00256	0.00255

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222o_1	15.98400
sky130_fd_sc_hs__a222o_2	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	X
sky130_fd_sc_hs__a222o_1	0.00236	0.00240	0.00246	0.00234	0.00246	0.00250	0.36036
sky130_fd_sc_hs__a222o_2	0.00240	0.00223	0.00239	0.00232	0.00244	0.00255	0.67194

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.00024	0.00031
sky130_fd_sc_hs__a222o_2	0.00000	0.00031	0.00040

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)	0.21167	1.28138	9.00877
	A2->X (RR)	0.21772	1.27594	9.12488
	B1->X (RR)	0.20314	1.26092	8.92555
	B2->X (RR)	0.20795	1.25560	9.03757
	C1->X (RR)	0.19274	1.23245	8.82116
	C2->X (RR)	0.19774	1.23135	8.92421
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.23641	1.20759	9.27793
	A2->X (RR)	0.24419	1.18794	9.35358
	B1->X (RR)	0.22034	1.17390	9.19252
	B2->X (RR)	0.22559	1.16319	9.27680
	C1->X (RR)	0.20885	1.15017	9.11545
	C2->X (RR)	0.21508	1.14177	9.19225

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	1.10518	1.99054	7.91006
	A2->X (FF)	1.19501	2.08879	8.03748
	B1->X (FF)	1.05079	1.91646	7.95928
	B2->X (FF)	1.12052	2.00017	8.09687
	C1->X (FF)	0.85259	1.64905	7.22236
	C2->X (FF)	0.92915	1.73700	7.35883
sky130_fd_sc_hs__a222o_2	A1->X (FF)	1.32842	2.22356	8.22793
	A2->X (FF)	1.39597	2.30643	8.35081
	B1->X (FF)	1.28330	2.16017	8.34538
	B2->X (FF)	1.33003	2.21640	8.42071
	C1->X (FF)	1.08881	1.89419	7.68671
	C2->X (FF)	1.18795	1.99980	7.83279

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00933	0.00923	0.00902
	A1	0.00456	0.00446	0.00429
	A2	0.00989	0.00978	0.00959
	A2	0.00458	0.00448	0.00432
	B1	0.00812	0.00812	0.00798
	B1	0.00360	0.00359	0.00347
	B2	0.00857	0.00861	0.00849
	B2	0.00366	0.00370	0.00360
	C1	0.00653	0.00646	0.00636
	C1	0.00229	0.00222	0.00212
	C2	0.00700	0.00700	0.00691
	C2	0.00233	0.00234	0.00225
sky130_fd_sc_hs__a222o_2	A1	0.01122	0.01136	0.01132
	A1	0.00661	0.00674	0.00677
	A2	0.01173	0.01193	0.01195
	A2	0.00657	0.00676	0.00685
	B1	0.00992	0.01009	0.01003
	B1	0.00553	0.00570	0.00571
	B2	0.01039	0.01060	0.01058
	B2	0.00552	0.00574	0.00578
	C1	0.00861	0.00866	0.00857
	C1	0.00448	0.00454	0.00447
	C2	0.00915	0.00922	0.00914
	C2	0.00446	0.00455	0.00450

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00371	0.00372	0.00410
	A1	0.00888	0.00889	0.00888
	A2	0.00390	0.00391	0.00386
	A2	0.00958	0.00958	0.00950
	B1	0.00340	0.00340	0.00413
	B1	0.00838	0.00834	0.00831
	B2	0.00334	0.00342	0.00412
	B2	0.00895	0.00899	0.00894
	C1	0.00364	0.00359	0.00413
	C1	0.00779	0.00775	0.00770
	C2	0.00359	0.00362	0.00415
	C2	0.00844	0.00845	0.00838
sky130_fd_sc_hs__a222o_2	A1	0.00475	0.00487	0.00564
	A1	0.01006	0.01016	0.01014
	A2	0.00547	0.00577	0.00589
	A2	0.01098	0.01126	0.01136
	B1	0.00446	0.00468	0.00706
	B1	0.00982	0.01003	0.01011
	B2	0.00492	0.00520	0.00625
	B2	0.01047	0.01076	0.01082
	C1	0.00497	0.00516	0.00702
	C1	0.00927	0.00945	0.00948
	C2	0.00466	0.00484	0.00633
	C2	0.01002	0.01023	0.01025

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)**	0.00087	0.00087	0.00087
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00108	-0.00110	-0.00110
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00087	0.00087	0.00087
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00108	-0.00110	-0.00110
	(A2 * B1 * B2 * !C1 * X)	0.00087	0.00087	0.00087
	(A2 * B1 * B2 * !C1 * X)	-0.00108	-0.00110	-0.00110
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00088	0.00088	0.00087
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00105	-0.00106	-0.00106
	(A2 * !B1 * C1 * C2 * X)	0.00088	0.00088	0.00087
	(A2 * !B1 * C1 * C2 * X)	-0.00105	-0.00106	-0.00106
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00114	-0.00115	-0.00114
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00082	0.00082	0.00082
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00114	-0.00114	-0.00114
	(!A2 * B1 * B2 * !C1 * X)	0.00082	0.00082	0.00082
	(!A2 * B1 * B2 * !C1 * X)	-0.00114	-0.00114	-0.00114
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00082	0.00083	0.00082
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00114	-0.00114	-0.00114
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00034	0.00034	0.00033
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00131	-0.00133	-0.00134
	(!A2 * B1 * !B2 * !C1 * !X)	0.00034	0.00034	0.00033
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00133	-0.00133	-0.00134
	(!A2 * !B1 * C1 * C2 * X)	0.00082	0.00083	0.00082
	(!A2 * !B1 * C1 * C2 * X)	-0.00114	-0.00115	-0.00114
	(!A2 * !B1 * C1 * !C2 * !X)	0.00034	0.00034	0.00033
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00133	-0.00133	-0.00134
	(!A2 * !B1 * !C1 * !X)	0.00034	0.00034	0.00033
	(!A2 * !B1 * !C1 * !X)	-0.00133	-0.00133	-0.00134

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00094	0.00094	0.00094
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00108	-0.00110	-0.00109
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00094	0.00094	0.00094
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00108	-0.00110	-0.00109
	(A2 * B1 * B2 * !C1 * X)	0.00094	0.00094	0.00094
	(A2 * B1 * B2 * !C1 * X)	-0.00108	-0.00110	-0.00109
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00095	0.00095	0.00094
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00104	-0.00105	-0.00105
	(A2 * !B1 * C1 * C2 * X)	0.00095	0.00095	0.00094
	(A2 * !B1 * C1 * C2 * X)	-0.00104	-0.00105	-0.00105
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00090	0.00090	0.00090
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00112	-0.00113	-0.00112
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00090	0.00090	0.00090
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00112	-0.00112	-0.00112
	(!A2 * B1 * B2 * !C1 * X)	0.00090	0.00090	0.00090
	(!A2 * B1 * B2 * !C1 * X)	-0.00112	-0.00112	-0.00112
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00089	0.00090	0.00090
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00113	-0.00113	-0.00113
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00039	0.00039	0.00037
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00134	-0.00136	-0.00139
	(!A2 * B1 * !B2 * !C1 * !X)	0.00039	0.00039	0.00037
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00134	-0.00136	-0.00139
	(!A2 * !B1 * C1 * C2 * X)	0.00090	0.00090	0.00090
	(!A2 * !B1 * C1 * C2 * X)	-0.00113	-0.00113	-0.00113
	(!A2 * !B1 * C1 * !C2 * !X)	0.00039	0.00039	0.00037
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00134	-0.00136	-0.00139
	(!A2 * !B1 * !C1 * !X)	0.00039	0.00039	0.00037
	(!A2 * !B1 * !C1 * !X)	-0.00134	-0.00136	-0.00139

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)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * C1 * C2 * X)	0.00111	0.00110	0.00110
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00111	0.00110	0.00110
	(A2 * B1 * B2 * !C1 * X)	-0.00087	-0.00087	-0.00087
	(A2 * B1 * B2 * !C1 * X)	0.00111	0.00110	0.00110
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00088	-0.00087	-0.00087
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00107	0.00106	0.00106
	(A2 * !B1 * C1 * C2 * X)	-0.00088	-0.00087	-0.00087
	(A2 * !B1 * C1 * C2 * X)	0.00107	0.00106	0.00106
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00114	0.00116	0.00114
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00080	-0.00082	-0.00082
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00114	0.00114	0.00114
	(!A2 * B1 * B2 * !C1 * X)	-0.00080	-0.00082	-0.00082
	(!A2 * B1 * B2 * !C1 * X)	0.00114	0.00114	0.00114
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00080	-0.00083	-0.00082
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00114	0.00114	0.00114
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00134	0.00134	0.00134
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * B1 * !B2 * !C1 * !X)	0.00134	0.00134	0.00134
	(!A2 * !B1 * C1 * C2 * X)	-0.00080	-0.00083	-0.00082
	(!A2 * !B1 * C1 * C2 * X)	0.00114	0.00115	0.00114
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * C1 * !C2 * !X)	0.00134	0.00134	0.00134
	(!A2 * !B1 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * !C1 * !X)	0.00134	0.00134	0.00134

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00094	-0.00094	-0.00094
	(A2 * B1 * B2 * C1 * C2 * X)	0.00110	0.00110	0.00109
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00094	-0.00094	-0.00094
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00110	0.00110	0.00109
	(A2 * B1 * B2 * !C1 * X)	-0.00094	-0.00094	-0.00094
	(A2 * B1 * B2 * !C1 * X)	0.00110	0.00110	0.00109
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00095	-0.00094	-0.00094
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00106	0.00105	0.00105
	(A2 * !B1 * C1 * C2 * X)	-0.00095	-0.00094	-0.00094
	(A2 * !B1 * C1 * C2 * X)	0.00106	0.00105	0.00105
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00088	-0.00090	-0.00090
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00113	0.00113	0.00112
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00088	-0.00090	-0.00090
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00113	0.00113	0.00112
	(!A2 * B1 * B2 * !C1 * X)	-0.00088	-0.00090	-0.00090
	(!A2 * B1 * B2 * !C1 * X)	0.00113	0.00113	0.00112
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00088	-0.00090	-0.00090
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00113	0.00114	0.00113
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00035	-0.00036	-0.00036
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00139	0.00139	0.00139
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00035	-0.00036	-0.00036
	(!A2 * B1 * !B2 * !C1 * !X)	0.00139	0.00139	0.00139
	(!A2 * !B1 * C1 * C2 * X)	-0.00087	-0.00090	-0.00090
	(!A2 * !B1 * C1 * C2 * X)	0.00113	0.00114	0.00113
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00035	-0.00036	-0.00036
	(!A2 * !B1 * C1 * !C2 * !X)	0.00138	0.00139	0.00139
	(!A2 * !B1 * !C1 * !X)	-0.00035	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00138	0.00139	0.00139

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)	0.00099	0.00098	0.00098
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00104	-0.00107	-0.00106
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00099	0.00098	0.00098
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00104	-0.00107	-0.00106
	(A1 * B1 * B2 * !C1 * X)	0.00099	0.00098	0.00098
	(A1 * B1 * B2 * !C1 * X)	-0.00104	-0.00107	-0.00106
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00098	0.00099	0.00098
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00100	-0.00103	-0.00103
	(A1 * !B1 * C1 * C2 * X)	0.00098	0.00099	0.00098
	(A1 * !B1 * C1 * C2 * X)	-0.00100	-0.00103	-0.00103
	(!A1 * B1 * B2 * X)	0.00093	0.00094	0.00093
	(!A1 * B1 * B2 * X)	-0.00109	-0.00110	-0.00110
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00093	0.00094	0.00093
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00109	-0.00111	-0.00110
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00078	0.00079	0.00078
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00124	-0.00126	-0.00125
	(!A1 * B1 * !B2 * !C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00126	-0.00125
	(!A1 * !B1 * C1 * !C2 * !X)	0.00078	0.00079	0.00078
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00124	-0.00126	-0.00125
	(!A1 * !B1 * !C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !B1 * !C1 * !X)	-0.00124	-0.00126	-0.00125

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00092	0.00093	0.00092
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00108	-0.00110	-0.00110
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00092	0.00093	0.00092
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00108	-0.00110	-0.00110
	(A1 * B1 * B2 * !C1 * X)	0.00092	0.00093	0.00092
	(A1 * B1 * B2 * !C1 * X)	-0.00108	-0.00110	-0.00110
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00093	0.00093	0.00092
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00104	-0.00105	-0.00105
	(A1 * !B1 * C1 * C2 * X)	0.00092	0.00093	0.00092
	(A1 * !B1 * C1 * C2 * X)	-0.00103	-0.00105	-0.00106
	(!A1 * B1 * B2 * X)	0.00086	0.00087	0.00087
	(!A1 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00087	0.00088	0.00087
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00086	0.00087	0.00086
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * B1 * !B2 * !C1 * !X)	0.00086	0.00087	0.00086
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * C1 * !C2 * !X)	0.00086	0.00087	0.00086
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !C1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !B1 * !C1 * !X)	-0.00113	-0.00114	-0.00113

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)**	-0.00098	-0.00098	-0.00098
	(A1 * B1 * B2 * C1 * C2 * X)	0.00106	0.00107	0.00106
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00098	-0.00098	-0.00098
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00106	0.00107	0.00106
	(A1 * B1 * B2 * !C1 * X)	-0.00098	-0.00098	-0.00098
	(A1 * B1 * B2 * !C1 * X)	0.00106	0.00107	0.00106
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00098	-0.00098	-0.00098
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00103	0.00103	0.00103
	(A1 * !B1 * C1 * C2 * X)	-0.00098	-0.00098	-0.00098
	(A1 * !B1 * C1 * C2 * X)	0.00103	0.00103	0.00103
	(!A1 * B1 * B2 * X)	-0.00091	-0.00094	-0.00093
	(!A1 * B1 * B2 * X)	0.00110	0.00111	0.00110
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00091	-0.00094	-0.00093
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00110	0.00111	0.00110
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00076	-0.00079	-0.00078
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00125	0.00126	0.00125
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00076	-0.00079	-0.00078
	(!A1 * B1 * !B2 * !C1 * !X)	0.00125	0.00126	0.00125
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00076	-0.00079	-0.00078
	(!A1 * !B1 * C1 * !C2 * !X)	0.00125	0.00126	0.00125
	(!A1 * !B1 * !C1 * !X)	-0.00076	-0.00079	-0.00078
	(!A1 * !B1 * !C1 * !X)	0.00125	0.00126	0.00125

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00092	-0.00092	-0.00091
	(A1 * B1 * B2 * C1 * C2 * X)	0.00110	0.00110	0.00110
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00092	-0.00092	-0.00091
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00111	0.00110	0.00110
	(A1 * B1 * B2 * !C1 * X)	-0.00092	-0.00092	-0.00091
	(A1 * B1 * B2 * !C1 * X)	0.00111	0.00110	0.00110
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00092	-0.00092	-0.00092
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00106	0.00105	0.00105
	(A1 * !B1 * C1 * C2 * X)	-0.00092	-0.00092	-0.00092
	(A1 * !B1 * C1 * C2 * X)	0.00106	0.00105	0.00106
	(!A1 * B1 * B2 * X)	-0.00085	-0.00087	-0.00087
	(!A1 * B1 * B2 * X)	0.00113	0.00113	0.00113
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00085	-0.00088	-0.00087
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00112	0.00113	0.00113
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00083	-0.00087	-0.00086
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00113	0.00114	0.00113
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00083	-0.00087	-0.00086
	(!A1 * B1 * !B2 * !C1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00084	-0.00087	-0.00086
	(!A1 * !B1 * C1 * !C2 * !X)	0.00114	0.00114	0.00113
	(!A1 * !B1 * !C1 * !X)	-0.00084	-0.00087	-0.00086
	(!A1 * !B1 * !C1 * !X)	0.00114	0.00114	0.00113

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)**	0.00091	0.00092	0.00091
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00088	-0.00087	-0.00087
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00092	0.00091	0.00091
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00083	-0.00082	-0.00082
	(A1 * A2 * B2 * !C1 * X)	0.00092	0.00091	0.00091
	(A1 * A2 * B2 * !C1 * X)	-0.00083	-0.00082	-0.00082
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00086	0.00086	0.00086
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00084	-0.00085	-0.00085
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00086	0.00087	0.00086
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * !B2 * !C1 * X)	0.00086	0.00087	0.00086
	(A1 * A2 * !B2 * !C1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00092	0.00091	0.00091
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00113	-0.00114	-0.00113
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00085	0.00086	0.00085
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00117	-0.00118	-0.00118
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00036	0.00036	0.00035
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00139	-0.00139	-0.00140
	(A1 * !A2 * !B2 * !C1 * !X)	0.00036	0.00036	0.00035
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00139	-0.00139	-0.00140
	(!A1 * B2 * C1 * C2 * X)	0.00092	0.00091	0.00091
	(!A1 * B2 * C1 * C2 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B2 * C1 * C2 * X)	0.00085	0.00086	0.00085
	(!A1 * !B2 * C1 * C2 * X)	-0.00117	-0.00118	-0.00118
	(!A1 * !B2 * C1 * !C2 * !X)	0.00036	0.00036	0.00035
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00139	-0.00139	-0.00140
	(!A1 * !B2 * !C1 * !X)	0.00036	0.00036	0.00035
	(!A1 * !B2 * !C1 * !X)	-0.00139	-0.00139	-0.00140

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00088	0.00088	0.00088
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00077	-0.00076	-0.00076
	(A1 * A2 * B2 * !C1 * X)	0.00088	0.00088	0.00088
	(A1 * A2 * B2 * !C1 * X)	-0.00077	-0.00076	-0.00076
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00082	0.00084	0.00083
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * !B2 * !C1 * X)	0.00082	0.00084	0.00083
	(A1 * A2 * !B2 * !C1 * X)	-0.00076	-0.00076	-0.00075
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00089	0.00088	0.00087
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00104	-0.00106	-0.00105
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00081	0.00082	0.00082
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00111	-0.00111	-0.00111
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00128	-0.00129	-0.00130
	(A1 * !A2 * !B2 * !C1 * !X)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00128	-0.00129	-0.00130
	(!A1 * B2 * C1 * C2 * X)	0.00089	0.00088	0.00087
	(!A1 * B2 * C1 * C2 * X)	-0.00104	-0.00106	-0.00105
	(!A1 * !B2 * C1 * C2 * X)	0.00081	0.00082	0.00082
	(!A1 * !B2 * C1 * C2 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * !B2 * C1 * !C2 * !X)	0.00035	0.00035	0.00034
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00128	-0.00129	-0.00130
	(!A1 * !B2 * !C1 * !X)	0.00035	0.00035	0.00034
	(!A1 * !B2 * !C1 * !X)	-0.00128	-0.00129	-0.00130

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)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * B2 * C1 * C2 * X)	0.00088	0.00087	0.00087
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * B2 * !C1 * X)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * B2 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00084	-0.00086	-0.00086
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00084	0.00085	0.00085
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00083	-0.00087	-0.00086
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * !B2 * !C1 * X)	-0.00084	-0.00087	-0.00086
	(A1 * A2 * !B2 * !C1 * X)	0.00081	0.00082	0.00081
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00114	0.00114	0.00113
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00083	-0.00086	-0.00085
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00118	0.00119	0.00118
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00139	0.00140	0.00140
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(A1 * !A2 * !B2 * !C1 * !X)	0.00139	0.00140	0.00140
	(!A1 * B2 * C1 * C2 * X)	-0.00091	-0.00091	-0.00091
	(!A1 * B2 * C1 * C2 * X)	0.00114	0.00114	0.00113
	(!A1 * !B2 * C1 * C2 * X)	-0.00083	-0.00086	-0.00085
	(!A1 * !B2 * C1 * C2 * X)	0.00117	0.00119	0.00118
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !B2 * C1 * !C2 * !X)	0.00139	0.00140	0.00140
	(!A1 * !B2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A1 * !B2 * !C1 * !X)	0.00139	0.00140	0.00140

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00088	-0.00088	-0.00088
	(A1 * A2 * B2 * C1 * C2 * X)	0.00082	0.00082	0.00082
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00079	0.00079	0.00078
	(A1 * A2 * B2 * !C1 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * B2 * !C1 * X)	0.00079	0.00079	0.00078
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00081	-0.00083	-0.00083
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00079	0.00080	0.00079
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00080	-0.00083	-0.00083
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00075	0.00076	0.00075
	(A1 * A2 * !B2 * !C1 * X)	-0.00081	-0.00083	-0.00083
	(A1 * A2 * !B2 * !C1 * X)	0.00076	0.00076	0.00075
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00088	-0.00088	-0.00087
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00105	0.00106	0.00105
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00080	-0.00082	-0.00082
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00112	0.00111	0.00111
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00032	-0.00032	-0.00033
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00130	0.00130	0.00130
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00032	-0.00032	-0.00033
	(A1 * !A2 * !B2 * !C1 * !X)	0.00130	0.00130	0.00130
	(!A1 * B2 * C1 * C2 * X)	-0.00088	-0.00088	-0.00087
	(!A1 * B2 * C1 * C2 * X)	0.00106	0.00106	0.00105
	(!A1 * !B2 * C1 * C2 * X)	-0.00080	-0.00082	-0.00082
	(!A1 * !B2 * C1 * C2 * X)	0.00111	0.00111	0.00111
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !B2 * C1 * !C2 * !X)	0.00129	0.00130	0.00130
	(!A1 * !B2 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !B2 * !C1 * !X)	0.00129	0.00130	0.00130

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)	0.00087	0.00088	0.00088
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00082	-0.00083	-0.00083
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00088	0.00087	0.00087
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00078	-0.00077	-0.00077
	(A1 * A2 * B1 * !C1 * X)	0.00088	0.00087	0.00087
	(A1 * A2 * B1 * !C1 * X)	-0.00078	-0.00077	-0.00077
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00082	0.00083	0.00083
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00083	0.00084	0.00083
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00077	-0.00077	-0.00077
	(A1 * A2 * !B1 * !C1 * X)	0.00083	0.00084	0.00082
	(A1 * A2 * !B1 * !C1 * X)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00088	0.00088	0.00087
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00107	-0.00108	-0.00108
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00082	0.00083	0.00082
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00078	0.00079	0.00078
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * !B1 * !C1 * !X)	0.00078	0.00079	0.00078
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * B1 * C1 * C2 * X)	0.00088	0.00088	0.00087
	(!A1 * B1 * C1 * C2 * X)	-0.00107	-0.00108	-0.00108
	(!A1 * !B1 * C1 * !C2 * !X)	0.00078	0.00078	0.00078
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * !B1 * !C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !B1 * !C1 * !X)	-0.00116	-0.00117	-0.00116

	(A1 * A2 * B1 * C1 * C2 * X)	0.00089	0.00089	0.00089
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00090	0.00089	0.00089
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00077	-0.00076	-0.00076
	(A1 * A2 * B1 * !C1 * X)	0.00090	0.00089	0.00089
	(A1 * A2 * B1 * !C1 * X)	-0.00077	-0.00076	-0.00076
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00084	0.00084	0.00084
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00084	0.00085	0.00084
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * !B1 * !C1 * X)	0.00084	0.00085	0.00084
	(A1 * A2 * !B1 * !C1 * X)	-0.00075	-0.00076	-0.00075
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00090	0.00089	0.00089
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00104	-0.00106	-0.00105
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00083	0.00083	0.00083
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00111	-0.00111	-0.00111
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00080	0.00081	0.00081
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00110	-0.00111	-0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	0.00080	0.00081	0.00081
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * B1 * C1 * C2 * X)	0.00090	0.00089	0.00089
	(!A1 * B1 * C1 * C2 * X)	-0.00104	-0.00106	-0.00105
	(!A1 * !B1 * C1 * !C2 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !B1 * !C1 * !X)	-0.00110	-0.00111	-0.00111

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)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * B1 * C1 * C2 * X)	0.00082	0.00083	0.00083
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00078	0.00078	0.00079
	(A1 * A2 * B1 * !C1 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * B1 * !C1 * X)	0.00078	0.00078	0.00079
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00081	-0.00083	-0.00083
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00081	-0.00083	-0.00083
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00077	0.00077	0.00077
	(A1 * A2 * !B1 * !C1 * X)	-0.00081	-0.00083	-0.00082
	(A1 * A2 * !B1 * !C1 * X)	0.00077	0.00077	0.00077
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00108	0.00108	0.00108
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00080	-0.00082	-0.00082
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00112	0.00113	0.00112
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00076	-0.00078	-0.00078
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00076	-0.00078	-0.00078
	(A1 * !A2 * !B1 * !C1 * !X)	0.00116	0.00117	0.00116
	(!A1 * B1 * C1 * C2 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * B1 * C1 * C2 * X)	0.00108	0.00108	0.00108
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00076	-0.00078	-0.00078
	(!A1 * !B1 * C1 * !C2 * !X)	0.00116	0.00117	0.00116
	(!A1 * !B1 * !C1 * !X)	-0.00076	-0.00078	-0.00078
	(!A1 * !B1 * !C1 * !X)	0.00116	0.00117	0.00116

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00089	-0.00089	-0.00089
	(A1 * A2 * B1 * C1 * C2 * X)	0.00082	0.00082	0.00082
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00086	-0.00087	-0.00087
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * B1 * !C1 * X)	-0.00086	-0.00087	-0.00087
	(A1 * A2 * B1 * !C1 * X)	0.00079	0.00079	0.00078
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00082	-0.00084	-0.00084
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00079	0.00079	0.00079
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00082	-0.00085	-0.00084
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00075	0.00076	0.00075
	(A1 * A2 * !B1 * !C1 * X)	-0.00082	-0.00085	-0.00084
	(A1 * A2 * !B1 * !C1 * X)	0.00075	0.00076	0.00075
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00089	-0.00089	-0.00089
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00106	0.00106	0.00105
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00081	-0.00083	-0.00083
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00079	-0.00081	-0.00081
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00079	-0.00081	-0.00081
	(A1 * !A2 * !B1 * !C1 * !X)	0.00111	0.00112	0.00111
	(!A1 * B1 * C1 * C2 * X)	-0.00089	-0.00089	-0.00089
	(!A1 * B1 * C1 * C2 * X)	0.00106	0.00106	0.00105
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00082	-0.00084	-0.00083
	(!A1 * !B1 * C1 * !C2 * !X)	0.00111	0.00111	0.00111
	(!A1 * !B1 * !C1 * !X)	-0.00082	-0.00084	-0.00083
	(!A1 * !B1 * !C1 * !X)	0.00111	0.00111	0.00111

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)	0.00106	0.00107	0.00107
	(A1 * B1 * B2 * C2 * X)	-0.00072	-0.00072	-0.00072
	(A1 * B1 * B2 * !C2 * X)	0.00102	0.00103	0.00102
	(A1 * B1 * B2 * !C2 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00108	0.00107	0.00107
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00074	-0.00072	-0.00072
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * !B1 * C2 * X)	0.00106	0.00107	0.00107
	(A1 * A2 * !B1 * C2 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * !B1 * !C2 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * !C2 * X)	-0.00072	-0.00073	-0.00072
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00038	0.00038	0.00036
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00140	-0.00140	-0.00141
	(A1 * !A2 * !B1 * !C2 * !X)	0.00038	0.00038	0.00036
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00140	-0.00140	-0.00141
	(!A1 * B1 * B2 * C2 * X)	0.00106	0.00107	0.00107
	(!A1 * B1 * B2 * C2 * X)	-0.00072	-0.00072	-0.00072
	(!A1 * B1 * B2 * !C2 * X)	0.00102	0.00103	0.00102
	(!A1 * B1 * B2 * !C2 * X)	-0.00072	-0.00073	-0.00072
	(!A1 * B1 * !B2 * !C2 * !X)	0.00038	0.00038	0.00036
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00140	-0.00140	-0.00141
	(!A1 * !B1 * !C2 * !X)	0.00038	0.00038	0.00036
	(!A1 * !B1 * !C2 * !X)	-0.00140	-0.00140	-0.00141

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00103	0.00104	0.00104
	(A1 * B1 * B2 * C2 * X)	-0.00068	-0.00068	-0.00068
	(A1 * B1 * B2 * !C2 * X)	0.00098	0.00100	0.00099
	(A1 * B1 * B2 * !C2 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00103	0.00104	0.00104
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * !B1 * C2 * X)	0.00103	0.00104	0.00104
	(A1 * A2 * !B1 * C2 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * !B1 * !C2 * X)	0.00099	0.00100	0.00099
	(A1 * A2 * !B1 * !C2 * X)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00037	0.00037	0.00036
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00133	-0.00133	-0.00134
	(A1 * !A2 * !B1 * !C2 * !X)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00133	-0.00133	-0.00134
	(!A1 * B1 * B2 * C2 * X)	0.00103	0.00104	0.00104
	(!A1 * B1 * B2 * C2 * X)	-0.00068	-0.00068	-0.00068
	(!A1 * B1 * B2 * !C2 * X)	0.00099	0.00100	0.00099
	(!A1 * B1 * B2 * !C2 * X)	-0.00068	-0.00069	-0.00068
	(!A1 * B1 * !B2 * !C2 * !X)	0.00037	0.00037	0.00036
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00133	-0.00133	-0.00134
	(!A1 * !B1 * !C2 * !X)	0.00037	0.00037	0.00036
	(!A1 * !B1 * !C2 * !X)	-0.00133	-0.00133	-0.00134

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)**	-0.00097	-0.00097	-0.00106
	(A1 * B1 * B2 * C2 * X)	0.00082	0.00081	0.00074
	(A1 * B1 * B2 * !C2 * X)	-0.00100	-0.00103	-0.00102
	(A1 * B1 * B2 * !C2 * X)	0.00072	0.00072	0.00072
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00085	-0.00085	-0.00103
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00090	0.00089	0.00076
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00099	-0.00103	-0.00102
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00072	0.00073	0.00072
	(A1 * A2 * !B1 * C2 * X)	-0.00085	-0.00085	-0.00103
	(A1 * A2 * !B1 * C2 * X)	0.00090	0.00089	0.00076
	(A1 * A2 * !B1 * !C2 * X)	-0.00099	-0.00103	-0.00102
	(A1 * A2 * !B1 * !C2 * X)	0.00072	0.00073	0.00072
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00036	-0.00036	-0.00036
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00141	0.00141	0.00141
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00036	-0.00036	-0.00036
	(A1 * !A2 * !B1 * !C2 * !X)	0.00141	0.00141	0.00141
	(!A1 * B1 * B2 * C2 * X)	-0.00096	-0.00097	-0.00106
	(!A1 * B1 * B2 * C2 * X)	0.00083	0.00082	0.00075
	(!A1 * B1 * B2 * !C2 * X)	-0.00099	-0.00103	-0.00102
	(!A1 * B1 * B2 * !C2 * X)	0.00072	0.00073	0.00072
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * B1 * !B2 * !C2 * !X)	0.00141	0.00141	0.00141
	(!A1 * !B1 * !C2 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !B1 * !C2 * !X)	0.00141	0.00141	0.00141

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00096	-0.00096	-0.00103
	(A1 * B1 * B2 * C2 * X)	0.00076	0.00075	0.00070
	(A1 * B1 * B2 * !C2 * X)	-0.00097	-0.00099	-0.00099
	(A1 * B1 * B2 * !C2 * X)	0.00068	0.00068	0.00068
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00083	-0.00084	-0.00100
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00085	0.00084	0.00072
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00097	-0.00099	-0.00099
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00068	0.00069	0.00068
	(A1 * A2 * !B1 * C2 * X)	-0.00083	-0.00084	-0.00100
	(A1 * A2 * !B1 * C2 * X)	0.00085	0.00084	0.00072
	(A1 * A2 * !B1 * !C2 * X)	-0.00096	-0.00100	-0.00099
	(A1 * A2 * !B1 * !C2 * X)	0.00068	0.00069	0.00068
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00134	0.00134	0.00134
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * !B1 * !C2 * !X)	0.00134	0.00134	0.00134
	(!A1 * B1 * B2 * C2 * X)	-0.00095	-0.00096	-0.00103
	(!A1 * B1 * B2 * C2 * X)	0.00076	0.00075	0.00070
	(!A1 * B1 * B2 * !C2 * X)	-0.00096	-0.00100	-0.00099
	(!A1 * B1 * B2 * !C2 * X)	0.00068	0.00069	0.00068
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * B1 * !B2 * !C2 * !X)	0.00134	0.00134	0.00134
	(!A1 * !B1 * !C2 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !B1 * !C2 * !X)	0.00134	0.00134	0.00134

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)**	0.00107	0.00107	0.00107
	(A1 * B1 * B2 * C1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * B1 * B2 * !C1 * X)	0.00102	0.00103	0.00102
	(A1 * B1 * B2 * !C1 * X)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00108	0.00107	0.00107
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00071	-0.00070	-0.00070
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * !B1 * C1 * X)	0.00108	0.00107	0.00107
	(A1 * A2 * !B1 * C1 * X)	-0.00071	-0.00070	-0.00069
	(A1 * A2 * !B1 * !C1 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * !C1 * X)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00079	0.00081	0.00079
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * !B1 * !C1 * !X)	0.00079	0.00081	0.00079
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * B1 * B2 * C1 * X)	0.00106	0.00107	0.00107
	(!A1 * B1 * B2 * C1 * X)	-0.00069	-0.00070	-0.00070
	(!A1 * B1 * B2 * !C1 * X)	0.00102	0.00103	0.00102
	(!A1 * B1 * B2 * !C1 * X)	-0.00069	-0.00070	-0.00069
	(!A1 * B1 * !B2 * !C1 * !X)	0.00079	0.00081	0.00079
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1 * !C1 * !X)	0.00079	0.00081	0.00079
	(!A1 * !B1 * !C1 * !X)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00110	0.00110	0.00110
	(A1 * B1 * B2 * C1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * B1 * B2 * !C1 * X)	0.00105	0.00107	0.00105
	(A1 * B1 * B2 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00111	0.00110	0.00110
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00071	-0.00070	-0.00070
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00105	0.00107	0.00105
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * !B1 * C1 * X)	0.00110	0.00110	0.00110
	(A1 * A2 * !B1 * C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * !B1 * !C1 * X)	0.00105	0.00107	0.00105
	(A1 * A2 * !B1 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00078	0.00078	0.00078
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * !A2 * !B1 * !C1 * !X)	0.00078	0.00079	0.00078
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00130
	(!A1 * B1 * B2 * C1 * X)	0.00110	0.00110	0.00110
	(!A1 * B1 * B2 * C1 * X)	-0.00070	-0.00070	-0.00070
	(!A1 * B1 * B2 * !C1 * X)	0.00105	0.00107	0.00105
	(!A1 * B1 * B2 * !C1 * X)	-0.00070	-0.00070	-0.00070
	(!A1 * B1 * !B2 * !C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00130	-0.00130	-0.00130
	(!A1 * !B1 * !C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00130

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)**	-0.00096	-0.00097	-0.00106
	(A1 * B1 * B2 * C1 * X)	0.00079	0.00079	0.00072
	(A1 * B1 * B2 * !C1 * X)	-0.00100	-0.00103	-0.00102
	(A1 * B1 * B2 * !C1 * X)	0.00069	0.00070	0.00069
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00084	-0.00085	-0.00103
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00087	0.00086	0.00073
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00100	-0.00102	-0.00102
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00069	0.00070	0.00069
	(A1 * A2 * !B1 * C1 * X)	-0.00084	-0.00085	-0.00103
	(A1 * A2 * !B1 * C1 * X)	0.00087	0.00086	0.00073
	(A1 * A2 * !B1 * !C1 * X)	-0.00100	-0.00103	-0.00102
	(A1 * A2 * !B1 * !C1 * X)	0.00069	0.00070	0.00069
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00078	-0.00080	-0.00079
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00124	0.00125	0.00124
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00078	-0.00080	-0.00079
	(A1 * !A2 * !B1 * !C1 * !X)	0.00124	0.00125	0.00124
	(!A1 * B1 * B2 * C1 * X)	-0.00096	-0.00096	-0.00106
	(!A1 * B1 * B2 * C1 * X)	0.00080	0.00079	0.00072
	(!A1 * B1 * B2 * !C1 * X)	-0.00100	-0.00103	-0.00102
	(!A1 * B1 * B2 * !C1 * X)	0.00069	0.00070	0.00069
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00078	-0.00080	-0.00079
	(!A1 * B1 * !B2 * !C1 * !X)	0.00124	0.00125	0.00124
	(!A1 * !B1 * !C1 * !X)	-0.00078	-0.00080	-0.00079
	(!A1 * !B1 * !C1 * !X)	0.00124	0.00125	0.00124

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00102	-0.00103	-0.00110
	(A1 * B1 * B2 * C1 * X)	0.00077	0.00076	0.00071
	(A1 * B1 * B2 * !C1 * X)	-0.00104	-0.00106	-0.00105
	(A1 * B1 * B2 * !C1 * X)	0.00069	0.00070	0.00070
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00090	-0.00090	-0.00107
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00086	0.00085	0.00074
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00103	-0.00106	-0.00105
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00069	0.00070	0.00070
	(A1 * A2 * !B1 * C1 * X)	-0.00090	-0.00090	-0.00107
	(A1 * A2 * !B1 * C1 * X)	0.00086	0.00085	0.00074
	(A1 * A2 * !B1 * !C1 * X)	-0.00103	-0.00106	-0.00105
	(A1 * A2 * !B1 * !C1 * X)	0.00069	0.00070	0.00070
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00076	-0.00078	-0.00078
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00130	0.00130	0.00130
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00076	-0.00079	-0.00078
	(A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00130	0.00130
	(!A1 * B1 * B2 * C1 * X)	-0.00102	-0.00102	-0.00110
	(!A1 * B1 * B2 * C1 * X)	0.00077	0.00077	0.00071
	(!A1 * B1 * B2 * !C1 * X)	-0.00103	-0.00106	-0.00105
	(!A1 * B1 * B2 * !C1 * X)	0.00070	0.00070	0.00070
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00076	-0.00079	-0.00078
	(!A1 * B1 * !B2 * !C1 * !X)	0.00130	0.00130	0.00130
	(!A1 * !B1 * !C1 * !X)	-0.00076	-0.00079	-0.00078
	(!A1 * !B1 * !C1 * !X)	0.00130	0.00130	0.00130

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22oi_1	9.59040
sky130_fd_sc_hs__a22oi_2	15.98400
sky130_fd_sc_hs__a22oi_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__a22oi_1	0.00257	0.00251	0.00270	0.00269	0.15493
sky130_fd_sc_hs__a22oi_2	0.00562	0.00485	0.00545	0.00488	0.29046
sky130_fd_sc_hs__a22oi_4	0.00981	0.00950	0.01006	0.00975	0.56302

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.00013	0.00019
sky130_fd_sc_hs__a22oi_2	0.00000	0.00027	0.00039
sky130_fd_sc_hs__a22oi_4	0.00000	0.00053	0.00077

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)	0.35007	1.95600	13.50060
	A2->Y (FR)	0.41476	2.03130	13.60600
	B1->Y (FR)	0.27488	1.81453	13.07630
	B2->Y (FR)	0.33690	1.88412	13.21010
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.36231	1.74621	13.35570
	A2->Y (FR)	0.42767	1.83171	13.56150
	B1->Y (FR)	0.27572	1.60217	12.98310
	B2->Y (FR)	0.34881	1.69554	13.21000
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.32379	1.54011	13.30280
	A2->Y (FR)	0.40375	1.63820	13.53450
	B1->Y (FR)	0.24837	1.40931	12.95780
	B2->Y (FR)	0.32900	1.50676	13.21070

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.05408	0.60541	4.60303
	A2->Y (RF)	0.05969	0.58696	4.43778
	B1->Y (RF)	0.04551	0.58368	4.59752
	B2->Y (RF)	0.05093	0.56968	4.44944
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.05631	0.56419	4.59922
	A2->Y (RF)	0.06137	0.55435	4.47260
	B1->Y (RF)	0.04533	0.53400	4.56217
	B2->Y (RF)	0.05209	0.52927	4.43706
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.05454	0.53780	4.78588
	A2->Y (RF)	0.06110	0.51365	4.45938
	B1->Y (RF)	0.04333	0.50365	4.76312
	B2->Y (RF)	0.05011	0.48346	4.41792

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00031	0.00020	0.00018
	A1	0.00442	0.00430	0.00427
	A2	0.00062	0.00055	0.00052
	A2	0.00536	0.00529	0.00526
	B1	0.00039	0.00025	0.00023
	B1	0.00391	0.00378	0.00374
	B2	0.00059	0.00048	0.00045
	B2	0.00475	0.00464	0.00460
sky130_fd_sc_hs__a22oi_2	A1	0.00123	0.00093	0.00091
	A1	0.00996	0.00967	0.00963
	A2	0.00197	0.00174	0.00171
	A2	0.01137	0.01116	0.01112
	B1	0.00096	0.00065	0.00062
	B1	0.00827	0.00793	0.00791
	B2	0.00194	0.00167	0.00165
	B2	0.01006	0.00981	0.00975
sky130_fd_sc_hs__a22oi_4	A1	0.00122	0.00070	0.00067
	A1	0.01763	0.01706	0.01705
	A2	0.00281	0.00241	0.00235
	A2	0.02152	0.02110	0.02103
	B1	0.00109	0.00047	0.00047
	B1	0.01502	0.01438	0.01436
	B2	0.00272	0.00219	0.00217
	B2	0.01890	0.01839	0.01828

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00504	0.00494	0.00485
	A1	0.00121	0.00112	0.00104
	A2	0.00568	0.00561	0.00551
	A2	0.00118	0.00110	0.00101
	B1	0.00346	0.00345	0.00344
	B1	-0.00009	-0.00011	-0.00014
	B2	0.00415	0.00415	0.00413
	B2	-0.00008	-0.00010	-0.00013
sky130_fd_sc_hs__a22oi_2	A1	0.01033	0.01011	0.00996
	A1	0.00215	0.00192	0.00177
	A2	0.01110	0.01095	0.01078
	A2	0.00221	0.00203	0.00190
	B1	0.00732	0.00725	0.00726
	B1	-0.00004	-0.00013	-0.00016
	B2	0.00828	0.00825	0.00821
	B2	-0.00001	-0.00008	-0.00010
sky130_fd_sc_hs__a22oi_4	A1	0.01942	0.01892	0.01870
	A1	0.00411	0.00364	0.00343
	A2	0.02178	0.02144	0.02113
	A2	0.00408	0.00369	0.00347
	B1	0.01369	0.01354	0.01365
	B1	-0.00039	-0.00062	-0.00054
	B2	0.01623	0.01611	0.01621
	B2	-0.00029	-0.00047	-0.00044

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)	0.00099	0.00098	0.00098
	(A2 * B1 * B2 * !Y)	-0.00116	-0.00118	-0.00117
	(!A2 * B1 * B2 * !Y)	0.00092	0.00093	0.00092
	(!A2 * B1 * B2 * !Y)	-0.00122	-0.00122	-0.00122
	(!A2 * B1 * !B2 * Y)	0.00040	0.00040	0.00038
	(!A2 * B1 * !B2 * Y)	-0.00140	-0.00140	-0.00142
	(!A2 * !B1 * Y)	0.00040	0.00040	0.00038
	(!A2 * !B1 * Y)	-0.00140	-0.00140	-0.00142
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00216	0.00216	0.00215
	(A2 * B1 * B2 * !Y)	-0.00244	-0.00252	-0.00250
	(!A2 * B1 * B2 * !Y)	0.00202	0.00204	0.00202
	(!A2 * B1 * B2 * !Y)	-0.00262	-0.00264	-0.00262
	(!A2 * B1 * !B2 * Y)	0.00079	0.00079	0.00077
	(!A2 * B1 * !B2 * Y)	-0.00314	-0.00317	-0.00320
	(!A2 * !B1 * Y)	0.00079	0.00079	0.00077
	(!A2 * !B1 * Y)	-0.00314	-0.00317	-0.00320
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00399	0.00399	0.00396
	(A2 * B1 * B2 * !Y)	-0.00464	-0.00479	-0.00474
	(!A2 * B1 * B2 * !Y)	0.00370	0.00374	0.00371
	(!A2 * B1 * B2 * !Y)	-0.00494	-0.00493	-0.00495
	(!A2 * B1 * !B2 * Y)	0.00151	0.00152	0.00145
	(!A2 * B1 * !B2 * Y)	-0.00572	-0.00578	-0.00586
	(!A2 * !B1 * Y)	0.00152	0.00153	0.00146
	(!A2 * !B1 * Y)	-0.00572	-0.00578	-0.00586

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)	-0.00098	-0.00098	-0.00098
	(A2 * B1 * B2 * !Y)	0.00117	0.00118	0.00117
	(!A2 * B1 * B2 * !Y)	-0.00090	-0.00093	-0.00092
	(!A2 * B1 * B2 * !Y)	0.00122	0.00123	0.00122
	(!A2 * B1 * !B2 * Y)	-0.00038	-0.00038	-0.00037
	(!A2 * B1 * !B2 * Y)	0.00144	0.00143	0.00142
	(!A2 * !B1 * Y)	-0.00038	-0.00038	-0.00037
	(!A2 * !B1 * Y)	0.00144	0.00143	0.00142
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00216	-0.00216	-0.00215
	(A2 * B1 * B2 * !Y)	0.00251	0.00252	0.00250
	(!A2 * B1 * B2 * !Y)	-0.00196	-0.00204	-0.00202
	(!A2 * B1 * B2 * !Y)	0.00262	0.00265	0.00263
	(!A2 * B1 * !B2 * Y)	-0.00076	-0.00075	-0.00075
	(!A2 * B1 * !B2 * Y)	0.00324	0.00321	0.00320
	(!A2 * !B1 * Y)	-0.00076	-0.00075	-0.00075
	(!A2 * !B1 * Y)	0.00324	0.00321	0.00320
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00398	-0.00399	-0.00396
	(A2 * B1 * B2 * !Y)	0.00477	0.00479	0.00474
	(!A2 * B1 * B2 * !Y)	-0.00357	-0.00374	-0.00371
	(!A2 * B1 * B2 * !Y)	0.00494	0.00493	0.00496
	(!A2 * B1 * !B2 * Y)	-0.00141	-0.00142	-0.00141
	(!A2 * B1 * !B2 * Y)	0.00584	0.00588	0.00586
	(!A2 * !B1 * Y)	-0.00142	-0.00142	-0.00142
	(!A2 * !B1 * Y)	0.00584	0.00588	0.00586

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)	0.00105	0.00104	0.00104
	(A1 * B1 * B2 * !Y)	-0.00120	-0.00123	-0.00122
	(!A1 * B1 * B2 * !Y)	0.00098	0.00099	0.00098
	(!A1 * B1 * B2 * !Y)	-0.00127	-0.00127	-0.00127
	(!A1 * B1 * !B2 * Y)	0.00098	0.00099	0.00098
	(!A1 * B1 * !B2 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * Y)	0.00098	0.00099	0.00098
	(!A1 * !B1 * Y)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00197	0.00197	0.00196
	(A1 * B1 * B2 * !Y)	-0.00225	-0.00233	-0.00231
	(!A1 * B1 * B2 * !Y)	0.00184	0.00186	0.00184
	(!A1 * B1 * B2 * !Y)	-0.00241	-0.00242	-0.00241
	(!A1 * B1 * !B2 * Y)	0.00177	0.00178	0.00177
	(!A1 * B1 * !B2 * Y)	-0.00248	-0.00249	-0.00248
	(!A1 * !B1 * Y)	0.00176	0.00178	0.00177
	(!A1 * !B1 * Y)	-0.00248	-0.00249	-0.00248
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00402	0.00402	0.00399
	(A1 * B1 * B2 * !Y)	-0.00465	-0.00479	-0.00476
	(!A1 * B1 * B2 * !Y)	0.00370	0.00374	0.00372
	(!A1 * B1 * B2 * !Y)	-0.00495	-0.00498	-0.00497
	(!A1 * B1 * !B2 * Y)	0.00370	0.00373	0.00371
	(!A1 * B1 * !B2 * Y)	-0.00496	-0.00500	-0.00497
	(!A1 * !B1 * Y)	0.00370	0.00374	0.00371
	(!A1 * !B1 * Y)	-0.00496	-0.00500	-0.00497

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)	-0.00104	-0.00104	-0.00104
	(A1 * B1 * B2 * !Y)	0.00123	0.00123	0.00122
	(!A1 * B1 * B2 * !Y)	-0.00096	-0.00099	-0.00098
	(!A1 * B1 * B2 * !Y)	0.00127	0.00129	0.00127
	(!A1 * B1 * !B2 * Y)	-0.00096	-0.00099	-0.00098
	(!A1 * B1 * !B2 * Y)	0.00127	0.00128	0.00128
	(!A1 * !B1 * Y)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1 * Y)	0.00127	0.00128	0.00128
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00196	-0.00197	-0.00196
	(A1 * B1 * B2 * !Y)	0.00230	0.00233	0.00231
	(!A1 * B1 * B2 * !Y)	-0.00180	-0.00185	-0.00184
	(!A1 * B1 * B2 * !Y)	0.00242	0.00243	0.00241
	(!A1 * B1 * !B2 * Y)	-0.00173	-0.00178	-0.00177
	(!A1 * B1 * !B2 * Y)	0.00250	0.00250	0.00249
	(!A1 * !B1 * Y)	-0.00173	-0.00178	-0.00177
	(!A1 * !B1 * Y)	0.00250	0.00250	0.00249
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00399	-0.00401	-0.00399
	(A1 * B1 * B2 * !Y)	0.00474	0.00479	0.00476
	(!A1 * B1 * B2 * !Y)	-0.00364	-0.00374	-0.00372
	(!A1 * B1 * B2 * !Y)	0.00500	0.00503	0.00498
	(!A1 * B1 * !B2 * Y)	-0.00363	-0.00373	-0.00371
	(!A1 * B1 * !B2 * Y)	0.00501	0.00502	0.00499
	(!A1 * !B1 * Y)	-0.00364	-0.00374	-0.00371
	(!A1 * !B1 * Y)	0.00501	0.00502	0.00499

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)	0.00114	0.00113	0.00113
	(A1 * A2 * B2 * !Y)	-0.00076	-0.00075	-0.00075
	(A1 * A2 * !B2 * !Y)	0.00107	0.00109	0.00107
	(A1 * A2 * !B2 * !Y)	-0.00074	-0.00075	-0.00074
	(A1 * !A2 * !B2 * Y)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B2 * Y)	-0.00147	-0.00147	-0.00148
	(!A1 * !B2 * Y)	0.00037	0.00037	0.00036
	(!A1 * !B2 * Y)	-0.00147	-0.00147	-0.00148
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00245	0.00243	0.00243
	(A1 * A2 * B2 * !Y)	-0.00147	-0.00145	-0.00145
	(A1 * A2 * !B2 * !Y)	0.00230	0.00233	0.00230
	(A1 * A2 * !B2 * !Y)	-0.00145	-0.00146	-0.00145
	(A1 * !A2 * !B2 * Y)	0.00085	0.00085	0.00082
	(A1 * !A2 * !B2 * Y)	-0.00293	-0.00293	-0.00297
	(!A1 * !B2 * Y)	0.00085	0.00085	0.00082
	(!A1 * !B2 * Y)	-0.00293	-0.00293	-0.00297
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00448	0.00451	0.00450
	(A1 * A2 * B2 * !Y)	-0.00292	-0.00294	-0.00293
	(A1 * A2 * !B2 * !Y)	0.00426	0.00429	0.00427
	(A1 * A2 * !B2 * !Y)	-0.00292	-0.00292	-0.00292
	(A1 * !A2 * !B2 * Y)	0.00149	0.00150	0.00144
	(A1 * !A2 * !B2 * Y)	-0.00573	-0.00577	-0.00588
	(!A1 * !B2 * Y)	0.00150	0.00150	0.00144
	(!A1 * !B2 * Y)	-0.00574	-0.00577	-0.00588

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)	-0.00102	-0.00103	-0.00113
	(A1 * A2 * B2 * !Y)	0.00084	0.00084	0.00077
	(A1 * A2 * !B2 * !Y)	-0.00104	-0.00109	-0.00107
	(A1 * A2 * !B2 * !Y)	0.00074	0.00075	0.00074
	(A1 * !A2 * !B2 * Y)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * !B2 * Y)	0.00148	0.00149	0.00148
	(!A1 * !B2 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !B2 * Y)	0.00148	0.00149	0.00148
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00223	-0.00225	-0.00242
	(A1 * A2 * B2 * !Y)	0.00162	0.00162	0.00149
	(A1 * A2 * !B2 * !Y)	-0.00223	-0.00233	-0.00230
	(A1 * A2 * !B2 * !Y)	0.00145	0.00146	0.00145
	(A1 * !A2 * !B2 * Y)	-0.00080	-0.00081	-0.00080
	(A1 * !A2 * !B2 * Y)	0.00296	0.00297	0.00297
	(!A1 * !B2 * Y)	-0.00080	-0.00081	-0.00080
	(!A1 * !B2 * Y)	0.00296	0.00297	0.00297
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00412	-0.00415	-0.00447
	(A1 * A2 * B2 * !Y)	0.00326	0.00325	0.00300
	(A1 * A2 * !B2 * !Y)	-0.00412	-0.00429	-0.00427
	(A1 * A2 * !B2 * !Y)	0.00292	0.00292	0.00292
	(A1 * !A2 * !B2 * Y)	-0.00140	-0.00141	-0.00140
	(A1 * !A2 * !B2 * Y)	0.00587	0.00590	0.00588
	(!A1 * !B2 * Y)	-0.00141	-0.00141	-0.00140
	(!A1 * !B2 * Y)	0.00587	0.00590	0.00588

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)	0.00124	0.00124	0.00124
	(A1 * A2 * B1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * A2 * !B1 * !Y)	0.00118	0.00120	0.00118
	(A1 * A2 * !B1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * !B1 * Y)	0.00098	0.00099	0.00098
	(A1 * !A2 * !B1 * Y)	-0.00131	-0.00132	-0.00132
	(!A1 * !B1 * Y)	0.00098	0.00099	0.00098
	(!A1 * !B1 * Y)	-0.00131	-0.00132	-0.00132
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00214	0.00214	0.00214
	(A1 * A2 * B1 * !Y)	-0.00146	-0.00146	-0.00146
	(A1 * A2 * !B1 * !Y)	0.00202	0.00204	0.00203
	(A1 * A2 * !B1 * !Y)	-0.00145	-0.00146	-0.00146
	(A1 * !A2 * !B1 * Y)	0.00177	0.00176	0.00176
	(A1 * !A2 * !B1 * Y)	-0.00246	-0.00245	-0.00246
	(!A1 * !B1 * Y)	0.00175	0.00177	0.00176
	(!A1 * !B1 * Y)	-0.00244	-0.00246	-0.00246
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00450	0.00452	0.00450
	(A1 * A2 * B1 * !Y)	-0.00294	-0.00295	-0.00293
	(A1 * A2 * !B1 * !Y)	0.00424	0.00431	0.00425
	(A1 * A2 * !B1 * !Y)	-0.00292	-0.00294	-0.00293
	(A1 * !A2 * !B1 * Y)	0.00372	0.00373	0.00371
	(A1 * !A2 * !B1 * Y)	-0.00496	-0.00496	-0.00495
	(!A1 * !B1 * Y)	0.00372	0.00373	0.00371
	(!A1 * !B1 * Y)	-0.00496	-0.00496	-0.00495

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)	-0.00113	-0.00114	-0.00123
	(A1 * A2 * B1 * !Y)	0.00085	0.00085	0.00077
	(A1 * A2 * !B1 * !Y)	-0.00116	-0.00119	-0.00118
	(A1 * A2 * !B1 * !Y)	0.00075	0.00075	0.00075
	(A1 * !A2 * !B1 * Y)	-0.00096	-0.00099	-0.00098
	(A1 * !A2 * !B1 * Y)	0.00131	0.00133	0.00132
	(!A1 * !B1 * Y)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1 * Y)	0.00131	0.00133	0.00132
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00194	-0.00196	-0.00213
	(A1 * A2 * B1 * !Y)	0.00163	0.00163	0.00150
	(A1 * A2 * !B1 * !Y)	-0.00199	-0.00204	-0.00203
	(A1 * A2 * !B1 * !Y)	0.00146	0.00146	0.00146
	(A1 * !A2 * !B1 * Y)	-0.00173	-0.00176	-0.00176
	(A1 * !A2 * !B1 * Y)	0.00246	0.00247	0.00246
	(!A1 * !B1 * Y)	-0.00173	-0.00177	-0.00176
	(!A1 * !B1 * Y)	0.00246	0.00247	0.00246
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00412	-0.00414	-0.00447
	(A1 * A2 * B1 * !Y)	0.00326	0.00325	0.00301
	(A1 * A2 * !B1 * !Y)	-0.00417	-0.00428	-0.00425
	(A1 * A2 * !B1 * !Y)	0.00293	0.00294	0.00293
	(A1 * !A2 * !B1 * Y)	-0.00363	-0.00373	-0.00371
	(A1 * !A2 * !B1 * Y)	0.00497	0.00498	0.00495
	(!A1 * !B1 * Y)	-0.00363	-0.00373	-0.00371
	(!A1 * !B1 * Y)	0.00497	0.00498	0.00495

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22o_1	11.18880
sky130_fd_sc_hs__a22o_2	12.78720
sky130_fd_sc_hs__a22o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__a22o_1	0.00251	0.00227	0.00247	0.00250	0.35567
sky130_fd_sc_hs__a22o_2	0.00263	0.00238	0.00261	0.00251	0.70566
sky130_fd_sc_hs__a22o_4	0.00441	0.00462	0.00448	0.00490	1.41745

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22o_1	0.00000	0.00022	0.00026
sky130_fd_sc_hs__a22o_2	0.00000	0.00029	0.00033
sky130_fd_sc_hs__a22o_4	0.00000	0.00058	0.00067

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)	0.18982	1.22721	8.74314
	A2->X (RR)	0.19665	1.22569	8.89863
	B1->X (RR)	0.17443	1.19258	8.65240
	B2->X (RR)	0.18037	1.19889	8.78985
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.18609	1.09147	8.86761
	A2->X (RR)	0.19345	1.08164	8.98313
	B1->X (RR)	0.17003	1.05989	8.79241
	B2->X (RR)	0.17512	1.05583	8.89231
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.18158	0.96909	8.93181
	A2->X (RR)	0.18792	0.96899	9.06271
	B1->X (RR)	0.16824	0.94188	8.83242
	B2->X (RR)	0.17480	0.94280	8.95805

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.49855	1.31825	6.98187
	A2->X (FF)	0.55194	1.38173	7.15467
	B1->X (FF)	0.44809	1.21575	6.42410
	B2->X (FF)	0.49162	1.25907	6.54317
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.64451	1.46582	7.35667
	A2->X (FF)	0.71389	1.54702	7.53507
	B1->X (FF)	0.60174	1.36606	6.88815
	B2->X (FF)	0.64794	1.42038	6.99913
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.61609	1.42111	7.41489
	A2->X (FF)	0.66242	1.47383	7.53108
	B1->X (FF)	0.55876	1.30857	6.90713
	B2->X (FF)	0.59602	1.34365	6.99007

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00697	0.00691	0.00682
	A1	0.00337	0.00330	0.00322
	A2	0.00757	0.00760	0.00755
	A2	0.00337	0.00339	0.00337
	B1	0.00569	0.00558	0.00552
	B1	0.00236	0.00226	0.00221
	B2	0.00621	0.00619	0.00614
	B2	0.00232	0.00229	0.00225
sky130_fd_sc_hs__a22o_2	A1	0.00884	0.00891	0.00888
	A1	0.00503	0.00511	0.00511
	A2	0.00941	0.00957	0.00961
	A2	0.00498	0.00514	0.00522
	B1	0.00754	0.00759	0.00756
	B1	0.00399	0.00405	0.00405
	B2	0.00808	0.00821	0.00824
	B2	0.00397	0.00411	0.00410
sky130_fd_sc_hs__a22o_4	A1	0.01713	0.01732	0.01736
	A1	0.01025	0.01044	0.01059
	A2	0.01845	0.01874	0.01883
	A2	0.01026	0.01055	0.01067
	B1	0.01433	0.01438	0.01437
	B1	0.00820	0.00824	0.00827
	B2	0.01545	0.01558	0.01560
	B2	0.00806	0.00842	0.00831

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00223	0.00214	0.00301
	A1	0.00629	0.00623	0.00618
	A2	0.00283	0.00291	0.00308
	A2	0.00715	0.00724	0.00718
	B1	0.00276	0.00267	0.00294
	B1	0.00600	0.00597	0.00592
	B2	0.00296	0.00295	0.00309
	B2	0.00674	0.00676	0.00669
sky130_fd_sc_hs__a22o_2	A1	0.00382	0.00395	0.00620
	A1	0.00820	0.00831	0.00830
	A2	0.00440	0.00469	0.00651
	A2	0.00932	0.00959	0.00958
	B1	0.00449	0.00463	0.00555
	B1	0.00796	0.00811	0.00810
	B2	0.00405	0.00426	0.00588
	B2	0.00875	0.00899	0.00896
sky130_fd_sc_hs__a22o_4	A1	0.00740	0.00791	0.01085
	A1	0.01528	0.01577	0.01586
	A2	0.00813	0.00872	0.00903
	A2	0.01662	0.01722	0.01730
	B1	0.00737	0.00744	0.00961
	B1	0.01397	0.01435	0.01443
	B2	0.00846	0.00887	0.01147
	B2	0.01568	0.01610	0.01617

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)	0.00104	0.00103	0.00103
	(A2 * B1 * B2 * X)	-0.00104	-0.00106	-0.00105
	(!A2 * B1 * B2 * X)	0.00098	0.00098	0.00098
	(!A2 * B1 * B2 * X)	-0.00109	-0.00109	-0.00109
	(!A2 * B1 * !B2 * !X)	0.00039	0.00038	0.00036
	(!A2 * B1 * !B2 * !X)	-0.00139	-0.00140	-0.00143
	(!A2 * !B1 * !X)	0.00039	0.00038	0.00036
	(!A2 * !B1 * !X)	-0.00139	-0.00140	-0.00143
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00115	0.00114	0.00114
	(A2 * B1 * B2 * X)	-0.00103	-0.00105	-0.00104
	(!A2 * B1 * B2 * X)	0.00109	0.00109	0.00109
	(!A2 * B1 * B2 * X)	-0.00108	-0.00108	-0.00108
	(!A2 * B1 * !B2 * !X)	0.00043	0.00043	0.00040
	(!A2 * B1 * !B2 * !X)	-0.00140	-0.00140	-0.00144
	(!A2 * !B1 * !X)	0.00043	0.00043	0.00040
	(!A2 * !B1 * !X)	-0.00140	-0.00140	-0.00144
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00167	0.00166	0.00165
	(A2 * B1 * B2 * X)	-0.00214	-0.00219	-0.00217
	(!A2 * B1 * B2 * X)	0.00154	0.00155	0.00154
	(!A2 * B1 * B2 * X)	-0.00228	-0.00229	-0.00227
	(!A2 * B1 * !B2 * !X)	0.00060	0.00061	0.00058
	(!A2 * B1 * !B2 * !X)	-0.00261	-0.00263	-0.00266
	(!A2 * !B1 * !X)	0.00060	0.00061	0.00058
	(!A2 * !B1 * !X)	-0.00261	-0.00263	-0.00266

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)	-0.00103	-0.00103	-0.00103
	(A2 * B1 * B2 * X)	0.00104	0.00106	0.00105
	(!A2 * B1 * B2 * X)	-0.00095	-0.00098	-0.00098
	(!A2 * B1 * B2 * X)	0.00110	0.00110	0.00109
	(!A2 * B1 * !B2 * !X)	-0.00036	-0.00035	-0.00035
	(!A2 * B1 * !B2 * !X)	0.00144	0.00144	0.00143
	(!A2 * !B1 * !X)	-0.00036	-0.00036	-0.00035
	(!A2 * !B1 * !X)	0.00144	0.00144	0.00143
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00114	-0.00114	-0.00114
	(A2 * B1 * B2 * X)	0.00105	0.00105	0.00104
	(!A2 * B1 * B2 * X)	-0.00106	-0.00109	-0.00109
	(!A2 * B1 * B2 * X)	0.00109	0.00109	0.00108
	(!A2 * B1 * !B2 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * B1 * !B2 * !X)	0.00143	0.00144	0.00144
	(!A2 * !B1 * !X)	-0.00039	-0.00039	-0.00038
	(!A2 * !B1 * !X)	0.00145	0.00144	0.00144
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00165	-0.00166	-0.00165
	(A2 * B1 * B2 * X)	0.00216	0.00219	0.00217
	(!A2 * B1 * B2 * X)	-0.00149	-0.00155	-0.00154
	(!A2 * B1 * B2 * X)	0.00228	0.00230	0.00228
	(!A2 * B1 * !B2 * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * B1 * !B2 * !X)	0.00265	0.00266	0.00266
	(!A2 * !B1 * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * !B1 * !X)	0.00265	0.00266	0.00266

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)	0.00102	0.00102	0.00101
	(A1 * B1 * B2 * X)	-0.00103	-0.00105	-0.00105
	(!A1 * B1 * B2 * X)	0.00096	0.00097	0.00096
	(!A1 * B1 * B2 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * B1 * !B2 * !X)	0.00095	0.00096	0.00095
	(!A1 * B1 * !B2 * !X)	-0.00109	-0.00110	-0.00110
	(!A1 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !B1 * !X)	-0.00109	-0.00110	-0.00110
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00105	0.00104	0.00104
	(A1 * B1 * B2 * X)	-0.00108	-0.00110	-0.00109
	(!A1 * B1 * B2 * X)	0.00098	0.00100	0.00099
	(!A1 * B1 * B2 * X)	-0.00112	-0.00113	-0.00113
	(!A1 * B1 * !B2 * !X)	0.00098	0.00099	0.00098
	(!A1 * B1 * !B2 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !B1 * !X)	-0.00113	-0.00114	-0.00113
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00205	0.00205	0.00203
	(A1 * B1 * B2 * X)	-0.00208	-0.00216	-0.00213
	(!A1 * B1 * B2 * X)	0.00193	0.00194	0.00193
	(!A1 * B1 * B2 * X)	-0.00222	-0.00224	-0.00223
	(!A1 * B1 * !B2 * !X)	0.00186	0.00190	0.00188
	(!A1 * B1 * !B2 * !X)	-0.00226	-0.00229	-0.00227
	(!A1 * !B1 * !X)	0.00187	0.00190	0.00188
	(!A1 * !B1 * !X)	-0.00226	-0.00229	-0.00227

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)	-0.00101	-0.00101	-0.00101
	(A1 * B1 * B2 * X)	0.00105	0.00105	0.00105
	(!A1 * B1 * B2 * X)	-0.00094	-0.00096	-0.00096
	(!A1 * B1 * B2 * X)	0.00109	0.00110	0.00109
	(!A1 * B1 * !B2 * !X)	-0.00093	-0.00096	-0.00095
	(!A1 * B1 * !B2 * !X)	0.00110	0.00111	0.00110
	(!A1 * !B1 * !X)	-0.00093	-0.00096	-0.00095
	(!A1 * !B1 * !X)	0.00110	0.00111	0.00110
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00105	-0.00104	-0.00104
	(A1 * B1 * B2 * X)	0.00110	0.00110	0.00109
	(!A1 * B1 * B2 * X)	-0.00097	-0.00100	-0.00099
	(!A1 * B1 * B2 * X)	0.00113	0.00114	0.00113
	(!A1 * B1 * !B2 * !X)	-0.00096	-0.00099	-0.00098
	(!A1 * B1 * !B2 * !X)	0.00114	0.00114	0.00114
	(!A1 * !B1 * !X)	-0.00096	-0.00099	-0.00098
	(!A1 * !B1 * !X)	0.00114	0.00114	0.00114
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00203	-0.00205	-0.00203
	(A1 * B1 * B2 * X)	0.00213	0.00216	0.00213
	(!A1 * B1 * B2 * X)	-0.00189	-0.00194	-0.00193
	(!A1 * B1 * B2 * X)	0.00222	0.00225	0.00223
	(!A1 * B1 * !B2 * !X)	-0.00185	-0.00190	-0.00188
	(!A1 * B1 * !B2 * !X)	0.00227	0.00230	0.00228
	(!A1 * !B1 * !X)	-0.00184	-0.00190	-0.00188
	(!A1 * !B1 * !X)	0.00227	0.00230	0.00228

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)	0.00099	0.00099	0.00099
	(A1 * A2 * B2 * X)	-0.00068	-0.00067	-0.00067
	(A1 * A2 * !B2 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * !B2 * X)	-0.00067	-0.00068	-0.00067
	(A1 * !A2 * !B2 * !X)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * !X)	-0.00129	-0.00130	-0.00131
	(!A1 * !B2 * !X)	0.00035	0.00035	0.00034
	(!A1 * !B2 * !X)	-0.00129	-0.00129	-0.00130
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * B2 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !B2 * X)	0.00105	0.00107	0.00106
	(A1 * A2 * !B2 * X)	-0.00066	-0.00067	-0.00067
	(A1 * !A2 * !B2 * !X)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B2 * !X)	-0.00132	-0.00132	-0.00134
	(!A1 * !B2 * !X)	0.00038	0.00038	0.00037
	(!A1 * !B2 * !X)	-0.00132	-0.00132	-0.00134
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00183	0.00183	0.00183
	(A1 * A2 * B2 * X)	-0.00133	-0.00133	-0.00133
	(A1 * A2 * !B2 * X)	0.00172	0.00174	0.00174
	(A1 * A2 * !B2 * X)	-0.00131	-0.00133	-0.00132
	(A1 * !A2 * !B2 * !X)	0.00063	0.00063	0.00061
	(A1 * !A2 * !B2 * !X)	-0.00250	-0.00250	-0.00254
	(!A1 * !B2 * !X)	0.00063	0.00063	0.00061
	(!A1 * !B2 * !X)	-0.00250	-0.00250	-0.00254

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)	-0.00091	-0.00091	-0.00098
	(A1 * A2 * B2 * X)	0.00075	0.00075	0.00069
	(A1 * A2 * !B2 * X)	-0.00092	-0.00095	-0.00094
	(A1 * A2 * !B2 * X)	0.00068	0.00068	0.00067
	(A1 * !A2 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * !A2 * !B2 * !X)	0.00130	0.00131	0.00131
	(!A1 * !B2 * !X)	-0.00033	-0.00034	-0.00033
	(!A1 * !B2 * !X)	0.00130	0.00131	0.00130
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00103	-0.00104	-0.00111
	(A1 * A2 * B2 * X)	0.00074	0.00074	0.00068
	(A1 * A2 * !B2 * X)	-0.00103	-0.00107	-0.00106
	(A1 * A2 * !B2 * X)	0.00066	0.00067	0.00067
	(A1 * !A2 * !B2 * !X)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * !B2 * !X)	0.00133	0.00134	0.00134
	(!A1 * !B2 * !X)	-0.00037	-0.00036	-0.00036
	(!A1 * !B2 * !X)	0.00135	0.00133	0.00134
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00166	-0.00167	-0.00182
	(A1 * A2 * B2 * X)	0.00149	0.00147	0.00136
	(A1 * A2 * !B2 * X)	-0.00169	-0.00174	-0.00174
	(A1 * A2 * !B2 * X)	0.00132	0.00133	0.00132
	(A1 * !A2 * !B2 * !X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * !B2 * !X)	0.00253	0.00253	0.00254
	(!A1 * !B2 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !B2 * !X)	0.00253	0.00253	0.00254

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)	0.00103	0.00104	0.00104
	(A1 * A2 * B1 * X)	-0.00072	-0.00073	-0.00073
	(A1 * A2 * !B1 * X)	0.00098	0.00100	0.00099
	(A1 * A2 * !B1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * !A2 * !B1 * !X)	0.00083	0.00084	0.00083
	(A1 * !A2 * !B1 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !B1 * !X)	0.00088	0.00089	0.00089
	(!A1 * !B1 * !X)	-0.00115	-0.00116	-0.00115
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00110	0.00109	0.00109
	(A1 * A2 * B1 * X)	-0.00071	-0.00070	-0.00070
	(A1 * A2 * !B1 * X)	0.00103	0.00105	0.00103
	(A1 * A2 * !B1 * X)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * !B1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !B1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !B1 * !X)	0.00095	0.00096	0.00095
	(!A1 * !B1 * !X)	-0.00111	-0.00111	-0.00111
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00200	0.00200	0.00200
	(A1 * A2 * B1 * X)	-0.00144	-0.00144	-0.00144
	(A1 * A2 * !B1 * X)	0.00192	0.00193	0.00191
	(A1 * A2 * !B1 * X)	-0.00144	-0.00144	-0.00144
	(A1 * !A2 * !B1 * !X)	0.00151	0.00152	0.00150
	(A1 * !A2 * !B1 * !X)	-0.00253	-0.00254	-0.00253
	(!A1 * !B1 * !X)	0.00151	0.00152	0.00150
	(!A1 * !B1 * !X)	-0.00253	-0.00254	-0.00253

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)	-0.00096	-0.00096	-0.00103
	(A1 * A2 * B1 * X)	0.00080	0.00079	0.00074
	(A1 * A2 * !B1 * X)	-0.00097	-0.00099	-0.00099
	(A1 * A2 * !B1 * X)	0.00072	0.00073	0.00072
	(A1 * !A2 * !B1 * !X)	-0.00082	-0.00084	-0.00083
	(A1 * !A2 * !B1 * !X)	0.00116	0.00117	0.00116
	(!A1 * !B1 * !X)	-0.00087	-0.00089	-0.00089
	(!A1 * !B1 * !X)	0.00115	0.00116	0.00116
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00101	-0.00101	-0.00109
	(A1 * A2 * B1 * X)	0.00077	0.00076	0.00071
	(A1 * A2 * !B1 * X)	-0.00101	-0.00104	-0.00103
	(A1 * A2 * !B1 * X)	0.00069	0.00070	0.00069
	(A1 * !A2 * !B1 * !X)	-0.00091	-0.00094	-0.00093
	(A1 * !A2 * !B1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !B1 * !X)	-0.00093	-0.00096	-0.00095
	(!A1 * !B1 * !X)	0.00111	0.00111	0.00111
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00184	-0.00184	-0.00199
	(A1 * A2 * B1 * X)	0.00159	0.00158	0.00148
	(A1 * A2 * !B1 * X)	-0.00188	-0.00193	-0.00191
	(A1 * A2 * !B1 * X)	0.00144	0.00144	0.00144
	(A1 * !A2 * !B1 * !X)	-0.00147	-0.00152	-0.00150
	(A1 * !A2 * !B1 * !X)	0.00253	0.00254	0.00253
	(!A1 * !B1 * !X)	-0.00147	-0.00152	-0.00150
	(!A1 * !B1 * !X)	0.00253	0.00254	0.00253

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2oi_1	11.18880
sky130_fd_sc_hs__a2bb2oi_2	17.58240
sky130_fd_sc_hs__a2bb2oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__a2bb2oi_1	0.00216	0.00237	0.00248	0.00269	0.15294
sky130_fd_sc_hs__a2bb2oi_2	0.00238	0.00250	0.00479	0.00492	0.30820
sky130_fd_sc_hs__a2bb2oi_4	0.00372	0.00399	0.00951	0.00987	0.58892

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.00018	0.00022
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.00028	0.00034
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.00053	0.00068

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)	0.32577	1.64691	9.27375
	A2_N->Y (RR)	0.31927	1.62129	9.16426
	B1->Y (FR)	0.32802	1.95843	13.63220
	B2->Y (FR)	0.25978	1.84855	13.30480
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.28439	1.38466	9.26301
	A2_N->Y (RR)	0.27955	1.37216	9.18847
	B1->Y (FR)	0.29892	1.70246	13.62950
	B2->Y (FR)	0.21935	1.60951	13.44430
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.30639	1.28968	9.58504
	A2_N->Y (RR)	0.29636	1.25873	9.47330
	B1->Y (FR)	0.28936	1.52089	13.58740
	B2->Y (FR)	0.20994	1.42463	13.31720

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)	0.37411	1.12134	5.89935
	A2_N->Y (FF)	0.34889	1.04926	5.35686
	B1->Y (RF)	0.05137	0.57086	4.39672
	B2->Y (RF)	0.04697	0.58779	4.55470
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.50143	1.25887	6.33349
	A2_N->Y (FF)	0.47459	1.17799	5.86151
	B1->Y (RF)	0.05143	0.54490	4.57495
	B2->Y (RF)	0.04342	0.55661	4.77642
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.48349	1.21777	6.27013
	A2_N->Y (FF)	0.43250	1.11574	5.73555
	B1->Y (RF)	0.05039	0.49897	4.51590
	B2->Y (RF)	0.04369	0.51996	4.85216

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	0.00600	0.00586	0.00578
	A1_N	0.00392	0.00378	0.00369
	A2_N	0.00525	0.00502	0.00493
	A2_N	0.00350	0.00327	0.00318
	B1	0.00095	0.00090	0.00087
	B1	0.00413	0.00408	0.00406
	B2	0.00055	0.00047	0.00046
	B2	0.00328	0.00321	0.00319
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00907	0.00894	0.00888
	A1_N	0.00753	0.00739	0.00734
	A2_N	0.00813	0.00795	0.00783
	A2_N	0.00704	0.00685	0.00673
	B1	0.00214	0.00197	0.00195
	B1	0.00847	0.00829	0.00826
	B2	0.00108	0.00097	0.00096
	B2	0.00625	0.00613	0.00615
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01621	0.01598	0.01584
	A1_N	0.01435	0.01413	0.01400
	A2_N	0.01458	0.01421	0.01415
	A2_N	0.01331	0.01296	0.01289
	B1	0.00396	0.00363	0.00360
	B1	0.01674	0.01639	0.01642
	B2	0.00211	0.00187	0.00191
	B2	0.01264	0.01238	0.01239

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00321	0.00324	0.00327
	A1_N	0.00527	0.00535	0.00534
	A2_N	0.00322	0.00319	0.00320
	A2_N	0.00492	0.00493	0.00491
	B1	0.00374	0.00368	0.00360
	B1	0.00057	0.00048	0.00043
	B2	0.00325	0.00316	0.00310
	B2	0.00057	0.00046	0.00040
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00521	0.00551	0.00557
	A1_N	0.00667	0.00699	0.00701
	A2_N	0.00539	0.00555	0.00561
	A2_N	0.00638	0.00657	0.00661
	B1	0.00702	0.00686	0.00674
	B1	0.00068	0.00050	0.00039
	B2	0.00578	0.00559	0.00555
	B2	0.00070	0.00048	0.00038
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01090	0.01153	0.01171
	A1_N	0.01262	0.01324	0.01340
	A2_N	0.01061	0.01096	0.01124
	A2_N	0.01167	0.01210	0.01231
	B1	0.01393	0.01359	0.01346
	B1	0.00118	0.00076	0.00059
	B2	0.01149	0.01106	0.01107
	B2	0.00118	0.00068	0.00055

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)	0.00077	0.00078	0.00077
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00109	-0.00111	-0.00111
	(!A2_N * B1 * B2 * !Y)	0.00386	0.00372	0.00358
	(!A2_N * B1 * B2 * !Y)	0.00099	0.00083	0.00072
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00105	0.00106	0.00105
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00106	-0.00108	-0.00108
	(!A2_N * B1 * B2 * !Y)	0.00509	0.00494	0.00477
	(!A2_N * B1 * B2 * !Y)	0.00191	0.00177	0.00162
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00113	0.00112	0.00111
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00214	-0.00220	-0.00219
	(!A2_N * B1 * B2 * !Y)	0.00860	0.00829	0.00789
	(!A2_N * B1 * B2 * !Y)	0.00348	0.00317	0.00283

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)	-0.00077	-0.00077	-0.00077
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00112	0.00111	0.00111
	(!A2_N * B1 * B2 * !Y)	0.00114	0.00105	0.00105
	(!A2_N * B1 * B2 * !Y)	0.00400	0.00391	0.00390
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00105	-0.00105	-0.00104
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00108	0.00108	0.00108
	(!A2_N * B1 * B2 * !Y)	0.00191	0.00182	0.00180
	(!A2_N * B1 * B2 * !Y)	0.00505	0.00496	0.00494
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00111	-0.00112	-0.00111
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00218	0.00220	0.00219
	(!A2_N * B1 * B2 * !Y)	0.00433	0.00415	0.00414
	(!A2_N * B1 * B2 * !Y)	0.00939	0.00922	0.00921

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)	0.00093	0.00093	0.00093
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00069	-0.00069	-0.00069
	(!A1_N * B1 * B2 * !Y)	0.00315	0.00294	0.00281
	(!A1_N * B1 * B2 * !Y)	0.00061	0.00038	0.00027
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00106	0.00106	0.00106
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00069	-0.00069	-0.00069
	(!A1_N * B1 * B2 * !Y)	0.00424	0.00404	0.00386
	(!A1_N * B1 * B2 * !Y)	0.00151	0.00130	0.00113
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00154	0.00155	0.00155
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00140	-0.00140	-0.00140
	(!A1_N * B1 * B2 * !Y)	0.00692	0.00657	0.00626
	(!A1_N * B1 * B2 * !Y)	0.00236	0.00201	0.00171

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)	-0.00090	-0.00090	-0.00093
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00072	0.00072	0.00070
	(!A1_N * B1 * B2 * !Y)	0.00114	0.00101	0.00099
	(!A1_N * B1 * B2 * !Y)	0.00368	0.00355	0.00353
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00103	-0.00103	-0.00106
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00072	0.00071	0.00070
	(!A1_N * B1 * B2 * !Y)	0.00208	0.00191	0.00189
	(!A1_N * B1 * B2 * !Y)	0.00479	0.00463	0.00460
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00145	-0.00145	-0.00154
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00150	0.00149	0.00142
	(!A1_N * B1 * B2 * !Y)	0.00403	0.00381	0.00377
	(!A1_N * B1 * B2 * !Y)	0.00853	0.00833	0.00829

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)	0.00098	0.00099	0.00098
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00122	-0.00123	-0.00122
	(!A1_N * !A2_N * B2 * !Y)	0.00105	0.00105	0.00104
	(!A1_N * !A2_N * B2 * !Y)	-0.00117	-0.00120	-0.00119
	(!A1_N * !A2_N * !B2 * !Y)	0.00098	0.00099	0.00098
	(!A1_N * !A2_N * !B2 * !Y)	-0.00122	-0.00123	-0.00122
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00187	0.00189	0.00188
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00248	-0.00250	-0.00249
	(!A1_N * !A2_N * B2 * !Y)	0.00202	0.00202	0.00201
	(!A1_N * !A2_N * B2 * !Y)	-0.00238	-0.00244	-0.00242
	(!A1_N * !A2_N * !B2 * !Y)	0.00189	0.00189	0.00188
	(!A1_N * !A2_N * !B2 * !Y)	-0.00249	-0.00250	-0.00248
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00372	0.00376	0.00373
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00497	-0.00500	-0.00498
	(!A1_N * !A2_N * B2 * !Y)	0.00404	0.00403	0.00401
	(!A1_N * !A2_N * B2 * !Y)	-0.00475	-0.00486	-0.00483
	(!A1_N * !A2_N * !B2 * !Y)	0.00373	0.00378	0.00374
	(!A1_N * !A2_N * !B2 * !Y)	-0.00496	-0.00500	-0.00497

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)	-0.00097	-0.00099	-0.00098
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00123	0.00124	0.00123
	(!A1_N * !A2_N * B2 * !Y)	-0.00105	-0.00105	-0.00104
	(!A1_N * !A2_N * B2 * !Y)	0.00120	0.00120	0.00119
	(!A1_N * !A2_N * !B2 * !Y)	-0.00097	-0.00099	-0.00098
	(!A1_N * !A2_N * !B2 * !Y)	0.00122	0.00123	0.00123
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00184	-0.00189	-0.00188
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00250	0.00251	0.00249
	(!A1_N * !A2_N * B2 * !Y)	-0.00201	-0.00202	-0.00201
	(!A1_N * !A2_N * B2 * !Y)	0.00241	0.00244	0.00242
	(!A1_N * !A2_N * !B2 * !Y)	-0.00184	-0.00189	-0.00188
	(!A1_N * !A2_N * !B2 * !Y)	0.00250	0.00251	0.00249
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00366	-0.00376	-0.00373
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00502	0.00503	0.00500
	(!A1_N * !A2_N * B2 * !Y)	-0.00401	-0.00403	-0.00401
	(!A1_N * !A2_N * B2 * !Y)	0.00482	0.00486	0.00483
	(!A1_N * !A2_N * !B2 * !Y)	-0.00367	-0.00378	-0.00374
	(!A1_N * !A2_N * !B2 * !Y)	0.00501	0.00503	0.00499

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)	0.00048	0.00049	0.00047
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00145	-0.00146	-0.00148
	(!A1_N * !A2_N * B1 * !Y)	0.00104	0.00104	0.00104
	(!A1_N * !A2_N * B1 * !Y)	-0.00126	-0.00129	-0.00128
	(!A1_N * !A2_N * !B1 * !Y)	0.00098	0.00099	0.00098
	(!A1_N * !A2_N * !B1 * !Y)	-0.00130	-0.00132	-0.00131
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00081	0.00082	0.00078
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00282	-0.00285	-0.00289
	(!A1_N * !A2_N * B1 * !Y)	0.00201	0.00201	0.00200
	(!A1_N * !A2_N * B1 * !Y)	-0.00236	-0.00241	-0.00240
	(!A1_N * !A2_N * !B1 * !Y)	0.00187	0.00190	0.00188
	(!A1_N * !A2_N * !B1 * !Y)	-0.00245	-0.00247	-0.00246
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00154	0.00155	0.00148
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00577	-0.00583	-0.00591
	(!A1_N * !A2_N * B1 * !Y)	0.00400	0.00400	0.00398
	(!A1_N * !A2_N * B1 * !Y)	-0.00476	-0.00489	-0.00485
	(!A1_N * !A2_N * !B1 * !Y)	0.00373	0.00377	0.00374
	(!A1_N * !A2_N * !B1 * !Y)	-0.00499	-0.00503	-0.00500

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)	-0.00046	-0.00047	-0.00046
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00147	0.00148	0.00148
	(!A1_N * !A2_N * B1 * !Y)	-0.00103	-0.00104	-0.00104
	(!A1_N * !A2_N * B1 * !Y)	0.00128	0.00129	0.00128
	(!A1_N * !A2_N * !B1 * !Y)	-0.00095	-0.00099	-0.00098
	(!A1_N * !A2_N * !B1 * !Y)	0.00130	0.00132	0.00131
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00076	-0.00076	-0.00076
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00289	0.00291	0.00290
	(!A1_N * !A2_N * B1 * !Y)	-0.00201	-0.00201	-0.00200
	(!A1_N * !A2_N * B1 * !Y)	0.00241	0.00242	0.00240
	(!A1_N * !A2_N * !B1 * !Y)	-0.00183	-0.00190	-0.00188
	(!A1_N * !A2_N * !B1 * !Y)	0.00247	0.00249	0.00247
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00146	-0.00145	-0.00144
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00594	0.00594	0.00591
	(!A1_N * !A2_N * B1 * !Y)	-0.00400	-0.00400	-0.00398
	(!A1_N * !A2_N * B1 * !Y)	0.00488	0.00490	0.00485
	(!A1_N * !A2_N * !B1 * !Y)	-0.00364	-0.00377	-0.00374
	(!A1_N * !A2_N * !B1 * !Y)	0.00503	0.00505	0.00501

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2o_1	14.38560
sky130_fd_sc_hs__a2bb2o_2	15.98400
sky130_fd_sc_hs__a2bb2o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__a2bb2o_1	0.00212	0.00222	0.00232	0.00226	0.35591
sky130_fd_sc_hs__a2bb2o_2	0.00224	0.00232	0.00243	0.00264	0.67185
sky130_fd_sc_hs__a2bb2o_4	0.00245	0.00264	0.00433	0.00444	1.37917

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.00026	0.00032
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.00033	0.00042
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.00054	0.00067

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)	0.50610	1.80972	12.23650
	A2_N->X (FR)	0.47427	1.73137	11.60960
	B1->X (RR)	0.17481	1.19475	8.78589
	B2->X (RR)	0.16881	1.18272	8.59278
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.50779	1.66834	12.26470
	A2_N->X (FR)	0.47857	1.59176	11.64540
	B1->X (RR)	0.16714	1.05555	8.87631
	B2->X (RR)	0.16339	1.05578	8.73305
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.63647	1.68345	12.70300
	A2_N->X (FR)	0.60822	1.60955	12.19870
	B1->X (RR)	0.18391	0.96096	8.99704
	B2->X (RR)	0.17610	0.95595	8.82876

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)	0.48795	0.99202	3.34738
	A2_N->X (RF)	0.47845	0.96690	3.24658
	B1->X (FF)	0.48731	1.31043	6.93011
	B2->X (FF)	0.42090	1.23875	6.75598
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.62844	1.14375	3.51910
	A2_N->X (RF)	0.61938	1.11514	3.40929
	B1->X (FF)	0.62868	1.46043	7.29805
	B2->X (FF)	0.56238	1.38541	7.14670
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.58457	1.07199	3.52968
	A2_N->X (RF)	0.57315	1.05010	3.44191
	B1->X (FF)	0.60917	1.40692	7.33959
	B2->X (FF)	0.53158	1.32510	7.17056

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	0.00572	0.00579	0.00568
	A1_N	0.00760	0.00766	0.00760
	A2_N	0.00569	0.00568	0.00557
	A2_N	0.00718	0.00718	0.00707
	B1	0.00617	0.00618	0.00614
	B1	0.00300	0.00300	0.00299
	B2	0.00556	0.00550	0.00543
	B2	0.00300	0.00295	0.00289
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00754	0.00782	0.00780
	A1_N	0.00958	0.00985	0.00992
	A2_N	0.00761	0.00778	0.00774
	A2_N	0.00918	0.00935	0.00933
	B1	0.00809	0.00824	0.00827
	B1	0.00490	0.00506	0.00513
	B2	0.00760	0.00766	0.00764
	B2	0.00490	0.00498	0.00497
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01230	0.01288	0.01306
	A1_N	0.01389	0.01450	0.01467
	A2_N	0.01225	0.01269	0.01286
	A2_N	0.01344	0.01389	0.01421
	B1	0.01468	0.01499	0.01514
	B1	0.00879	0.00910	0.00928
	B2	0.01361	0.01376	0.01387
	B2	0.00878	0.00895	0.00915

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.00798	0.00786	0.00768
	A1_N	0.00609	0.00598	0.00579
	A2_N	0.00715	0.00701	0.00686
	A2_N	0.00561	0.00549	0.00532
	B1	0.00307	0.00315	0.00314
	B1	0.00624	0.00632	0.00628
	B2	0.00292	0.00294	0.00293
	B2	0.00551	0.00554	0.00551
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00963	0.00967	0.00966
	A1_N	0.00758	0.00771	0.00761
	A2_N	0.00881	0.00872	0.00878
	A2_N	0.00720	0.00727	0.00716
	B1	0.00465	0.00495	0.00503
	B1	0.00783	0.00814	0.00814
	B2	0.00442	0.00464	0.00519
	B2	0.00714	0.00737	0.00737
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01639	0.01693	0.01692
	A1_N	0.01470	0.01524	0.01520
	A2_N	0.01476	0.01532	0.01522
	A2_N	0.01414	0.01471	0.01470
	B1	0.00981	0.01041	0.01166
	B1	0.01568	0.01627	0.01637
	B2	0.00912	0.00965	0.01176
	B2	0.01401	0.01454	0.01462

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)	0.00084	0.00084	0.00083
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00103	-0.00105	-0.00105
	(!A2_N * B1 * B2 * X)	0.00370	0.00356	0.00342
	(!A2_N * B1 * B2 * X)	0.00094	0.00079	0.00068
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00087	0.00087	0.00086
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00109	-0.00111	-0.00111
	(!A2_N * B1 * B2 * X)	0.00379	0.00364	0.00350
	(!A2_N * B1 * B2 * X)	0.00087	0.00072	0.00060
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00098	0.00099	0.00099
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00117	-0.00119	-0.00119
	(!A2_N * B1 * B2 * X)	0.00508	0.00492	0.00474
	(!A2_N * B1 * B2 * X)	0.00181	0.00163	0.00148

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)	-0.00083	-0.00083	-0.00083
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00105	0.00105	0.00105
	(!A2_N * B1 * B2 * X)	0.00112	0.00104	0.00104
	(!A2_N * B1 * B2 * X)	0.00386	0.00379	0.00377
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00111	0.00111	0.00111
	(!A2_N * B1 * B2 * X)	0.00105	0.00096	0.00096
	(!A2_N * B1 * B2 * X)	0.00395	0.00387	0.00385
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00120	0.00119	0.00119
	(!A2_N * B1 * B2 * X)	0.00097	0.00086	0.00085
	(!A2_N * B1 * B2 * X)	0.00421	0.00410	0.00410

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)	0.00093	0.00093	0.00093
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00066	-0.00066	-0.00066
	(!A1_N * B1 * B2 * X)	0.00293	0.00273	0.00262
	(!A1_N * B1 * B2 * X)	0.00052	0.00033	0.00023
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00094	0.00094	0.00094
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00066	-0.00066	-0.00066
	(!A1_N * B1 * B2 * X)	0.00299	0.00278	0.00266
	(!A1_N * B1 * B2 * X)	0.00052	0.00030	0.00019
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00112	0.00112	0.00112
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1_N * B1 * B2 * X)	0.00427	0.00405	0.00389
	(!A1_N * B1 * B2 * X)	0.00138	0.00114	0.00100

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)	-0.00090	-0.00090	-0.00093
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00069	0.00069	0.00067
	(!A1_N * B1 * B2 * X)	0.00112	0.00101	0.00099
	(!A1_N * B1 * B2 * X)	0.00351	0.00339	0.00338
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00091	-0.00091	-0.00094
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00069	0.00069	0.00067
	(!A1_N * B1 * B2 * X)	0.00111	0.00099	0.00097
	(!A1_N * B1 * B2 * X)	0.00356	0.00345	0.00343
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00109	-0.00109	-0.00112
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00077	0.00077	0.00075
	(!A1_N * B1 * B2 * X)	0.00097	0.00082	0.00080
	(!A1_N * B1 * B2 * X)	0.00385	0.00370	0.00367

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)	0.00104	0.00103	0.00103
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00112	-0.00111	-0.00112
	(!A1_N * !A2_N * B2 * X)	0.00108	0.00108	0.00107
	(!A1_N * !A2_N * B2 * X)	-0.00107	-0.00110	-0.00109
	(!A1_N * !A2_N * !B2 * X)	0.00104	0.00104	0.00103
	(!A1_N * !A2_N * !B2 * X)	-0.00112	-0.00112	-0.00112
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00098	0.00099	0.00099
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00114	-0.00115	-0.00114
	(!A1_N * !A2_N * B2 * X)	0.00107	0.00106	0.00105
	(!A1_N * !A2_N * B2 * X)	-0.00109	-0.00111	-0.00110
	(!A1_N * !A2_N * !B2 * X)	0.00099	0.00099	0.00099
	(!A1_N * !A2_N * !B2 * X)	-0.00114	-0.00114	-0.00114
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00164	0.00165	0.00163
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00229	-0.00230	-0.00229
	(!A1_N * !A2_N * B2 * X)	0.00176	0.00176	0.00175
	(!A1_N * !A2_N * B2 * X)	-0.00218	-0.00224	-0.00222
	(!A1_N * !A2_N * !B2 * X)	0.00165	0.00166	0.00164
	(!A1_N * !A2_N * !B2 * X)	-0.00229	-0.00229	-0.00228

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)	-0.00102	-0.00103	-0.00103
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00112	0.00113	0.00112
	(!A1_N * !A2_N * B2 * X)	-0.00107	-0.00108	-0.00107
	(!A1_N * !A2_N * B2 * X)	0.00109	0.00110	0.00109
	(!A1_N * !A2_N * !B2 * X)	-0.00102	-0.00104	-0.00103
	(!A1_N * !A2_N * !B2 * X)	0.00112	0.00113	0.00112
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00096	-0.00099	-0.00099
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00114	0.00115	0.00114
	(!A1_N * !A2_N * B2 * X)	-0.00106	-0.00105	-0.00105
	(!A1_N * !A2_N * B2 * X)	0.00111	0.00111	0.00110
	(!A1_N * !A2_N * !B2 * X)	-0.00096	-0.00099	-0.00099
	(!A1_N * !A2_N * !B2 * X)	0.00114	0.00115	0.00114
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00160	-0.00165	-0.00163
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00230	0.00231	0.00229
	(!A1_N * !A2_N * B2 * X)	-0.00175	-0.00176	-0.00175
	(!A1_N * !A2_N * B2 * X)	0.00221	0.00224	0.00222
	(!A1_N * !A2_N * !B2 * X)	-0.00161	-0.00166	-0.00164
	(!A1_N * !A2_N * !B2 * X)	0.00229	0.00230	0.00229

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)	0.00043	0.00044	0.00043
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00126	-0.00127	-0.00129
	(!A1_N * !A2_N * B1 * X)	0.00083	0.00083	0.00082
	(!A1_N * !A2_N * B1 * X)	-0.00118	-0.00120	-0.00120
	(!A1_N * !A2_N * !B1 * X)	0.00078	0.00078	0.00078
	(!A1_N * !A2_N * !B1 * X)	-0.00122	-0.00122	-0.00122
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00044	0.00044	0.00043
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00139	-0.00140	-0.00141
	(!A1_N * !A2_N * B1 * X)	0.00104	0.00104	0.00103
	(!A1_N * !A2_N * B1 * X)	-0.00116	-0.00118	-0.00118
	(!A1_N * !A2_N * !B1 * X)	0.00097	0.00097	0.00097
	(!A1_N * !A2_N * !B1 * X)	-0.00122	-0.00122	-0.00122
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00075	0.00075	0.00071
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00258	-0.00258	-0.00262
	(!A1_N * !A2_N * B1 * X)	0.00175	0.00177	0.00175
	(!A1_N * !A2_N * B1 * X)	-0.00218	-0.00223	-0.00222
	(!A1_N * !A2_N * !B1 * X)	0.00163	0.00165	0.00164
	(!A1_N * !A2_N * !B1 * X)	-0.00227	-0.00229	-0.00228

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)	-0.00042	-0.00042	-0.00042
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00129	0.00129	0.00129
	(!A1_N * !A2_N * B1 * X)	-0.00082	-0.00083	-0.00082
	(!A1_N * !A2_N * B1 * X)	0.00119	0.00120	0.00120
	(!A1_N * !A2_N * !B1 * X)	-0.00076	-0.00078	-0.00078
	(!A1_N * !A2_N * !B1 * X)	0.00122	0.00123	0.00122
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00140	0.00141	0.00141
	(!A1_N * !A2_N * B1 * X)	-0.00103	-0.00104	-0.00103
	(!A1_N * !A2_N * B1 * X)	0.00117	0.00118	0.00118
	(!A1_N * !A2_N * !B1 * X)	-0.00095	-0.00097	-0.00097
	(!A1_N * !A2_N * !B1 * X)	0.00122	0.00123	0.00122
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00069	-0.00070	-0.00070
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00262	0.00263	0.00263
	(!A1_N * !A2_N * B1 * X)	-0.00175	-0.00176	-0.00175
	(!A1_N * !A2_N * B1 * X)	0.00222	0.00223	0.00222
	(!A1_N * !A2_N * !B1 * X)	-0.00159	-0.00165	-0.00164
	(!A1_N * !A2_N * !B1 * X)	0.00228	0.00230	0.00228

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311oi_1	11.18880
sky130_fd_sc_hs__a311oi_2	19.18080
sky130_fd_sc_hs__a311oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__a311oi_1	0.00270	0.00272	0.00263	0.00283	0.00271	0.09639
sky130_fd_sc_hs__a311oi_2	0.00508	0.00481	0.00463	0.00405	0.00401	0.18931
sky130_fd_sc_hs__a311oi_4	0.00981	0.00938	0.00937	0.00759	0.00783	0.35754

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311oi_1	0.00000	0.00010	0.00019
sky130_fd_sc_hs__a311oi_2	0.00000	0.00017	0.00029
sky130_fd_sc_hs__a311oi_4	0.00000	0.00035	0.00058

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)	0.54162	2.29215	13.22870
	A2->Y (FR)	0.67023	2.45023	13.52020
	A3->Y (FR)	0.73873	2.51655	13.50680
	B1->Y (FR)	0.60355	2.36847	13.69620
	C1->Y (FR)	0.58568	2.28026	13.10200
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.43233	1.96310	13.27780
	A2->Y (FR)	0.54522	2.08397	13.43340
	A3->Y (FR)	0.65108	2.20067	13.56610
	B1->Y (FR)	0.57640	2.10932	13.75470
	C1->Y (FR)	0.45146	1.92134	13.16310
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.39709	1.71708	13.05690
	A2->Y (FR)	0.51849	1.84931	13.28900
	A3->Y (FR)	0.63578	1.98814	13.51830
	B1->Y (FR)	0.55336	1.89017	13.72140
	C1->Y (FR)	0.43613	1.71121	13.12320

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.06880	0.62529	4.25073
	A2->Y (RF)	0.07998	0.62233	4.21320
	A3->Y (RF)	0.08379	0.58365	3.89729
	B1->Y (RF)	0.04265	0.48164	3.42407
	C1->Y (RF)	0.04022	0.47150	3.41201
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.05786	0.60307	4.52349
	A2->Y (RF)	0.06875	0.57976	4.30113
	A3->Y (RF)	0.07542	0.54800	3.96130
	B1->Y (RF)	0.04889	0.55627	4.35000
	C1->Y (RF)	0.04338	0.53692	4.32185
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.05583	0.56543	4.57805
	A2->Y (RF)	0.06785	0.54590	4.33119
	A3->Y (RF)	0.07420	0.50736	3.90491
	B1->Y (RF)	0.04525	0.50539	4.27361
	C1->Y (RF)	0.04218	0.50242	4.39247

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00051	0.00037	0.00034
	A1	0.00494	0.00479	0.00477
	A2	0.00093	0.00077	0.00074
	A2	0.00594	0.00577	0.00574
	A3	0.00110	0.00099	0.00095
	A3	0.00668	0.00657	0.00652
	B1	0.00119	0.00107	0.00103
	B1	0.00616	0.00602	0.00597
	C1	0.00114	0.00101	0.00097
	C1	0.00566	0.00552	0.00532
sky130_fd_sc_hs__a311oi_2	A1	0.00015	-0.00005	-0.00008
	A1	0.00818	0.00795	0.00794
	A2	0.00098	0.00075	0.00071
	A2	0.00999	0.00975	0.00973
	A3	0.00188	0.00168	0.00163
	A3	0.01186	0.01165	0.01161
	B1	0.00254	0.00242	0.00237
	B1	0.01051	0.01038	0.01032
	C1	0.00250	0.00233	0.00228
	C1	0.00946	0.00929	0.00921

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00011	-0.00051	-0.00054
	A1	0.01546	0.01509	0.01508
	A2	0.00149	0.00101	0.00096
	A2	0.01924	0.01874	0.01868
	A3	0.00311	0.00272	0.00263
	A3	0.02302	0.02261	0.02251
	B1	0.00445	0.00421	0.00414
	B1	0.02007	0.01983	0.01969
	C1	0.00439	0.00402	0.00394
	C1	0.01814	0.01780	0.01686

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00543	0.00531	0.00519
	A1	0.00112	0.00100	0.00090
	A2	0.00603	0.00594	0.00581
	A2	0.00112	0.00101	0.00090
	A3	0.00663	0.00654	0.00640
	A3	0.00109	0.00098	0.00088
	B1	0.00546	0.00538	0.00530
	B1	0.00044	0.00036	0.00029
	C1	0.00453	0.00451	0.00445
	C1	-0.00008	-0.00011	-0.00017

sky130_fd_sc_hs__a311oi_2	**A1**	0.00969	0.00943	0.00919
	A1	0.00198	0.00174	0.00151
	A2	0.01080	0.01060	0.01032
	A2	0.00201	0.00180	0.00157
	A3	0.01187	0.01167	0.01139
	A3	0.00199	0.00178	0.00156
	B1	0.00849	0.00834	0.00818
	B1	0.00041	0.00023	0.00011
	C1	0.00626	0.00626	0.00620
	C1	-0.00088	-0.00093	-0.00097
sky130_fd_sc_hs__a311oi_4	**A1**	0.01868	0.01811	0.01766
	A1	0.00365	0.00310	0.00275
	A2	0.02093	0.02052	0.02000
	A2	0.00366	0.00322	0.00282
	A3	0.02332	0.02292	0.02237
	A3	0.00361	0.00319	0.00277
	B1	0.01636	0.01603	0.01582
	B1	0.00054	0.00015	-0.00003
	C1	0.01231	0.01222	0.01223
	C1	-0.00184	-0.00198	-0.00197

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)**	0.00105	0.00105	0.00104
	(A2 * A3 * B1 * C1 * !Y)	-0.00114	-0.00117	-0.00116
	(A2 * A3 * B1 * !C1 * !Y)	0.00105	0.00105	0.00104
	(A2 * A3 * B1 * !C1 * !Y)	-0.00114	-0.00117	-0.00116
	(A2 * A3 * !B1 * C1 * !Y)	0.00104	0.00105	0.00104
	(A2 * A3 * !B1 * C1 * !Y)	-0.00108	-0.00112	-0.00111
	(A2 * !A3 * B1 * C1 * !Y)	0.00096	0.00096	0.00096
	(A2 * !A3 * B1 * C1 * !Y)	-0.00121	-0.00121	-0.00120
	(A2 * !A3 * B1 * !C1 * !Y)	0.00095	0.00096	0.00096
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00120	-0.00121	-0.00120
	(A2 * !A3 * !B1 * C1 * !Y)	0.00095	0.00096	0.00096
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00120	-0.00121	-0.00121
	(A2 * !A3 * !B1 * !C1 * Y)	0.00037	0.00037	0.00035
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00142	-0.00143	-0.00148
	(!A2 * B1 * C1 * !Y)	0.00098	0.00099	0.00098
	(!A2 * B1 * C1 * !Y)	-0.00121	-0.00121	-0.00120
	(!A2 * B1 * !C1 * !Y)	0.00098	0.00099	0.00098
	(!A2 * B1 * !C1 * !Y)	-0.00120	-0.00121	-0.00121
	(!A2 * !B1 * C1 * !Y)	0.00098	0.00099	0.00098
	(!A2 * !B1 * C1 * !Y)	-0.00120	-0.00121	-0.00121
	(!A2 * !B1 * !C1 * Y)	0.00038	0.00038	0.00037
	(!A2 * !B1 * !C1 * Y)	-0.00145	-0.00146	-0.00148

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00203	0.00203	0.00202
	(A2 * A3 * B1 * C1 * !Y)	-0.00237	-0.00244	-0.00241
	(A2 * A3 * B1 * !C1 * !Y)	0.00203	0.00203	0.00202
	(A2 * A3 * B1 * !C1 * !Y)	-0.00237	-0.00244	-0.00241
	(A2 * A3 * !B1 * C1 * !Y)	0.00202	0.00205	0.00203
	(A2 * A3 * !B1 * C1 * !Y)	-0.00226	-0.00234	-0.00232
	(A2 * !A3 * B1 * C1 * !Y)	0.00186	0.00187	0.00187
	(A2 * !A3 * B1 * C1 * !Y)	-0.00252	-0.00253	-0.00252
	(A2 * !A3 * B1 * !C1 * !Y)	0.00185	0.00186	0.00186
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00252	-0.00253	-0.00252
	(A2 * !A3 * !B1 * C1 * !Y)	0.00185	0.00186	0.00185
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00252	-0.00253	-0.00252
	(A2 * !A3 * !B1 * !C1 * Y)	0.00081	0.00081	0.00075
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00284	-0.00287	-0.00298
	(!A2 * B1 * C1 * !Y)	0.00191	0.00193	0.00192
	(!A2 * B1 * C1 * !Y)	-0.00252	-0.00253	-0.00252
	(!A2 * B1 * !C1 * !Y)	0.00192	0.00193	0.00192
	(!A2 * B1 * !C1 * !Y)	-0.00252	-0.00253	-0.00252
	(!A2 * !B1 * C1 * !Y)	0.00192	0.00192	0.00192
	(!A2 * !B1 * C1 * !Y)	-0.00252	-0.00253	-0.00252
	(!A2 * !B1 * !C1 * Y)	0.00080	0.00080	0.00077
	(!A2 * !B1 * !C1 * Y)	-0.00293	-0.00295	-0.00299

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00396	0.00398	0.00396
	(A2 * A3 * B1 * C1 * !Y)	-0.00469	-0.00483	-0.00478
	(A2 * A3 * B1 * !C1 * !Y)	0.00396	0.00398	0.00396
	(A2 * A3 * B1 * !C1 * !Y)	-0.00469	-0.00477	-0.00478
	(A2 * A3 * !B1 * C1 * !Y)	0.00397	0.00397	0.00396
	(A2 * A3 * !B1 * C1 * !Y)	-0.00448	-0.00462	-0.00459
	(A2 * !A3 * B1 * C1 * !Y)	0.00361	0.00365	0.00361
	(A2 * !A3 * B1 * C1 * !Y)	-0.00497	-0.00502	-0.00499
	(A2 * !A3 * B1 * !C1 * !Y)	0.00360	0.00361	0.00360
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00499	-0.00500	-0.00499
	(A2 * !A3 * !B1 * C1 * !Y)	0.00359	0.00361	0.00359
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00499	-0.00500	-0.00499
	(A2 * !A3 * !B1 * !C1 * Y)	0.00153	0.00154	0.00142
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00560	-0.00566	-0.00587
	(!A2 * B1 * C1 * !Y)	0.00375	0.00379	0.00375
	(!A2 * B1 * C1 * !Y)	-0.00500	-0.00502	-0.00499
	(!A2 * B1 * !C1 * !Y)	0.00375	0.00378	0.00374
	(!A2 * B1 * !C1 * !Y)	-0.00500	-0.00502	-0.00499
	(!A2 * !B1 * C1 * !Y)	0.00375	0.00378	0.00374
	(!A2 * !B1 * C1 * !Y)	-0.00498	-0.00501	-0.00499
	(!A2 * !B1 * !C1 * Y)	0.00153	0.00154	0.00148
	(!A2 * !B1 * !C1 * Y)	-0.00577	-0.00582	-0.00589

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)**	-0.00104	-0.00105	-0.00104
	(A2 * A3 * B1 * C1 * !Y)	0.00116	0.00117	0.00116
	(A2 * A3 * B1 * !C1 * !Y)	-0.00104	-0.00105	-0.00104
	(A2 * A3 * B1 * !C1 * !Y)	0.00116	0.00117	0.00116
	(A2 * A3 * !B1 * C1 * !Y)	-0.00104	-0.00104	-0.00104
	(A2 * A3 * !B1 * C1 * !Y)	0.00111	0.00112	0.00111
	(A2 * !A3 * B1 * C1 * !Y)	-0.00091	-0.00096	-0.00096
	(A2 * !A3 * B1 * C1 * !Y)	0.00121	0.00121	0.00121
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00090	-0.00096	-0.00096
	(A2 * !A3 * B1 * !C1 * !Y)	0.00121	0.00121	0.00121
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00090	-0.00096	-0.00096
	(A2 * !A3 * !B1 * C1 * !Y)	0.00120	0.00122	0.00121
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(A2 * !A3 * !B1 * !C1 * Y)	0.00148	0.00148	0.00148
	(!A2 * B1 * C1 * !Y)	-0.00097	-0.00099	-0.00098
	(!A2 * B1 * C1 * !Y)	0.00121	0.00122	0.00121
	(!A2 * B1 * !C1 * !Y)	-0.00096	-0.00099	-0.00098
	(!A2 * B1 * !C1 * !Y)	0.00121	0.00122	0.00121
	(!A2 * !B1 * C1 * !Y)	-0.00096	-0.00099	-0.00098
	(!A2 * !B1 * C1 * !Y)	0.00121	0.00122	0.00121
	(!A2 * !B1 * !C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * Y)	0.00148	0.00148	0.00148

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00202	-0.00203	-0.00202
	(A2 * A3 * B1 * C1 * !Y)	0.00242	0.00244	0.00241
	(A2 * A3 * B1 * !C1 * !Y)	-0.00202	-0.00203	-0.00202
	(A2 * A3 * B1 * !C1 * !Y)	0.00242	0.00244	0.00241
	(A2 * A3 * !B1 * C1 * !Y)	-0.00202	-0.00203	-0.00203
	(A2 * A3 * !B1 * C1 * !Y)	0.00233	0.00234	0.00232
	(A2 * !A3 * B1 * C1 * !Y)	-0.00177	-0.00187	-0.00187
	(A2 * !A3 * B1 * C1 * !Y)	0.00254	0.00254	0.00253
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00175	-0.00186	-0.00186
	(A2 * !A3 * B1 * !C1 * !Y)	0.00254	0.00255	0.00253
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00174	-0.00186	-0.00185
	(A2 * !A3 * !B1 * C1 * !Y)	0.00252	0.00255	0.00253
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00074	-0.00074	-0.00073
	(A2 * !A3 * !B1 * !C1 * Y)	0.00298	0.00300	0.00299
	(!A2 * B1 * C1 * !Y)	-0.00188	-0.00193	-0.00192
	(!A2 * B1 * C1 * !Y)	0.00254	0.00255	0.00253
	(!A2 * B1 * !C1 * !Y)	-0.00186	-0.00193	-0.00192
	(!A2 * B1 * !C1 * !Y)	0.00252	0.00255	0.00253
	(!A2 * !B1 * C1 * !Y)	-0.00186	-0.00192	-0.00192
	(!A2 * !B1 * C1 * !Y)	0.00252	0.00255	0.00253
	(!A2 * !B1 * !C1 * Y)	-0.00075	-0.00076	-0.00075
	(!A2 * !B1 * !C1 * Y)	0.00298	0.00300	0.00299

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00396	-0.00397	-0.00395
	(A2 * A3 * B1 * C1 * !Y)	0.00481	0.00483	0.00478
	(A2 * A3 * B1 * !C1 * !Y)	-0.00396	-0.00394	-0.00395
	(A2 * A3 * B1 * !C1 * !Y)	0.00481	0.00477	0.00478
	(A2 * A3 * !B1 * C1 * !Y)	-0.00397	-0.00397	-0.00396
	(A2 * A3 * !B1 * C1 * !Y)	0.00461	0.00462	0.00459
	(A2 * !A3 * B1 * C1 * !Y)	-0.00338	-0.00365	-0.00361
	(A2 * !A3 * B1 * C1 * !Y)	0.00497	0.00504	0.00500
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00337	-0.00361	-0.00360
	(A2 * !A3 * B1 * !C1 * !Y)	0.00503	0.00505	0.00500
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00333	-0.00361	-0.00359
	(A2 * !A3 * !B1 * C1 * !Y)	0.00502	0.00505	0.00500
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00142	-0.00141	-0.00140
	(A2 * !A3 * !B1 * !C1 * Y)	0.00593	0.00591	0.00590
	(!A2 * B1 * C1 * !Y)	-0.00365	-0.00379	-0.00375
	(!A2 * B1 * C1 * !Y)	0.00502	0.00504	0.00500
	(!A2 * B1 * !C1 * !Y)	-0.00363	-0.00378	-0.00374
	(!A2 * B1 * !C1 * !Y)	0.00501	0.00505	0.00500
	(!A2 * !B1 * C1 * !Y)	-0.00359	-0.00377	-0.00374
	(!A2 * !B1 * C1 * !Y)	0.00498	0.00501	0.00500
	(!A2 * !B1 * !C1 * Y)	-0.00146	-0.00145	-0.00144
	(!A2 * !B1 * !C1 * Y)	0.00594	0.00591	0.00590

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)**	0.00110	0.00109	0.00109
	(A1 * A3 * B1 * C1 * !Y)	-0.00114	-0.00117	-0.00116
	(A1 * A3 * B1 * !C1 * !Y)	0.00110	0.00109	0.00109
	(A1 * A3 * B1 * !C1 * !Y)	-0.00114	-0.00117	-0.00116
	(A1 * A3 * !B1 * C1 * !Y)	0.00109	0.00110	0.00108
	(A1 * A3 * !B1 * C1 * !Y)	-0.00108	-0.00111	-0.00111
	(A1 * !A3 * B1 * C1 * !Y)	0.00102	0.00103	0.00102
	(A1 * !A3 * B1 * C1 * !Y)	-0.00120	-0.00121	-0.00121
	(A1 * !A3 * B1 * !C1 * !Y)	0.00102	0.00102	0.00102
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00121	-0.00121	-0.00121
	(A1 * !A3 * !B1 * C1 * !Y)	0.00102	0.00103	0.00102
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00120	-0.00121	-0.00121
	(A1 * !A3 * !B1 * !C1 * Y)	0.00045	0.00045	0.00045
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00134	-0.00135	-0.00134
	(!A1 * A3 * B1 * !Y)	0.00103	0.00104	0.00103
	(!A1 * A3 * B1 * !Y)	-0.00120	-0.00121	-0.00121
	(!A1 * A3 * !B1 * C1 * !Y)	0.00103	0.00104	0.00103
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00120	-0.00121	-0.00121
	(!A1 * A3 * !B1 * !C1 * Y)	0.00089	0.00090	0.00089
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00134	-0.00135	-0.00135
	(!A1 * !A3 * B1 * !Y)	0.00068	0.00068	0.00068
	(!A1 * !A3 * B1 * !Y)	-0.00120	-0.00121	-0.00121
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00068	0.00068	0.00068
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00120	-0.00121	-0.00121
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00049	0.00049	0.00049
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00134	-0.00135	-0.00135

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00200	0.00200	0.00199
	(A1 * A3 * B1 * C1 * !Y)	-0.00234	-0.00240	-0.00239
	(A1 * A3 * B1 * !C1 * !Y)	0.00200	0.00200	0.00199
	(A1 * A3 * B1 * !C1 * !Y)	-0.00234	-0.00241	-0.00239
	(A1 * A3 * !B1 * C1 * !Y)	0.00200	0.00202	0.00199
	(A1 * A3 * !B1 * C1 * !Y)	-0.00223	-0.00230	-0.00229
	(A1 * !A3 * B1 * C1 * !Y)	0.00187	0.00188	0.00187
	(A1 * !A3 * B1 * C1 * !Y)	-0.00249	-0.00250	-0.00249
	(A1 * !A3 * B1 * !C1 * !Y)	0.00186	0.00188	0.00187
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00249	-0.00251	-0.00249
	(A1 * !A3 * !B1 * C1 * !Y)	0.00186	0.00188	0.00187
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00249	-0.00251	-0.00249
	(A1 * !A3 * !B1 * !C1 * Y)	0.00099	0.00100	0.00100
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00249	-0.00251	-0.00249
	(!A1 * A3 * B1 * !Y)	0.00188	0.00190	0.00189
	(!A1 * A3 * B1 * !Y)	-0.00248	-0.00250	-0.00249
	(!A1 * A3 * !B1 * C1 * !Y)	0.00188	0.00189	0.00189
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00248	-0.00250	-0.00249
	(!A1 * A3 * !B1 * !C1 * Y)	0.00187	0.00189	0.00188
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00249	-0.00251	-0.00250
	(!A1 * !A3 * B1 * !Y)	0.00119	0.00120	0.00119
	(!A1 * !A3 * B1 * !Y)	-0.00249	-0.00250	-0.00250
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00119	0.00120	0.00119
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00249	-0.00250	-0.00250
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00108	0.00108	0.00108
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00251	-0.00252	-0.00252

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00396	0.00399	0.00397
	(A1 * A3 * B1 * C1 * !Y)	-0.00463	-0.00479	-0.00475
	(A1 * A3 * B1 * !C1 * !Y)	0.00396	0.00399	0.00397
	(A1 * A3 * B1 * !C1 * !Y)	-0.00463	-0.00479	-0.00475
	(A1 * A3 * !B1 * C1 * !Y)	0.00398	0.00402	0.00397
	(A1 * A3 * !B1 * C1 * !Y)	-0.00444	-0.00459	-0.00456
	(A1 * !A3 * B1 * C1 * !Y)	0.00368	0.00371	0.00369
	(A1 * !A3 * B1 * C1 * !Y)	-0.00495	-0.00496	-0.00495
	(A1 * !A3 * B1 * !C1 * !Y)	0.00368	0.00371	0.00369
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00495	-0.00497	-0.00495
	(A1 * !A3 * !B1 * C1 * !Y)	0.00368	0.00371	0.00369
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00494	-0.00497	-0.00495
	(A1 * !A3 * !B1 * !C1 * Y)	0.00192	0.00193	0.00193
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00494	-0.00497	-0.00494
	(!A1 * A3 * B1 * !Y)	0.00374	0.00377	0.00374
	(!A1 * A3 * B1 * !Y)	-0.00495	-0.00497	-0.00495
	(!A1 * A3 * !B1 * C1 * !Y)	0.00374	0.00377	0.00374
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00495	-0.00497	-0.00495
	(!A1 * A3 * !B1 * !C1 * Y)	0.00373	0.00376	0.00374
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00496	-0.00498	-0.00496
	(!A1 * !A3 * B1 * !Y)	0.00228	0.00230	0.00228
	(!A1 * !A3 * B1 * !Y)	-0.00494	-0.00496	-0.00495
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00229	0.00230	0.00228
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00494	-0.00496	-0.00495
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00208	0.00208	0.00208
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00497	-0.00499	-0.00498

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)**	-0.00109	-0.00109	-0.00109
	(A1 * A3 * B1 * C1 * !Y)	0.00116	0.00117	0.00116
	(A1 * A3 * B1 * !C1 * !Y)	-0.00109	-0.00109	-0.00109
	(A1 * A3 * B1 * !C1 * !Y)	0.00116	0.00117	0.00116
	(A1 * A3 * !B1 * C1 * !Y)	-0.00108	-0.00108	-0.00108
	(A1 * A3 * !B1 * C1 * !Y)	0.00111	0.00111	0.00111
	(A1 * !A3 * B1 * C1 * !Y)	-0.00100	-0.00103	-0.00102
	(A1 * !A3 * B1 * C1 * !Y)	0.00121	0.00122	0.00121
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00099	-0.00102	-0.00102
	(A1 * !A3 * B1 * !C1 * !Y)	0.00121	0.00122	0.00121
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00099	-0.00103	-0.00102
	(A1 * !A3 * !B1 * C1 * !Y)	0.00121	0.00122	0.00121
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00043	-0.00043	-0.00044
	(A1 * !A3 * !B1 * !C1 * Y)	0.00137	0.00137	0.00135
	(!A1 * A3 * B1 * !Y)	-0.00100	-0.00104	-0.00103
	(!A1 * A3 * B1 * !Y)	0.00120	0.00122	0.00121
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00100	-0.00104	-0.00103
	(!A1 * A3 * !B1 * C1 * !Y)	0.00120	0.00122	0.00121
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00086	-0.00090	-0.00089
	(!A1 * A3 * !B1 * !C1 * Y)	0.00134	0.00136	0.00135
	(!A1 * !A3 * B1 * !Y)	-0.00068	-0.00068	-0.00068
	(!A1 * !A3 * B1 * !Y)	0.00120	0.00121	0.00121
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00068	-0.00068	-0.00068
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00120	0.00121	0.00121
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00049	-0.00049	-0.00049
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00135	0.00135	0.00135

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00199	-0.00199	-0.00199
	(A1 * A3 * B1 * C1 * !Y)	0.00240	0.00240	0.00239
	(A1 * A3 * B1 * !C1 * !Y)	-0.00199	-0.00200	-0.00199
	(A1 * A3 * B1 * !C1 * !Y)	0.00239	0.00241	0.00239
	(A1 * A3 * !B1 * C1 * !Y)	-0.00200	-0.00200	-0.00199
	(A1 * A3 * !B1 * C1 * !Y)	0.00230	0.00230	0.00229
	(A1 * !A3 * B1 * C1 * !Y)	-0.00180	-0.00188	-0.00187
	(A1 * !A3 * B1 * C1 * !Y)	0.00250	0.00253	0.00250
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00180	-0.00188	-0.00187
	(A1 * !A3 * B1 * !C1 * !Y)	0.00250	0.00253	0.00250
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00179	-0.00188	-0.00187
	(A1 * !A3 * !B1 * C1 * !Y)	0.00249	0.00253	0.00250
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00094	-0.00094	-0.00096
	(A1 * !A3 * !B1 * !C1 * Y)	0.00256	0.00256	0.00252
	(!A1 * A3 * B1 * !Y)	-0.00183	-0.00190	-0.00189
	(!A1 * A3 * B1 * !Y)	0.00248	0.00252	0.00250
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00183	-0.00189	-0.00189
	(!A1 * A3 * !B1 * C1 * !Y)	0.00248	0.00252	0.00250
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00182	-0.00189	-0.00188
	(!A1 * A3 * !B1 * !C1 * Y)	0.00249	0.00253	0.00251
	(!A1 * !A3 * B1 * !Y)	-0.00119	-0.00120	-0.00119
	(!A1 * !A3 * B1 * !Y)	0.00249	0.00250	0.00250
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00119	-0.00120	-0.00119
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00249	0.00250	0.00250
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00108	-0.00108	-0.00108
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00251	0.00252	0.00252

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00396	-0.00398	-0.00396
	(A1 * A3 * B1 * C1 * !Y)	0.00477	0.00479	0.00475
	(A1 * A3 * B1 * !C1 * !Y)	-0.00396	-0.00398	-0.00396
	(A1 * A3 * B1 * !C1 * !Y)	0.00477	0.00479	0.00475
	(A1 * A3 * !B1 * C1 * !Y)	-0.00398	-0.00398	-0.00397
	(A1 * A3 * !B1 * C1 * !Y)	0.00458	0.00459	0.00456
	(A1 * !A3 * B1 * C1 * !Y)	-0.00353	-0.00371	-0.00369
	(A1 * !A3 * B1 * C1 * !Y)	0.00495	0.00496	0.00496
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00352	-0.00371	-0.00369
	(A1 * !A3 * B1 * !C1 * !Y)	0.00495	0.00497	0.00496
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00351	-0.00371	-0.00369
	(A1 * !A3 * !B1 * C1 * !Y)	0.00494	0.00498	0.00496
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00181	-0.00182	-0.00186
	(A1 * !A3 * !B1 * !C1 * Y)	0.00507	0.00508	0.00499
	(!A1 * A3 * B1 * !Y)	-0.00366	-0.00377	-0.00374
	(!A1 * A3 * B1 * !Y)	0.00498	0.00500	0.00496
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00366	-0.00377	-0.00374
	(!A1 * A3 * !B1 * C1 * !Y)	0.00498	0.00500	0.00496
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00364	-0.00376	-0.00374
	(!A1 * A3 * !B1 * !C1 * Y)	0.00499	0.00501	0.00497
	(!A1 * !A3 * B1 * !Y)	-0.00228	-0.00230	-0.00228
	(!A1 * !A3 * B1 * !Y)	0.00495	0.00496	0.00497
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00229	-0.00230	-0.00228
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00494	0.00496	0.00497
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00208	-0.00208	-0.00208
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00497	0.00499	0.00500

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)**	0.00116	0.00116	0.00115
	(A1 * A2 * B1 * C1 * !Y)	-0.00114	-0.00118	-0.00117
	(A1 * A2 * B1 * !C1 * !Y)	0.00116	0.00116	0.00115
	(A1 * A2 * B1 * !C1 * !Y)	-0.00114	-0.00118	-0.00117
	(A1 * A2 * !B1 * C1 * !Y)	0.00116	0.00116	0.00115
	(A1 * A2 * !B1 * C1 * !Y)	-0.00110	-0.00112	-0.00113
	(A1 * !A2 * !B1 * !C1 * Y)	0.00098	0.00099	0.00098
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00132	-0.00133	-0.00132
	(!A2 * B1 * !Y)	0.00109	0.00110	0.00109
	(!A2 * B1 * !Y)	-0.00121	-0.00122	-0.00121
	(!A2 * !B1 * C1 * !Y)	0.00109	0.00110	0.00109
	(!A2 * !B1 * C1 * !Y)	-0.00121	-0.00122	-0.00121
	(!A1 * A2 * B1 * !Y)	0.00107	0.00108	0.00107
	(!A1 * A2 * B1 * !Y)	-0.00121	-0.00122	-0.00121
	(!A1 * A2 * !B1 * C1 * !Y)	0.00107	0.00108	0.00107
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00121	-0.00121	-0.00121
	(!A1 * A2 * !B1 * !C1 * Y)	0.00096	0.00097	0.00096
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00132	-0.00132	-0.00132
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00098	0.00099	0.00098
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00132	-0.00133	-0.00132

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00195	0.00196	0.00195
	(A1 * A2 * B1 * C1 * !Y)	-0.00228	-0.00236	-0.00234
	(A1 * A2 * B1 * !C1 * !Y)	0.00194	0.00196	0.00195
	(A1 * A2 * B1 * !C1 * !Y)	-0.00228	-0.00235	-0.00234
	(A1 * A2 * !B1 * C1 * !Y)	0.00196	0.00197	0.00195
	(A1 * A2 * !B1 * C1 * !Y)	-0.00219	-0.00226	-0.00225
	(A1 * !A2 * !B1 * !C1 * Y)	0.00182	0.00185	0.00183
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00242	-0.00245	-0.00244
	(!A2 * B1 * !Y)	0.00185	0.00185	0.00184
	(!A2 * B1 * !Y)	-0.00244	-0.00245	-0.00243
	(!A2 * !B1 * C1 * !Y)	0.00183	0.00185	0.00184
	(!A2 * !B1 * C1 * !Y)	-0.00242	-0.00244	-0.00243
	(!A1 * A2 * B1 * !Y)	0.00179	0.00180	0.00179
	(!A1 * A2 * B1 * !Y)	-0.00243	-0.00244	-0.00243
	(!A1 * A2 * !B1 * C1 * !Y)	0.00178	0.00180	0.00179
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00243	-0.00244	-0.00243
	(!A1 * A2 * !B1 * !C1 * Y)	0.00178	0.00180	0.00178
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00243	-0.00245	-0.00244
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00182	0.00185	0.00184
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00242	-0.00245	-0.00244

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00395	0.00398	0.00396
	(A1 * A2 * B1 * C1 * !Y)	-0.00462	-0.00476	-0.00473
	(A1 * A2 * B1 * !C1 * !Y)	0.00395	0.00398	0.00396
	(A1 * A2 * B1 * !C1 * !Y)	-0.00462	-0.00476	-0.00473
	(A1 * A2 * !B1 * C1 * !Y)	0.00398	0.00401	0.00396
	(A1 * A2 * !B1 * C1 * !Y)	-0.00443	-0.00454	-0.00454
	(A1 * !A2 * !B1 * !C1 * Y)	0.00367	0.00372	0.00368
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00492	-0.00495	-0.00492
	(!A2 * B1 * !Y)	0.00368	0.00372	0.00369
	(!A2 * B1 * !Y)	-0.00491	-0.00494	-0.00492
	(!A2 * !B1 * C1 * !Y)	0.00368	0.00372	0.00369
	(!A2 * !B1 * C1 * !Y)	-0.00491	-0.00494	-0.00492
	(!A1 * A2 * B1 * !Y)	0.00361	0.00362	0.00361
	(!A1 * A2 * B1 * !Y)	-0.00492	-0.00493	-0.00492
	(!A1 * A2 * !B1 * C1 * !Y)	0.00361	0.00363	0.00361
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00492	-0.00493	-0.00492
	(!A1 * A2 * !B1 * !C1 * Y)	0.00360	0.00359	0.00360
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00492	-0.00492	-0.00493
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00367	0.00371	0.00369
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00491	-0.00495	-0.00493

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)**	-0.00115	-0.00116	-0.00115
	(A1 * A2 * B1 * C1 * !Y)	0.00116	0.00118	0.00117
	(A1 * A2 * B1 * !C1 * !Y)	-0.00115	-0.00116	-0.00115
	(A1 * A2 * B1 * !C1 * !Y)	0.00116	0.00118	0.00117
	(A1 * A2 * !B1 * C1 * !Y)	-0.00115	-0.00115	-0.00115
	(A1 * A2 * !B1 * C1 * !Y)	0.00113	0.00112	0.00113
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00096	-0.00099	-0.00098
	(A1 * !A2 * !B1 * !C1 * Y)	0.00132	0.00133	0.00132
	(!A2 * B1 * !Y)	-0.00107	-0.00110	-0.00109
	(!A2 * B1 * !Y)	0.00121	0.00123	0.00121
	(!A2 * !B1 * C1 * !Y)	-0.00107	-0.00110	-0.00109
	(!A2 * !B1 * C1 * !Y)	0.00121	0.00122	0.00121
	(!A1 * A2 * B1 * !Y)	-0.00104	-0.00108	-0.00107
	(!A1 * A2 * B1 * !Y)	0.00122	0.00122	0.00121
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00104	-0.00108	-0.00107
	(!A1 * A2 * !B1 * C1 * !Y)	0.00121	0.00122	0.00121
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00093	-0.00097	-0.00096
	(!A1 * A2 * !B1 * !C1 * Y)	0.00132	0.00133	0.00132
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00096	-0.00099	-0.00098
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00132	0.00133	0.00132

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00194	-0.00195	-0.00195
	(A1 * A2 * B1 * C1 * !Y)	0.00233	0.00236	0.00234
	(A1 * A2 * B1 * !C1 * !Y)	-0.00194	-0.00195	-0.00195
	(A1 * A2 * B1 * !C1 * !Y)	0.00233	0.00235	0.00234
	(A1 * A2 * !B1 * C1 * !Y)	-0.00195	-0.00195	-0.00195
	(A1 * A2 * !B1 * C1 * !Y)	0.00224	0.00226	0.00225
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00180	-0.00185	-0.00183
	(A1 * !A2 * !B1 * !C1 * Y)	0.00245	0.00245	0.00244
	(!A2 * B1 * !Y)	-0.00180	-0.00185	-0.00184
	(!A2 * B1 * !Y)	0.00245	0.00245	0.00244
	(!A2 * !B1 * C1 * !Y)	-0.00180	-0.00185	-0.00184
	(!A2 * !B1 * C1 * !Y)	0.00245	0.00245	0.00244
	(!A1 * A2 * B1 * !Y)	-0.00172	-0.00180	-0.00179
	(!A1 * A2 * B1 * !Y)	0.00245	0.00245	0.00244
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00172	-0.00180	-0.00179
	(!A1 * A2 * !B1 * C1 * !Y)	0.00245	0.00245	0.00244
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00171	-0.00180	-0.00178
	(!A1 * A2 * !B1 * !C1 * Y)	0.00245	0.00246	0.00244
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00180	-0.00185	-0.00184
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00245	0.00246	0.00244

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00394	-0.00396	-0.00395
	(A1 * A2 * B1 * C1 * !Y)	0.00472	0.00476	0.00473
	(A1 * A2 * B1 * !C1 * !Y)	-0.00394	-0.00396	-0.00395
	(A1 * A2 * B1 * !C1 * !Y)	0.00472	0.00476	0.00473
	(A1 * A2 * !B1 * C1 * !Y)	-0.00397	-0.00396	-0.00396
	(A1 * A2 * !B1 * C1 * !Y)	0.00456	0.00454	0.00454
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00361	-0.00372	-0.00368
	(A1 * !A2 * !B1 * !C1 * Y)	0.00496	0.00497	0.00494
	(!A2 * B1 * !Y)	-0.00361	-0.00372	-0.00369
	(!A2 * B1 * !Y)	0.00496	0.00497	0.00494
	(!A2 * !B1 * C1 * !Y)	-0.00361	-0.00372	-0.00369
	(!A2 * !B1 * C1 * !Y)	0.00496	0.00497	0.00494
	(!A1 * A2 * B1 * !Y)	-0.00345	-0.00362	-0.00361
	(!A1 * A2 * B1 * !Y)	0.00496	0.00496	0.00494
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00345	-0.00363	-0.00361
	(!A1 * A2 * !B1 * C1 * !Y)	0.00496	0.00496	0.00494
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00344	-0.00359	-0.00360
	(!A1 * A2 * !B1 * !C1 * Y)	0.00497	0.00496	0.00494
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00361	-0.00371	-0.00369
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00496	0.00497	0.00494

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)**	0.00112	0.00112	0.00112
	(A1 * A2 * A3 * C1 * !Y)	-0.00090	-0.00089	-0.00089
	(A1 * A2 * A3 * !C1 * !Y)	0.00111	0.00112	0.00111
	(A1 * A2 * A3 * !C1 * !Y)	-0.00080	-0.00080	-0.00080
	(A1 * A2 * !A3 * C1 * !Y)	0.00110	0.00111	0.00110
	(A1 * A2 * !A3 * C1 * !Y)	-0.00114	-0.00117	-0.00116
	(A1 * !A2 * C1 * !Y)	0.00110	0.00111	0.00110
	(A1 * !A2 * C1 * !Y)	-0.00114	-0.00117	-0.00116
	(!A1 * C1 * !Y)	0.00110	0.00111	0.00110
	(!A1 * C1 * !Y)	-0.00114	-0.00117	-0.00116
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00113	0.00113	0.00113
	(A1 * A2 * A3 * C1 * !Y)	-0.00185	-0.00183	-0.00183
	(A1 * A2 * A3 * !C1 * !Y)	0.00115	0.00113	0.00112
	(A1 * A2 * A3 * !C1 * !Y)	-0.00170	-0.00168	-0.00168
	(A1 * A2 * !A3 * C1 * !Y)	0.00113	0.00113	0.00112
	(A1 * A2 * !A3 * C1 * !Y)	-0.00235	-0.00242	-0.00240
	(A1 * !A2 * C1 * !Y)	0.00113	0.00113	0.00112
	(A1 * !A2 * C1 * !Y)	-0.00235	-0.00242	-0.00240
	(!A1 * C1 * !Y)	0.00114	0.00113	0.00112
	(!A1 * C1 * !Y)	-0.00236	-0.00242	-0.00240
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00219	0.00218	0.00217
	(A1 * A2 * A3 * C1 * !Y)	-0.00362	-0.00359	-0.00359
	(A1 * A2 * A3 * !C1 * !Y)	0.00220	0.00217	0.00215
	(A1 * A2 * A3 * !C1 * !Y)	-0.00333	-0.00328	-0.00330
	(A1 * A2 * !A3 * C1 * !Y)	0.00218	0.00216	0.00214
	(A1 * A2 * !A3 * C1 * !Y)	-0.00463	-0.00477	-0.00473
	(A1 * !A2 * C1 * !Y)	0.00218	0.00216	0.00214
	(A1 * !A2 * C1 * !Y)	-0.00464	-0.00477	-0.00473
	(!A1 * C1 * !Y)	0.00218	0.00216	0.00214
	(!A1 * C1 * !Y)	-0.00464	-0.00477	-0.00474

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)	-0.00112	-0.00111	-0.00111
	(A1 * A2 * A3 * C1 * !Y)	0.00090	0.00089	0.00089
	(A1 * A2 * A3 * !C1 * !Y)	-0.00109	-0.00109	-0.00109
	(A1 * A2 * A3 * !C1 * !Y)	0.00083	0.00083	0.00083
	(A1 * A2 * !A3 * C1 * !Y)	-0.00110	-0.00111	-0.00110
	(A1 * A2 * !A3 * C1 * !Y)	0.00117	0.00117	0.00116
	(A1 * !A2 * C1 * !Y)	-0.00110	-0.00111	-0.00110
	(A1 * !A2 * C1 * !Y)	0.00116	0.00117	0.00116
	(!A1 * C1 * !Y)	-0.00110	-0.00111	-0.00110
	(!A1 * C1 * !Y)	0.00116	0.00117	0.00116
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00113	-0.00113	-0.00113
	(A1 * A2 * A3 * C1 * !Y)	0.00185	0.00183	0.00183
	(A1 * A2 * A3 * !C1 * !Y)	-0.00108	-0.00108	-0.00107
	(A1 * A2 * A3 * !C1 * !Y)	0.00173	0.00173	0.00175
	(A1 * A2 * !A3 * C1 * !Y)	-0.00113	-0.00113	-0.00112
	(A1 * A2 * !A3 * C1 * !Y)	0.00242	0.00242	0.00240
	(A1 * !A2 * C1 * !Y)	-0.00113	-0.00113	-0.00112
	(A1 * !A2 * C1 * !Y)	0.00242	0.00242	0.00240
	(!A1 * C1 * !Y)	-0.00112	-0.00113	-0.00112
	(!A1 * C1 * !Y)	0.00240	0.00242	0.00240

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00217	-0.00216	-0.00216
	(A1 * A2 * A3 * C1 * !Y)	0.00362	0.00359	0.00359
	(A1 * A2 * A3 * !C1 * !Y)	-0.00205	-0.00205	-0.00205
	(A1 * A2 * A3 * !C1 * !Y)	0.00341	0.00340	0.00342
	(A1 * A2 * !A3 * C1 * !Y)	-0.00216	-0.00216	-0.00214
	(A1 * A2 * !A3 * C1 * !Y)	0.00475	0.00477	0.00473
	(A1 * !A2 * C1 * !Y)	-0.00216	-0.00216	-0.00214
	(A1 * !A2 * C1 * !Y)	0.00475	0.00477	0.00473
	(!A1 * C1 * !Y)	-0.00215	-0.00216	-0.00214
	(!A1 * C1 * !Y)	0.00472	0.00477	0.00474

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)	0.00118	0.00118	0.00118
	(A1 * A2 * B1 * !Y)	-0.00076	-0.00075	-0.00075
	(A1 * A2 * A3 * !B1 * !Y)	0.00118	0.00118	0.00118
	(A1 * A2 * A3 * !B1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * B1 * !Y)	0.00118	0.00118	0.00118
	(A1 * !A2 * B1 * !Y)	-0.00076	-0.00076	-0.00076
	(!A1 * B1 * !Y)	0.00119	0.00118	0.00118
	(!A1 * B1 * !Y)	-0.00076	-0.00076	-0.00076
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00134	0.00134	0.00134
	(A1 * A2 * B1 * !Y)	-0.00148	-0.00148	-0.00148
	(A1 * A2 * A3 * !B1 * !Y)	0.00134	0.00134	0.00134
	(A1 * A2 * A3 * !B1 * !Y)	-0.00147	-0.00148	-0.00147
	(A1 * !A2 * B1 * !Y)	0.00134	0.00134	0.00134
	(A1 * !A2 * B1 * !Y)	-0.00148	-0.00148	-0.00148
	(!A1 * B1 * !Y)	0.00135	0.00134	0.00134
	(!A1 * B1 * !Y)	-0.00149	-0.00148	-0.00148
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00267	0.00267	0.00267
	(A1 * A2 * B1 * !Y)	-0.00295	-0.00293	-0.00293
	(A1 * A2 * A3 * !B1 * !Y)	0.00267	0.00267	0.00267
	(A1 * A2 * A3 * !B1 * !Y)	-0.00294	-0.00293	-0.00293
	(A1 * !A2 * B1 * !Y)	0.00267	0.00267	0.00267
	(A1 * !A2 * B1 * !Y)	-0.00294	-0.00294	-0.00294
	(!A1 * B1 * !Y)	0.00268	0.00267	0.00267
	(!A1 * B1 * !Y)	-0.00296	-0.00294	-0.00294

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)	-0.00115	-0.00115	-0.00118
	(A1 * A2 * B1 * !Y)	0.00079	0.00078	0.00076
	(A1 * A2 * A3 * !B1 * !Y)	-0.00103	-0.00103	-0.00116
	(A1 * A2 * A3 * !B1 * !Y)	0.00086	0.00086	0.00078
	(A1 * !A2 * B1 * !Y)	-0.00115	-0.00115	-0.00118
	(A1 * !A2 * B1 * !Y)	0.00079	0.00079	0.00076
	(!A1 * B1 * !Y)	-0.00115	-0.00115	-0.00118
	(!A1 * B1 * !Y)	0.00079	0.00079	0.00076
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00124	-0.00125	-0.00134
	(A1 * A2 * B1 * !Y)	0.00158	0.00157	0.00150
	(A1 * A2 * A3 * !B1 * !Y)	-0.00098	-0.00099	-0.00128
	(A1 * A2 * A3 * !B1 * !Y)	0.00175	0.00173	0.00153
	(A1 * !A2 * B1 * !Y)	-0.00124	-0.00124	-0.00134
	(A1 * !A2 * B1 * !Y)	0.00159	0.00158	0.00150
	(!A1 * B1 * !Y)	-0.00123	-0.00124	-0.00134
	(!A1 * B1 * !Y)	0.00158	0.00158	0.00150
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00251	-0.00251	-0.00267
	(A1 * A2 * B1 * !Y)	0.00310	0.00308	0.00297
	(A1 * A2 * A3 * !B1 * !Y)	-0.00196	-0.00199	-0.00255
	(A1 * A2 * A3 * !B1 * !Y)	0.00341	0.00341	0.00303
	(A1 * !A2 * B1 * !Y)	-0.00250	-0.00250	-0.00267
	(A1 * !A2 * B1 * !Y)	0.00312	0.00309	0.00298
	(!A1 * B1 * !Y)	-0.00248	-0.00250	-0.00267
	(!A1 * B1 * !Y)	0.00310	0.00310	0.00298

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311o_1	12.78720
sky130_fd_sc_hs__a311o_2	14.38560
sky130_fd_sc_hs__a311o_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__a311o_1	0.00245	0.00228	0.00230	0.00241	0.00252	0.36017
sky130_fd_sc_hs__a311o_2	0.00254	0.00250	0.00266	0.00274	0.00260	0.67137
sky130_fd_sc_hs__a311o_4	0.00459	0.00421	0.00448	0.00441	0.00447	1.26387

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	0.00016	0.00028
sky130_fd_sc_hs__a311o_2	0.00000	0.00021	0.00038
sky130_fd_sc_hs__a311o_4	0.00000	0.00043	0.00076

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)	0.20799	1.24644	8.75480
	A2->X (RR)	0.21799	1.26194	8.96118
	A3->X (RR)	0.22360	1.24241	8.95327
	B1->X (RR)	0.14812	1.16671	8.69059
	C1->X (RR)	0.14525	1.15283	8.62772
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.22264	1.15202	8.98112
	A2->X (RR)	0.23251	1.15923	9.14165
	A3->X (RR)	0.23901	1.13540	9.10454
	B1->X (RR)	0.14737	1.05420	8.86769
	C1->X (RR)	0.14447	1.04258	8.82055
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.26011	1.09770	9.09866
	A2->X (RR)	0.27558	1.11522	9.30847
	A3->X (RR)	0.28138	1.06527	9.18802
	B1->X (RR)	0.14857	0.94184	8.88201
	C1->X (RR)	0.14425	0.92702	8.82010

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.70602	1.55507	7.20881
	A2->X (FF)	0.81081	1.66681	7.38823
	A3->X (FF)	0.89550	1.75621	7.52615
	B1->X (FF)	0.83054	1.66998	7.55382
	C1->X (FF)	0.74763	1.52342	6.93121
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.99775	1.86447	7.68404
	A2->X (FF)	1.13568	2.00972	7.88539
	A3->X (FF)	1.24200	2.12147	8.03275
	B1->X (FF)	1.18137	2.04143	8.14179
	C1->X (FF)	1.08158	1.87674	7.57811
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.96966	1.78453	7.55901
	A2->X (FF)	1.10468	1.92365	7.75437
	A3->X (FF)	1.21250	2.04215	7.91016
	B1->X (FF)	1.14745	1.95630	8.03212
	C1->X (FF)	1.01644	1.75932	7.41091

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.00706	0.00694	0.00680
	A1	0.00328	0.00318	0.00304
	A2	0.00742	0.00734	0.00721
	A2	0.00328	0.00319	0.00308
	A3	0.00794	0.00783	0.00769
	A3	0.00326	0.00316	0.00304
	B1	0.00686	0.00680	0.00670
	B1	0.00265	0.00259	0.00249
	C1	0.00619	0.00607	0.00597
	C1	0.00221	0.00209	0.00200
sky130_fd_sc_hs__a311o_2	A1	0.00933	0.00936	0.00926
	A1	0.00522	0.00525	0.00519
	A2	0.00988	0.00994	0.00986
	A2	0.00521	0.00528	0.00526
	A3	0.01058	0.01063	0.01051
	A3	0.00521	0.00526	0.00520
	B1	0.00953	0.00961	0.00955
	B1	0.00465	0.00472	0.00474
	C1	0.00867	0.00872	0.00867
	C1	0.00417	0.00423	0.00418

sky130_fd_sc_hs__a311o_4	**A1**	0.01792	0.01809	0.01806
	A1	0.01086	0.01102	0.01102
	A2	0.01879	0.01906	0.01914
	A2	0.01078	0.01107	0.01127
	A3	0.02003	0.02031	0.02035
	A3	0.01087	0.01115	0.01132
	B1	0.01763	0.01764	0.01755
	B1	0.00945	0.00949	0.00949
	C1	0.01545	0.01552	0.01548
	C1	0.00805	0.00812	0.00807

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00232	0.00235	0.00285
	A1	0.00619	0.00621	0.00619
	A2	0.00276	0.00280	0.00282
	A2	0.00696	0.00700	0.00697
	A3	0.00299	0.00300	0.00340
	A3	0.00767	0.00768	0.00763
	B1	0.00291	0.00295	0.00352
	B1	0.00706	0.00709	0.00705
	C1	0.00248	0.00250	0.00307
	C1	0.00666	0.00668	0.00662

sky130_fd_sc_hs__a311o_2	**A1**	0.00422	0.00443	0.00505
	A1	0.00843	0.00862	0.00869
	A2	0.00459	0.00480	0.00516
	A2	0.00930	0.00952	0.00958
	A3	0.00478	0.00490	0.00498
	A3	0.01012	0.01024	0.01022
	B1	0.00453	0.00473	0.00543
	B1	0.00960	0.00975	0.00974
	C1	0.00450	0.00468	0.00663
	C1	0.00916	0.00930	0.00931
sky130_fd_sc_hs__a311o_4	**A1**	0.00848	0.00893	0.01046
	A1	0.01576	0.01621	0.01644
	A2	0.00964	0.01009	0.01038
	A2	0.01773	0.01820	0.01844
	A3	0.00987	0.01033	0.01157
	A3	0.01902	0.01947	0.01964
	B1	0.00947	0.00996	0.01286
	B1	0.01802	0.01844	0.01855
	C1	0.00996	0.01033	0.01163
	C1	0.01717	0.01753	0.01757

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)**	0.00097	0.00098	0.00097
	(A2 * A3 * B1 * C1 * X)	-0.00103	-0.00106	-0.00106
	(A2 * A3 * B1 * !C1 * X)	0.00097	0.00098	0.00097
	(A2 * A3 * B1 * !C1 * X)	-0.00103	-0.00106	-0.00106
	(A2 * A3 * !B1 * C1 * X)	0.00098	0.00097	0.00097
	(A2 * A3 * !B1 * C1 * X)	-0.00100	-0.00102	-0.00102
	(A2 * !A3 * B1 * C1 * X)	0.00090	0.00091	0.00090
	(A2 * !A3 * B1 * C1 * X)	-0.00111	-0.00111	-0.00110
	(A2 * !A3 * B1 * !C1 * X)	0.00090	0.00090	0.00090
	(A2 * !A3 * B1 * !C1 * X)	-0.00110	-0.00111	-0.00110
	(A2 * !A3 * !B1 * C1 * X)	0.00090	0.00091	0.00090
	(A2 * !A3 * !B1 * C1 * X)	-0.00110	-0.00111	-0.00110
	(A2 * !A3 * !B1 * !C1 * !X)	0.00044	0.00044	0.00042
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00125	-0.00127	-0.00130
	(!A2 * B1 * C1 * X)	0.00092	0.00093	0.00092
	(!A2 * B1 * C1 * X)	-0.00110	-0.00111	-0.00110
	(!A2 * B1 * !C1 * X)	0.00092	0.00093	0.00092
	(!A2 * B1 * !C1 * X)	-0.00110	-0.00111	-0.00110
	(!A2 * !B1 * C1 * X)	0.00092	0.00092	0.00092
	(!A2 * !B1 * C1 * X)	-0.00110	-0.00110	-0.00110
	(!A2 * !B1 * !C1 * !X)	0.00044	0.00044	0.00043
	(!A2 * !B1 * !C1 * !X)	-0.00129	-0.00129	-0.00131

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00104	0.00103	0.00103
	(A2 * A3 * B1 * C1 * X)	-0.00103	-0.00106	-0.00105
	(A2 * A3 * B1 * !C1 * X)	0.00104	0.00103	0.00103
	(A2 * A3 * B1 * !C1 * X)	-0.00103	-0.00106	-0.00105
	(A2 * A3 * !B1 * C1 * X)	0.00103	0.00104	0.00103
	(A2 * A3 * !B1 * C1 * X)	-0.00098	-0.00101	-0.00101
	(A2 * !A3 * B1 * C1 * X)	0.00095	0.00095	0.00095
	(A2 * !A3 * B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(A2 * !A3 * B1 * !C1 * X)	0.00094	0.00095	0.00095
	(A2 * !A3 * B1 * !C1 * X)	-0.00109	-0.00110	-0.00109
	(A2 * !A3 * !B1 * C1 * X)	0.00094	0.00095	0.00095
	(A2 * !A3 * !B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(A2 * !A3 * !B1 * !C1 * !X)	0.00038	0.00038	0.00035
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00129	-0.00130	-0.00135
	(!A2 * B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A2 * B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(!A2 * B1 * !C1 * X)	0.00097	0.00098	0.00097
	(!A2 * B1 * !C1 * X)	-0.00109	-0.00110	-0.00109
	(!A2 * !B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A2 * !B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(!A2 * !B1 * !C1 * !X)	0.00039	0.00039	0.00037
	(!A2 * !B1 * !C1 * !X)	-0.00133	-0.00134	-0.00136

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00176	0.00177	0.00175
	(A2 * A3 * B1 * C1 * X)	-0.00215	-0.00222	-0.00220
	(A2 * A3 * B1 * !C1 * X)	0.00176	0.00177	0.00175
	(A2 * A3 * B1 * !C1 * X)	-0.00215	-0.00221	-0.00220
	(A2 * A3 * !B1 * C1 * X)	0.00175	0.00177	0.00175
	(A2 * A3 * !B1 * C1 * X)	-0.00207	-0.00213	-0.00212
	(A2 * !A3 * B1 * C1 * X)	0.00159	0.00160	0.00160
	(A2 * !A3 * B1 * C1 * X)	-0.00229	-0.00230	-0.00229
	(A2 * !A3 * B1 * !C1 * X)	0.00159	0.00160	0.00159
	(A2 * !A3 * B1 * !C1 * X)	-0.00229	-0.00230	-0.00229
	(A2 * !A3 * !B1 * C1 * X)	0.00159	0.00160	0.00159
	(A2 * !A3 * !B1 * C1 * X)	-0.00229	-0.00230	-0.00229
	(A2 * !A3 * !B1 * !C1 * !X)	0.00071	0.00072	0.00065
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00255	-0.00258	-0.00268
	(!A2 * B1 * C1 * X)	0.00166	0.00167	0.00166
	(!A2 * B1 * C1 * X)	-0.00229	-0.00230	-0.00229
	(!A2 * B1 * !C1 * X)	0.00166	0.00167	0.00166
	(!A2 * B1 * !C1 * X)	-0.00229	-0.00231	-0.00229
	(!A2 * !B1 * C1 * X)	0.00166	0.00167	0.00166
	(!A2 * !B1 * C1 * X)	-0.00229	-0.00230	-0.00229
	(!A2 * !B1 * !C1 * !X)	0.00075	0.00076	0.00071
	(!A2 * !B1 * !C1 * !X)	-0.00261	-0.00263	-0.00269

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)**	-0.00097	-0.00097	-0.00097
	(A2 * A3 * B1 * C1 * X)	0.00106	0.00106	0.00106
	(A2 * A3 * B1 * !C1 * X)	-0.00097	-0.00097	-0.00097
	(A2 * A3 * B1 * !C1 * X)	0.00106	0.00106	0.00106
	(A2 * A3 * !B1 * C1 * X)	-0.00097	-0.00097	-0.00097
	(A2 * A3 * !B1 * C1 * X)	0.00102	0.00102	0.00102
	(A2 * !A3 * B1 * C1 * X)	-0.00087	-0.00091	-0.00090
	(A2 * !A3 * B1 * C1 * X)	0.00111	0.00111	0.00110
	(A2 * !A3 * B1 * !C1 * X)	-0.00086	-0.00090	-0.00090
	(A2 * !A3 * B1 * !C1 * X)	0.00110	0.00111	0.00110
	(A2 * !A3 * !B1 * C1 * X)	-0.00086	-0.00091	-0.00090
	(A2 * !A3 * !B1 * C1 * X)	0.00110	0.00111	0.00110
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00042	-0.00042	-0.00041
	(A2 * !A3 * !B1 * !C1 * !X)	0.00131	0.00131	0.00131
	(!A2 * B1 * C1 * X)	-0.00091	-0.00093	-0.00092
	(!A2 * B1 * C1 * X)	0.00111	0.00112	0.00110
	(!A2 * B1 * !C1 * X)	-0.00090	-0.00093	-0.00092
	(!A2 * B1 * !C1 * X)	0.00111	0.00112	0.00110
	(!A2 * !B1 * C1 * X)	-0.00090	-0.00092	-0.00092
	(!A2 * !B1 * C1 * X)	0.00110	0.00111	0.00110
	(!A2 * !B1 * !C1 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * !B1 * !C1 * !X)	0.00131	0.00131	0.00131

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00103	-0.00103	-0.00103
	(A2 * A3 * B1 * C1 * X)	0.00105	0.00106	0.00105
	(A2 * A3 * B1 * !C1 * X)	-0.00103	-0.00103	-0.00103
	(A2 * A3 * B1 * !C1 * X)	0.00105	0.00106	0.00105
	(A2 * A3 * !B1 * C1 * X)	-0.00103	-0.00103	-0.00103
	(A2 * A3 * !B1 * C1 * X)	0.00102	0.00101	0.00101
	(A2 * !A3 * B1 * C1 * X)	-0.00091	-0.00095	-0.00095
	(A2 * !A3 * B1 * C1 * X)	0.00110	0.00110	0.00110
	(A2 * !A3 * B1 * !C1 * X)	-0.00090	-0.00095	-0.00095
	(A2 * !A3 * B1 * !C1 * X)	0.00109	0.00110	0.00110
	(A2 * !A3 * !B1 * C1 * X)	-0.00089	-0.00095	-0.00095
	(A2 * !A3 * !B1 * C1 * X)	0.00109	0.00110	0.00110
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00035
	(A2 * !A3 * !B1 * !C1 * !X)	0.00135	0.00135	0.00136
	(!A2 * B1 * C1 * X)	-0.00095	-0.00098	-0.00097
	(!A2 * B1 * C1 * X)	0.00109	0.00110	0.00110
	(!A2 * B1 * !C1 * X)	-0.00095	-0.00098	-0.00097
	(!A2 * B1 * !C1 * X)	0.00109	0.00110	0.00110
	(!A2 * !B1 * C1 * X)	-0.00095	-0.00098	-0.00097
	(!A2 * !B1 * C1 * X)	0.00109	0.00110	0.00110
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00135	0.00136	0.00136

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00176	-0.00176	-0.00175
	(A2 * A3 * B1 * C1 * X)	0.00221	0.00222	0.00220
	(A2 * A3 * B1 * !C1 * X)	-0.00175	-0.00176	-0.00175
	(A2 * A3 * B1 * !C1 * X)	0.00219	0.00221	0.00220
	(A2 * A3 * !B1 * C1 * X)	-0.00175	-0.00175	-0.00175
	(A2 * A3 * !B1 * C1 * X)	0.00212	0.00213	0.00212
	(A2 * !A3 * B1 * C1 * X)	-0.00151	-0.00160	-0.00160
	(A2 * !A3 * B1 * C1 * X)	0.00231	0.00231	0.00230
	(A2 * !A3 * B1 * !C1 * X)	-0.00150	-0.00160	-0.00159
	(A2 * !A3 * B1 * !C1 * X)	0.00229	0.00232	0.00230
	(A2 * !A3 * !B1 * C1 * X)	-0.00150	-0.00160	-0.00159
	(A2 * !A3 * !B1 * C1 * X)	0.00229	0.00232	0.00230
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00065	-0.00065	-0.00065
	(A2 * !A3 * !B1 * !C1 * !X)	0.00269	0.00269	0.00269
	(!A2 * B1 * C1 * X)	-0.00162	-0.00167	-0.00166
	(!A2 * B1 * C1 * X)	0.00229	0.00232	0.00230
	(!A2 * B1 * !C1 * X)	-0.00162	-0.00167	-0.00166
	(!A2 * B1 * !C1 * X)	0.00229	0.00232	0.00230
	(!A2 * !B1 * C1 * X)	-0.00162	-0.00167	-0.00166
	(!A2 * !B1 * C1 * X)	0.00229	0.00232	0.00230
	(!A2 * !B1 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(!A2 * !B1 * !C1 * !X)	0.00269	0.00269	0.00269

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)**	0.00084	0.00084	0.00084
	(A1 * A3 * B1 * C1 * X)	-0.00107	-0.00109	-0.00109
	(A1 * A3 * B1 * !C1 * X)	0.00084	0.00084	0.00084
	(A1 * A3 * B1 * !C1 * X)	-0.00107	-0.00109	-0.00109
	(A1 * A3 * !B1 * C1 * X)	0.00083	0.00084	0.00083
	(A1 * A3 * !B1 * C1 * X)	-0.00101	-0.00104	-0.00104
	(A1 * !A3 * B1 * C1 * X)	0.00078	0.00079	0.00079
	(A1 * !A3 * B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * B1 * !C1 * X)	0.00079	0.00079	0.00079
	(A1 * !A3 * B1 * !C1 * X)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * !B1 * C1 * X)	0.00078	0.00079	0.00079
	(A1 * !A3 * !B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * !B1 * !C1 * !X)	0.00038	0.00038	0.00038
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00119	-0.00119	-0.00118
	(!A1 * A3 * B1 * X)	0.00079	0.00079	0.00079
	(!A1 * A3 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * A3 * !B1 * C1 * X)	0.00079	0.00079	0.00079
	(!A1 * A3 * !B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * A3 * !B1 * !C1 * !X)	0.00074	0.00074	0.00074
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00118	-0.00119	-0.00119
	(!A1 * !A3 * B1 * X)	0.00050	0.00050	0.00050
	(!A1 * !A3 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * !A3 * !B1 * C1 * X)	0.00050	0.00050	0.00050
	(!A1 * !A3 * !B1 * C1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00041	0.00041	0.00041
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00119	-0.00119	-0.00119

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00104	0.00103	0.00102
	(A1 * A3 * B1 * C1 * X)	-0.00103	-0.00106	-0.00105
	(A1 * A3 * B1 * !C1 * X)	0.00104	0.00103	0.00102
	(A1 * A3 * B1 * !C1 * X)	-0.00103	-0.00106	-0.00105
	(A1 * A3 * !B1 * C1 * X)	0.00102	0.00103	0.00102
	(A1 * A3 * !B1 * C1 * X)	-0.00098	-0.00101	-0.00101
	(A1 * !A3 * B1 * C1 * X)	0.00096	0.00096	0.00096
	(A1 * !A3 * B1 * C1 * X)	-0.00110	-0.00110	-0.00109
	(A1 * !A3 * B1 * !C1 * X)	0.00096	0.00097	0.00096
	(A1 * !A3 * B1 * !C1 * X)	-0.00110	-0.00110	-0.00109
	(A1 * !A3 * !B1 * C1 * X)	0.00095	0.00096	0.00096
	(A1 * !A3 * !B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(A1 * !A3 * !B1 * !C1 * !X)	0.00045	0.00045	0.00046
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00116	-0.00117	-0.00117
	(!A1 * A3 * B1 * X)	0.00096	0.00097	0.00097
	(!A1 * A3 * B1 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * A3 * !B1 * C1 * X)	0.00096	0.00097	0.00097
	(!A1 * A3 * !B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * A3 * !B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00116	-0.00117	-0.00117
	(!A1 * !A3 * B1 * X)	0.00062	0.00062	0.00062
	(!A1 * !A3 * B1 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * !A3 * !B1 * C1 * X)	0.00061	0.00062	0.00062
	(!A1 * !A3 * !B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00049	0.00049	0.00049
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00117	-0.00117	-0.00117

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00168	0.00168	0.00167
	(A1 * A3 * B1 * C1 * X)	-0.00213	-0.00220	-0.00218
	(A1 * A3 * B1 * !C1 * X)	0.00168	0.00168	0.00167
	(A1 * A3 * B1 * !C1 * X)	-0.00213	-0.00220	-0.00218
	(A1 * A3 * !B1 * C1 * X)	0.00167	0.00169	0.00167
	(A1 * A3 * !B1 * C1 * X)	-0.00206	-0.00212	-0.00211
	(A1 * !A3 * B1 * C1 * X)	0.00157	0.00158	0.00158
	(A1 * !A3 * B1 * C1 * X)	-0.00225	-0.00226	-0.00225
	(A1 * !A3 * B1 * !C1 * X)	0.00157	0.00158	0.00158
	(A1 * !A3 * B1 * !C1 * X)	-0.00225	-0.00226	-0.00225
	(A1 * !A3 * !B1 * C1 * X)	0.00158	0.00158	0.00158
	(A1 * !A3 * !B1 * C1 * X)	-0.00225	-0.00226	-0.00225
	(A1 * !A3 * !B1 * !C1 * !X)	0.00085	0.00086	0.00086
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00226	-0.00227	-0.00225
	(!A1 * A3 * B1 * X)	0.00158	0.00159	0.00158
	(!A1 * A3 * B1 * X)	-0.00225	-0.00226	-0.00225
	(!A1 * A3 * !B1 * C1 * X)	0.00158	0.00159	0.00158
	(!A1 * A3 * !B1 * C1 * X)	-0.00225	-0.00226	-0.00225
	(!A1 * A3 * !B1 * !C1 * !X)	0.00157	0.00159	0.00158
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00224	-0.00226	-0.00225
	(!A1 * !A3 * B1 * X)	0.00105	0.00105	0.00105
	(!A1 * !A3 * B1 * X)	-0.00225	-0.00226	-0.00225
	(!A1 * !A3 * !B1 * C1 * X)	0.00105	0.00105	0.00105
	(!A1 * !A3 * !B1 * C1 * X)	-0.00225	-0.00226	-0.00225
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00226	-0.00227	-0.00227

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)**	-0.00083	-0.00084	-0.00084
	(A1 * A3 * B1 * C1 * X)	0.00108	0.00109	0.00109
	(A1 * A3 * B1 * !C1 * X)	-0.00083	-0.00084	-0.00084
	(A1 * A3 * B1 * !C1 * X)	0.00108	0.00109	0.00109
	(A1 * A3 * !B1 * C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * A3 * !B1 * C1 * X)	0.00104	0.00104	0.00104
	(A1 * !A3 * B1 * C1 * X)	-0.00077	-0.00079	-0.00079
	(A1 * !A3 * B1 * C1 * X)	0.00114	0.00115	0.00114
	(A1 * !A3 * B1 * !C1 * X)	-0.00077	-0.00079	-0.00079
	(A1 * !A3 * B1 * !C1 * X)	0.00114	0.00115	0.00114
	(A1 * !A3 * !B1 * C1 * X)	-0.00076	-0.00079	-0.00079
	(A1 * !A3 * !B1 * C1 * X)	0.00114	0.00115	0.00114
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00035	-0.00036	-0.00036
	(A1 * !A3 * !B1 * !C1 * !X)	0.00121	0.00121	0.00119
	(!A1 * A3 * B1 * X)	-0.00076	-0.00079	-0.00079
	(!A1 * A3 * B1 * X)	0.00113	0.00115	0.00114
	(!A1 * A3 * !B1 * C1 * X)	-0.00076	-0.00079	-0.00079
	(!A1 * A3 * !B1 * C1 * X)	0.00113	0.00115	0.00114
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00071	-0.00074	-0.00074
	(!A1 * A3 * !B1 * !C1 * !X)	0.00118	0.00120	0.00119
	(!A1 * !A3 * B1 * X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A3 * B1 * X)	0.00114	0.00114	0.00114
	(!A1 * !A3 * !B1 * C1 * X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A3 * !B1 * C1 * X)	0.00113	0.00114	0.00114
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00119	0.00119	0.00119

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00102	-0.00103	-0.00102
	(A1 * A3 * B1 * C1 * X)	0.00105	0.00106	0.00105
	(A1 * A3 * B1 * !C1 * X)	-0.00102	-0.00103	-0.00102
	(A1 * A3 * B1 * !C1 * X)	0.00105	0.00106	0.00105
	(A1 * A3 * !B1 * C1 * X)	-0.00102	-0.00102	-0.00102
	(A1 * A3 * !B1 * C1 * X)	0.00101	0.00101	0.00101
	(A1 * !A3 * B1 * C1 * X)	-0.00093	-0.00096	-0.00096
	(A1 * !A3 * B1 * C1 * X)	0.00110	0.00110	0.00110
	(A1 * !A3 * B1 * !C1 * X)	-0.00093	-0.00097	-0.00096
	(A1 * !A3 * B1 * !C1 * X)	0.00110	0.00111	0.00110
	(A1 * !A3 * !B1 * C1 * X)	-0.00093	-0.00096	-0.00096
	(A1 * !A3 * !B1 * C1 * X)	0.00110	0.00110	0.00110
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00043	-0.00043	-0.00044
	(A1 * !A3 * !B1 * !C1 * !X)	0.00119	0.00120	0.00117
	(!A1 * A3 * B1 * X)	-0.00094	-0.00097	-0.00097
	(!A1 * A3 * B1 * X)	0.00109	0.00110	0.00110
	(!A1 * A3 * !B1 * C1 * X)	-0.00094	-0.00097	-0.00097
	(!A1 * A3 * !B1 * C1 * X)	0.00109	0.00110	0.00110
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00087	-0.00090	-0.00089
	(!A1 * A3 * !B1 * !C1 * !X)	0.00116	0.00118	0.00117
	(!A1 * !A3 * B1 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A3 * B1 * X)	0.00109	0.00110	0.00110
	(!A1 * !A3 * !B1 * C1 * X)	-0.00061	-0.00062	-0.00062
	(!A1 * !A3 * !B1 * C1 * X)	0.00109	0.00110	0.00110
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00049	-0.00049	-0.00049
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00117	0.00117	0.00118

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00168	-0.00168	-0.00167
	(A1 * A3 * B1 * C1 * X)	0.00219	0.00220	0.00218
	(A1 * A3 * B1 * !C1 * X)	-0.00168	-0.00168	-0.00167
	(A1 * A3 * B1 * !C1 * X)	0.00219	0.00220	0.00218
	(A1 * A3 * !B1 * C1 * X)	-0.00167	-0.00167	-0.00167
	(A1 * A3 * !B1 * C1 * X)	0.00212	0.00212	0.00211
	(A1 * !A3 * B1 * C1 * X)	-0.00153	-0.00158	-0.00158
	(A1 * !A3 * B1 * C1 * X)	0.00225	0.00228	0.00226
	(A1 * !A3 * B1 * !C1 * X)	-0.00153	-0.00158	-0.00158
	(A1 * !A3 * B1 * !C1 * X)	0.00225	0.00228	0.00226
	(A1 * !A3 * !B1 * C1 * X)	-0.00153	-0.00158	-0.00158
	(A1 * !A3 * !B1 * C1 * X)	0.00225	0.00228	0.00226
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00080	-0.00080	-0.00083
	(A1 * !A3 * !B1 * !C1 * !X)	0.00232	0.00232	0.00228
	(!A1 * A3 * B1 * X)	-0.00154	-0.00159	-0.00158
	(!A1 * A3 * B1 * X)	0.00227	0.00228	0.00226
	(!A1 * A3 * !B1 * C1 * X)	-0.00154	-0.00159	-0.00158
	(!A1 * A3 * !B1 * C1 * X)	0.00227	0.00228	0.00226
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00154	-0.00159	-0.00158
	(!A1 * A3 * !B1 * !C1 * !X)	0.00227	0.00228	0.00226
	(!A1 * !A3 * B1 * X)	-0.00105	-0.00105	-0.00105
	(!A1 * !A3 * B1 * X)	0.00226	0.00227	0.00226
	(!A1 * !A3 * !B1 * C1 * X)	-0.00105	-0.00105	-0.00105
	(!A1 * !A3 * !B1 * C1 * X)	0.00225	0.00227	0.00226
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00094	-0.00094	-0.00094
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00229	0.00228	0.00227

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)**	0.00093	0.00092	0.00092
	(A1 * A2 * B1 * C1 * X)	-0.00105	-0.00108	-0.00107
	(A1 * A2 * B1 * !C1 * X)	0.00093	0.00092	0.00092
	(A1 * A2 * B1 * !C1 * X)	-0.00105	-0.00108	-0.00107
	(A1 * A2 * !B1 * C1 * X)	0.00092	0.00093	0.00092
	(A1 * A2 * !B1 * C1 * X)	-0.00100	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !C1 * !X)	0.00075	0.00076	0.00075
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00124	-0.00124	-0.00124
	(!A2 * B1 * X)	0.00087	0.00088	0.00088
	(!A2 * B1 * X)	-0.00111	-0.00111	-0.00111
	(!A2 * !B1 * C1 * X)	0.00088	0.00088	0.00088
	(!A2 * !B1 * C1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * A2 * B1 * X)	0.00086	0.00087	0.00086
	(!A1 * A2 * B1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * A2 * !B1 * C1 * X)	0.00085	0.00086	0.00085
	(!A1 * A2 * !B1 * C1 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * A2 * !B1 * !C1 * !X)	0.00073	0.00074	0.00073
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00123	-0.00124	-0.00124
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00075	0.00076	0.00075
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00124	-0.00124	-0.00124

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00118	0.00118	0.00117
	(A1 * A2 * B1 * C1 * X)	-0.00102	-0.00105	-0.00105
	(A1 * A2 * B1 * !C1 * X)	0.00118	0.00118	0.00117
	(A1 * A2 * B1 * !C1 * X)	-0.00101	-0.00105	-0.00105
	(A1 * A2 * !B1 * C1 * X)	0.00117	0.00118	0.00117
	(A1 * A2 * !B1 * C1 * X)	-0.00098	-0.00100	-0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00129	-0.00130	-0.00130
	(!A2 * B1 * X)	0.00110	0.00112	0.00111
	(!A2 * B1 * X)	-0.00108	-0.00109	-0.00108
	(!A2 * !B1 * C1 * X)	0.00111	0.00111	0.00111
	(!A2 * !B1 * C1 * X)	-0.00108	-0.00109	-0.00108
	(!A1 * A2 * B1 * X)	0.00109	0.00109	0.00109
	(!A1 * A2 * B1 * X)	-0.00108	-0.00108	-0.00108
	(!A1 * A2 * !B1 * C1 * X)	0.00110	0.00109	0.00109
	(!A1 * A2 * !B1 * C1 * X)	-0.00108	-0.00108	-0.00108
	(!A1 * A2 * !B1 * !C1 * !X)	0.00088	0.00089	0.00088
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00129	-0.00130	-0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00129	-0.00130	-0.00130

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00194	0.00194	0.00193
	(A1 * A2 * B1 * C1 * X)	-0.00206	-0.00212	-0.00211
	(A1 * A2 * B1 * !C1 * X)	0.00194	0.00194	0.00193
	(A1 * A2 * B1 * !C1 * X)	-0.00206	-0.00212	-0.00211
	(A1 * A2 * !B1 * C1 * X)	0.00193	0.00195	0.00193
	(A1 * A2 * !B1 * C1 * X)	-0.00199	-0.00205	-0.00204
	(A1 * !A2 * !B1 * !C1 * !X)	0.00161	0.00162	0.00161
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00240	-0.00241	-0.00240
	(!A2 * B1 * X)	0.00184	0.00185	0.00184
	(!A2 * B1 * X)	-0.00219	-0.00219	-0.00218
	(!A2 * !B1 * C1 * X)	0.00183	0.00184	0.00184
	(!A2 * !B1 * C1 * X)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * B1 * X)	0.00179	0.00180	0.00180
	(!A1 * A2 * B1 * X)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * !B1 * C1 * X)	0.00180	0.00180	0.00180
	(!A1 * A2 * !B1 * C1 * X)	-0.00218	-0.00219	-0.00218
	(!A1 * A2 * !B1 * !C1 * !X)	0.00158	0.00159	0.00158
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00240	-0.00241	-0.00240
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00161	0.00162	0.00161
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00240	-0.00241	-0.00240

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)**	-0.00093	-0.00092	-0.00092
	(A1 * A2 * B1 * C1 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * B1 * !C1 * X)	-0.00093	-0.00092	-0.00092
	(A1 * A2 * B1 * !C1 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * !B1 * C1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * A2 * !B1 * C1 * X)	0.00103	0.00103	0.00103
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00073	-0.00076	-0.00075
	(A1 * !A2 * !B1 * !C1 * !X)	0.00124	0.00125	0.00124
	(!A2 * B1 * X)	-0.00086	-0.00088	-0.00088
	(!A2 * B1 * X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * C1 * X)	-0.00086	-0.00088	-0.00088
	(!A2 * !B1 * C1 * X)	0.00111	0.00112	0.00111
	(!A1 * A2 * B1 * X)	-0.00083	-0.00086	-0.00086
	(!A1 * A2 * B1 * X)	0.00111	0.00112	0.00111
	(!A1 * A2 * !B1 * C1 * X)	-0.00083	-0.00086	-0.00085
	(!A1 * A2 * !B1 * C1 * X)	0.00111	0.00112	0.00111
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00070	-0.00074	-0.00073
	(!A1 * A2 * !B1 * !C1 * !X)	0.00124	0.00124	0.00124
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00073	-0.00076	-0.00075
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00124	0.00125	0.00124

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00117	-0.00118	-0.00117
	(A1 * A2 * B1 * C1 * X)	0.00104	0.00105	0.00105
	(A1 * A2 * B1 * !C1 * X)	-0.00117	-0.00118	-0.00117
	(A1 * A2 * B1 * !C1 * X)	0.00103	0.00105	0.00105
	(A1 * A2 * !B1 * C1 * X)	-0.00117	-0.00117	-0.00117
	(A1 * A2 * !B1 * C1 * X)	0.00101	0.00100	0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00088	-0.00090	-0.00090
	(A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A2 * B1 * X)	-0.00109	-0.00112	-0.00111
	(!A2 * B1 * X)	0.00109	0.00110	0.00109
	(!A2 * !B1 * C1 * X)	-0.00109	-0.00111	-0.00111
	(!A2 * !B1 * C1 * X)	0.00109	0.00110	0.00109
	(!A1 * A2 * B1 * X)	-0.00106	-0.00109	-0.00109
	(!A1 * A2 * B1 * X)	0.00109	0.00109	0.00109
	(!A1 * A2 * !B1 * C1 * X)	-0.00106	-0.00109	-0.00109
	(!A1 * A2 * !B1 * C1 * X)	0.00109	0.00109	0.00109
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00084	-0.00089	-0.00088
	(!A1 * A2 * !B1 * !C1 * !X)	0.00130	0.00130	0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00088	-0.00090	-0.00090
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00131	0.00130

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00193	-0.00194	-0.00193
	(A1 * A2 * B1 * C1 * X)	0.00210	0.00212	0.00211
	(A1 * A2 * B1 * !C1 * X)	-0.00193	-0.00194	-0.00193
	(A1 * A2 * B1 * !C1 * X)	0.00210	0.00212	0.00211
	(A1 * A2 * !B1 * C1 * X)	-0.00192	-0.00193	-0.00193
	(A1 * A2 * !B1 * C1 * X)	0.00203	0.00205	0.00204
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00158	-0.00162	-0.00161
	(A1 * !A2 * !B1 * !C1 * !X)	0.00242	0.00242	0.00241
	(!A2 * B1 * X)	-0.00181	-0.00185	-0.00184
	(!A2 * B1 * X)	0.00220	0.00220	0.00219
	(!A2 * !B1 * C1 * X)	-0.00181	-0.00184	-0.00184
	(!A2 * !B1 * C1 * X)	0.00220	0.00220	0.00219
	(!A1 * A2 * B1 * X)	-0.00175	-0.00180	-0.00180
	(!A1 * A2 * B1 * X)	0.00220	0.00220	0.00219
	(!A1 * A2 * !B1 * C1 * X)	-0.00175	-0.00180	-0.00180
	(!A1 * A2 * !B1 * C1 * X)	0.00220	0.00220	0.00219
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00153	-0.00159	-0.00158
	(!A1 * A2 * !B1 * !C1 * !X)	0.00242	0.00242	0.00241
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00157	-0.00162	-0.00161
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00241	0.00242	0.00241

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)**	0.00096	0.00096	0.00095
	(A1 * A2 * A3 * C1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * A3 * !C1 * X)	0.00095	0.00096	0.00095
	(A1 * A2 * A3 * !C1 * X)	-0.00073	-0.00074	-0.00074
	(A1 * A2 * !A3 * C1 * X)	0.00094	0.00094	0.00094
	(A1 * A2 * !A3 * C1 * X)	-0.00104	-0.00107	-0.00106
	(A1 * !A2 * C1 * X)	0.00094	0.00094	0.00094
	(A1 * !A2 * C1 * X)	-0.00104	-0.00107	-0.00106
	(!A1 * C1 * X)	0.00094	0.00095	0.00094
	(!A1 * C1 * X)	-0.00104	-0.00107	-0.00106
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00112	0.00113	0.00113
	(A1 * A2 * A3 * C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * A3 * !C1 * X)	0.00114	0.00112	0.00112
	(A1 * A2 * A3 * !C1 * X)	-0.00075	-0.00073	-0.00074
	(A1 * A2 * !A3 * C1 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * !A3 * C1 * X)	-0.00103	-0.00106	-0.00106
	(A1 * !A2 * C1 * X)	0.00111	0.00111	0.00111
	(A1 * !A2 * C1 * X)	-0.00103	-0.00105	-0.00106
	(!A1 * C1 * X)	0.00111	0.00111	0.00111
	(!A1 * C1 * X)	-0.00104	-0.00106	-0.00106
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00177	0.00177	0.00176
	(A1 * A2 * A3 * C1 * X)	-0.00175	-0.00174	-0.00173
	(A1 * A2 * A3 * !C1 * X)	0.00175	0.00175	0.00175
	(A1 * A2 * A3 * !C1 * X)	-0.00157	-0.00158	-0.00158
	(A1 * A2 * !A3 * C1 * X)	0.00174	0.00175	0.00174
	(A1 * A2 * !A3 * C1 * X)	-0.00218	-0.00223	-0.00221
	(A1 * !A2 * C1 * X)	0.00174	0.00175	0.00174
	(A1 * !A2 * C1 * X)	-0.00218	-0.00223	-0.00221
	(!A1 * C1 * X)	0.00174	0.00175	0.00174
	(!A1 * C1 * X)	-0.00218	-0.00223	-0.00221

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)	-0.00094	-0.00095	-0.00095
	(A1 * A2 * A3 * C1 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * A3 * !C1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * A3 * !C1 * X)	0.00077	0.00076	0.00076
	(A1 * A2 * !A3 * C1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * A2 * !A3 * C1 * X)	0.00106	0.00107	0.00106
	(A1 * !A2 * C1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * !A2 * C1 * X)	0.00105	0.00107	0.00106
	(!A1 * C1 * X)	-0.00094	-0.00095	-0.00094
	(!A1 * C1 * X)	0.00106	0.00107	0.00106
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * A2 * A3 * C1 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * A3 * !C1 * X)	-0.00110	-0.00110	-0.00110
	(A1 * A2 * A3 * !C1 * X)	0.00076	0.00076	0.00076
	(A1 * A2 * !A3 * C1 * X)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * !A3 * C1 * X)	0.00106	0.00107	0.00106
	(A1 * !A2 * C1 * X)	-0.00111	-0.00111	-0.00111
	(A1 * !A2 * C1 * X)	0.00106	0.00105	0.00106
	(!A1 * C1 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * C1 * X)	0.00106	0.00107	0.00106

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00176	-0.00175	-0.00175
	(A1 * A2 * A3 * C1 * X)	0.00175	0.00174	0.00173
	(A1 * A2 * A3 * !C1 * X)	-0.00171	-0.00171	-0.00170
	(A1 * A2 * A3 * !C1 * X)	0.00163	0.00163	0.00164
	(A1 * A2 * !A3 * C1 * X)	-0.00173	-0.00175	-0.00174
	(A1 * A2 * !A3 * C1 * X)	0.00220	0.00223	0.00221
	(A1 * !A2 * C1 * X)	-0.00173	-0.00175	-0.00174
	(A1 * !A2 * C1 * X)	0.00220	0.00223	0.00221
	(!A1 * C1 * X)	-0.00173	-0.00175	-0.00174
	(!A1 * C1 * X)	0.00221	0.00223	0.00221

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)	0.00117	0.00117	0.00117
	(A1 * A2 * B1 * X)	-0.00068	-0.00068	-0.00067
	(A1 * A2 * A3 * !B1 * X)	0.00117	0.00117	0.00117
	(A1 * A2 * A3 * !B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * B1 * X)	0.00117	0.00117	0.00117
	(A1 * !A2 * B1 * X)	-0.00068	-0.00068	-0.00067
	(!A1 * B1 * X)	0.00117	0.00117	0.00117
	(!A1 * B1 * X)	-0.00068	-0.00068	-0.00067
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00115	0.00115	0.00115
	(A1 * A2 * B1 * X)	-0.00071	-0.00071	-0.00071
	(A1 * A2 * A3 * !B1 * X)	0.00115	0.00115	0.00115
	(A1 * A2 * A3 * !B1 * X)	-0.00070	-0.00071	-0.00071
	(A1 * !A2 * B1 * X)	0.00115	0.00115	0.00115
	(A1 * !A2 * B1 * X)	-0.00071	-0.00071	-0.00071
	(!A1 * B1 * X)	0.00115	0.00115	0.00115
	(!A1 * B1 * X)	-0.00071	-0.00071	-0.00071
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00188	0.00188	0.00188
	(A1 * A2 * B1 * X)	-0.00150	-0.00150	-0.00150
	(A1 * A2 * A3 * !B1 * X)	0.00188	0.00188	0.00188
	(A1 * A2 * A3 * !B1 * X)	-0.00150	-0.00150	-0.00150
	(A1 * !A2 * B1 * X)	0.00187	0.00188	0.00188
	(A1 * !A2 * B1 * X)	-0.00150	-0.00150	-0.00150
	(!A1 * B1 * X)	0.00188	0.00188	0.00188
	(!A1 * B1 * X)	-0.00150	-0.00150	-0.00150

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)	-0.00114	-0.00115	-0.00117
	(A1 * A2 * B1 * X)	0.00070	0.00070	0.00068
	(A1 * A2 * A3 * !B1 * X)	-0.00103	-0.00104	-0.00114
	(A1 * A2 * A3 * !B1 * X)	0.00077	0.00077	0.00069
	(A1 * !A2 * B1 * X)	-0.00114	-0.00114	-0.00117
	(A1 * !A2 * B1 * X)	0.00070	0.00070	0.00068
	(!A1 * B1 * X)	-0.00113	-0.00114	-0.00117
	(!A1 * B1 * X)	0.00070	0.00070	0.00068
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00113	-0.00113	-0.00115
	(A1 * A2 * B1 * X)	0.00074	0.00074	0.00072
	(A1 * A2 * A3 * !B1 * X)	-0.00102	-0.00103	-0.00113
	(A1 * A2 * A3 * !B1 * X)	0.00081	0.00081	0.00073
	(A1 * !A2 * B1 * X)	-0.00113	-0.00113	-0.00115
	(A1 * !A2 * B1 * X)	0.00074	0.00074	0.00072
	(!A1 * B1 * X)	-0.00113	-0.00113	-0.00115
	(!A1 * B1 * X)	0.00074	0.00074	0.00072
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00178	-0.00179	-0.00187
	(A1 * A2 * B1 * X)	0.00160	0.00159	0.00152
	(A1 * A2 * A3 * !B1 * X)	-0.00155	-0.00157	-0.00182
	(A1 * A2 * A3 * !B1 * X)	0.00173	0.00174	0.00155
	(A1 * !A2 * B1 * X)	-0.00178	-0.00179	-0.00187
	(A1 * !A2 * B1 * X)	0.00160	0.00160	0.00152
	(!A1 * B1 * X)	-0.00178	-0.00179	-0.00187
	(!A1 * B1 * X)	0.00160	0.00160	0.00152

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31oi_1	9.59040
sky130_fd_sc_hs__a31oi_2	14.38560
sky130_fd_sc_hs__a31oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__a31oi_1	0.00265	0.00270	0.00260	0.00272	0.15737
sky130_fd_sc_hs__a31oi_2	0.00504	0.00482	0.00515	0.00404	0.31104
sky130_fd_sc_hs__a31oi_4	0.01022	0.00949	0.00945	0.00818	0.56515

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.00010	0.00014
sky130_fd_sc_hs__a31oi_2	0.00000	0.00018	0.00024
sky130_fd_sc_hs__a31oi_4	0.00000	0.00035	0.00049

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)	0.28389	1.86950	13.37100
	A2->Y (FR)	0.36214	1.96861	13.59910
	A3->Y (FR)	0.40423	2.01239	13.59750
	B1->Y (FR)	0.33906	1.88268	13.21510
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.24548	1.64063	13.53960
	A2->Y (FR)	0.30509	1.70265	13.58260
	A3->Y (FR)	0.35982	1.74869	13.50850
	B1->Y (FR)	0.21898	1.56296	13.20160
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.23525	1.46039	13.32900
	A2->Y (FR)	0.30442	1.52472	13.31990
	A3->Y (FR)	0.37360	1.61306	13.51740
	B1->Y (FR)	0.28813	1.47369	13.17540

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.06249	0.67107	5.13966
	A2->Y (RF)	0.07393	0.66441	5.01969
	A3->Y (RF)	0.07724	0.62296	4.61929
	B1->Y (RF)	0.03689	0.50571	4.02691
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.05744	0.64302	5.46491
	A2->Y (RF)	0.06588	0.60633	5.05387
	A3->Y (RF)	0.07199	0.57747	4.68783
	B1->Y (RF)	0.04264	0.59953	5.29555
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.05850	0.60975	5.59829
	A2->Y (RF)	0.07071	0.58212	5.18803
	A3->Y (RF)	0.07656	0.54071	4.67051
	B1->Y (RF)	0.03997	0.52874	5.04999

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00009	-0.00001	-0.00003
	A1	0.00372	0.00361	0.00359
	A2	0.00053	0.00040	0.00037
	A2	0.00475	0.00462	0.00460
	A3	0.00071	0.00063	0.00059
	A3	0.00551	0.00543	0.00540
	B1	0.00069	0.00058	0.00055
	B1	0.00488	0.00478	0.00473
sky130_fd_sc_hs__a31oi_2	A1	0.00020	0.00003	0.00001
	A1	0.00692	0.00676	0.00676
	A2	0.00098	0.00079	0.00077
	A2	0.00871	0.00852	0.00849
	A3	0.00162	0.00145	0.00141
	A3	0.01058	0.01040	0.01033
	B1	0.00237	0.00221	0.00218
	B1	0.00905	0.00891	0.00882
sky130_fd_sc_hs__a31oi_4	A1	-0.00074	-0.00106	-0.00103
	A1	0.01313	0.01279	0.01283
	A2	0.00130	0.00084	0.00081
	A2	0.01724	0.01670	0.01672
	A3	0.00290	0.00252	0.00246
	A3	0.02100	0.02063	0.02050
	B1	0.00414	0.00380	0.00375
	B1	0.01806	0.01771	0.01760

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00436	0.00425	0.00421
	A1	0.00081	0.00071	0.00065
	A2	0.00499	0.00491	0.00489
	A2	0.00080	0.00072	0.00065
	A3	0.00556	0.00549	0.00540
	A3	0.00075	0.00066	0.00061
	B1	0.00427	0.00426	0.00422
	B1	-0.00000	-0.00003	-0.00007
sky130_fd_sc_hs__a31oi_2	A1	0.00767	0.00745	0.00748
	A1	0.00110	0.00086	0.00075
	A2	0.00875	0.00857	0.00847
	A2	0.00109	0.00090	0.00078
	A3	0.01008	0.00992	0.00985
	A3	0.00110	0.00090	0.00078
	B1	0.00595	0.00593	0.00609
	B1	-0.00092	-0.00096	-0.00097
sky130_fd_sc_hs__a31oi_4	A1	0.01561	0.01507	0.01501
	A1	0.00207	0.00150	0.00135
	A2	0.01780	0.01742	0.01738
	A2	0.00202	0.00162	0.00140
	A3	0.02019	0.01981	0.01953
	A3	0.00199	0.00160	0.00138
	B1	0.01245	0.01233	0.01257
	B1	-0.00189	-0.00204	-0.00196

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)**	0.00103	0.00103	0.00102
	(A2 * A3 * B1 * !Y)	-0.00114	-0.00117	-0.00116
	(A2 * !A3 * B1 * !Y)	0.00094	0.00094	0.00094
	(A2 * !A3 * B1 * !Y)	-0.00120	-0.00121	-0.00120
	(A2 * !A3 * !B1 * Y)	0.00039	0.00039	0.00036
	(A2 * !A3 * !B1 * Y)	-0.00140	-0.00141	-0.00145
	(!A2 * B1 * !Y)	0.00096	0.00097	0.00097
	(!A2 * B1 * !Y)	-0.00120	-0.00121	-0.00120
	(!A2 * !B1 * Y)	0.00039	0.00039	0.00038
	(!A2 * !B1 * Y)	-0.00143	-0.00144	-0.00146
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00206	0.00207	0.00206
	(A2 * A3 * B1 * !Y)	-0.00233	-0.00238	-0.00237
	(A2 * !A3 * B1 * !Y)	0.00187	0.00188	0.00188
	(A2 * !A3 * B1 * !Y)	-0.00246	-0.00247	-0.00246
	(A2 * !A3 * !B1 * Y)	0.00075	0.00076	0.00070
	(A2 * !A3 * !B1 * Y)	-0.00285	-0.00289	-0.00299
	(!A2 * B1 * !Y)	0.00193	0.00195	0.00194
	(!A2 * B1 * !Y)	-0.00246	-0.00248	-0.00246
	(!A2 * !B1 * Y)	0.00073	0.00074	0.00071
	(!A2 * !B1 * Y)	-0.00294	-0.00297	-0.00301
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00426	0.00429	0.00426
	(A2 * A3 * B1 * !Y)	-0.00455	-0.00471	-0.00467
	(A2 * !A3 * B1 * !Y)	0.00388	0.00391	0.00390
	(A2 * !A3 * B1 * !Y)	-0.00484	-0.00487	-0.00485
	(A2 * !A3 * !B1 * Y)	0.00160	0.00159	0.00146
	(A2 * !A3 * !B1 * Y)	-0.00572	-0.00574	-0.00599
	(!A2 * B1 * !Y)	0.00403	0.00405	0.00406
	(!A2 * B1 * !Y)	-0.00483	-0.00485	-0.00485
	(!A2 * !B1 * Y)	0.00161	0.00161	0.00154
	(!A2 * !B1 * Y)	-0.00589	-0.00591	-0.00602

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)	-0.00102	-0.00103	-0.00102
	(A2 * A3 * B1 * !Y)	0.00116	0.00117	0.00116
	(A2 * !A3 * B1 * !Y)	-0.00089	-0.00094	-0.00094
	(A2 * !A3 * B1 * !Y)	0.00121	0.00121	0.00121
	(A2 * !A3 * !B1 * Y)	-0.00036	-0.00036	-0.00036
	(A2 * !A3 * !B1 * Y)	0.00147	0.00146	0.00146
	(!A2 * B1 * !Y)	-0.00095	-0.00097	-0.00097
	(!A2 * B1 * !Y)	0.00121	0.00122	0.00121
	(!A2 * !B1 * Y)	-0.00038	-0.00037	-0.00037
	(!A2 * !B1 * Y)	0.00148	0.00146	0.00146
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00206	-0.00206	-0.00206
	(A2 * A3 * B1 * !Y)	0.00239	0.00238	0.00237
	(A2 * !A3 * B1 * !Y)	-0.00177	-0.00188	-0.00188
	(A2 * !A3 * B1 * !Y)	0.00248	0.00249	0.00247
	(A2 * !A3 * !B1 * Y)	-0.00068	-0.00068	-0.00068
	(A2 * !A3 * !B1 * Y)	0.00300	0.00302	0.00301
	(!A2 * B1 * !Y)	-0.00187	-0.00195	-0.00194
	(!A2 * B1 * !Y)	0.00246	0.00249	0.00247
	(!A2 * !B1 * Y)	-0.00069	-0.00070	-0.00069
	(!A2 * !B1 * Y)	0.00300	0.00303	0.00301

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00426	-0.00428	-0.00426
	(A2 * A3 * B1 * !Y)	0.00470	0.00471	0.00467
	(A2 * !A3 * B1 * !Y)	-0.00363	-0.00391	-0.00390
	(A2 * !A3 * B1 * !Y)	0.00484	0.00491	0.00487
	(A2 * !A3 * !B1 * Y)	-0.00146	-0.00147	-0.00146
	(A2 * !A3 * !B1 * Y)	0.00602	0.00605	0.00602
	(!A2 * B1 * !Y)	-0.00392	-0.00405	-0.00406
	(!A2 * B1 * !Y)	0.00485	0.00492	0.00487
	(!A2 * !B1 * Y)	-0.00151	-0.00151	-0.00150
	(!A2 * !B1 * Y)	0.00603	0.00606	0.00603

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)**	0.00111	0.00110	0.00109
	(A1 * A3 * B1 * !Y)	-0.00114	-0.00117	-0.00116
	(A1 * !A3 * B1 * !Y)	0.00103	0.00104	0.00103
	(A1 * !A3 * B1 * !Y)	-0.00121	-0.00121	-0.00120
	(A1 * !A3 * !B1 * Y)	0.00046	0.00046	0.00046
	(A1 * !A3 * !B1 * Y)	-0.00134	-0.00135	-0.00134
	(!A1 * A3 * B1 * !Y)	0.00104	0.00104	0.00104
	(!A1 * A3 * B1 * !Y)	-0.00120	-0.00121	-0.00120
	(!A1 * A3 * !B1 * Y)	0.00090	0.00090	0.00090
	(!A1 * A3 * !B1 * Y)	-0.00134	-0.00135	-0.00134
	(!A1 * !A3 * B1 * !Y)	0.00069	0.00069	0.00069
	(!A1 * !A3 * B1 * !Y)	-0.00120	-0.00121	-0.00120
	(!A1 * !A3 * !B1 * Y)	0.00050	0.00050	0.00050
	(!A1 * !A3 * !B1 * Y)	-0.00135	-0.00135	-0.00135

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00190	0.00190	0.00190
	(A1 * A3 * B1 * !Y)	-0.00233	-0.00241	-0.00239
	(A1 * !A3 * B1 * !Y)	0.00177	0.00179	0.00178
	(A1 * !A3 * B1 * !Y)	-0.00248	-0.00249	-0.00248
	(A1 * !A3 * !B1 * Y)	0.00090	0.00091	0.00090
	(A1 * !A3 * !B1 * Y)	-0.00248	-0.00250	-0.00249
	(!A1 * A3 * B1 * !Y)	0.00178	0.00178	0.00178
	(!A1 * A3 * B1 * !Y)	-0.00247	-0.00249	-0.00248
	(!A1 * A3 * !B1 * Y)	0.00176	0.00177	0.00176
	(!A1 * A3 * !B1 * Y)	-0.00248	-0.00250	-0.00249
	(!A1 * !A3 * B1 * !Y)	0.00109	0.00110	0.00110
	(!A1 * !A3 * B1 * !Y)	-0.00247	-0.00248	-0.00248
	(!A1 * !A3 * !B1 * Y)	0.00098	0.00098	0.00098
	(!A1 * !A3 * !B1 * Y)	-0.00250	-0.00251	-0.00251
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00405	0.00406	0.00404
	(A1 * A3 * B1 * !Y)	-0.00467	-0.00483	-0.00478
	(A1 * !A3 * B1 * !Y)	0.00373	0.00376	0.00374
	(A1 * !A3 * B1 * !Y)	-0.00497	-0.00500	-0.00498
	(A1 * !A3 * !B1 * Y)	0.00195	0.00197	0.00197
	(A1 * !A3 * !B1 * Y)	-0.00501	-0.00505	-0.00501
	(!A1 * A3 * B1 * !Y)	0.00382	0.00385	0.00382
	(!A1 * A3 * B1 * !Y)	-0.00498	-0.00500	-0.00497
	(!A1 * A3 * !B1 * Y)	0.00377	0.00380	0.00378
	(!A1 * A3 * !B1 * Y)	-0.00502	-0.00504	-0.00502
	(!A1 * !A3 * B1 * !Y)	0.00240	0.00241	0.00240
	(!A1 * !A3 * B1 * !Y)	-0.00497	-0.00499	-0.00498
	(!A1 * !A3 * !B1 * Y)	0.00214	0.00215	0.00214
	(!A1 * !A3 * !B1 * Y)	-0.00505	-0.00506	-0.00505

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)	-0.00109	-0.00110	-0.00109
	(A1 * A3 * B1 * !Y)	0.00116	0.00117	0.00116
	(A1 * !A3 * B1 * !Y)	-0.00100	-0.00104	-0.00103
	(A1 * !A3 * B1 * !Y)	0.00121	0.00122	0.00121
	(A1 * !A3 * !B1 * Y)	-0.00043	-0.00044	-0.00045
	(A1 * !A3 * !B1 * Y)	0.00137	0.00138	0.00135
	(!A1 * A3 * B1 * !Y)	-0.00101	-0.00104	-0.00104
	(!A1 * A3 * B1 * !Y)	0.00120	0.00122	0.00121
	(!A1 * A3 * !B1 * Y)	-0.00087	-0.00090	-0.00090
	(!A1 * A3 * !B1 * Y)	0.00134	0.00136	0.00135
	(!A1 * !A3 * B1 * !Y)	-0.00069	-0.00069	-0.00069
	(!A1 * !A3 * B1 * !Y)	0.00120	0.00121	0.00121
	(!A1 * !A3 * !B1 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * !A3 * !B1 * Y)	0.00135	0.00135	0.00135
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00190	-0.00190	-0.00190
	(A1 * A3 * B1 * !Y)	0.00240	0.00241	0.00239
	(A1 * !A3 * B1 * !Y)	-0.00171	-0.00179	-0.00178
	(A1 * !A3 * B1 * !Y)	0.00248	0.00253	0.00249
	(A1 * !A3 * !B1 * Y)	-0.00085	-0.00085	-0.00087
	(A1 * !A3 * !B1 * Y)	0.00255	0.00255	0.00251
	(!A1 * A3 * B1 * !Y)	-0.00172	-0.00178	-0.00178
	(!A1 * A3 * B1 * !Y)	0.00247	0.00251	0.00249
	(!A1 * A3 * !B1 * Y)	-0.00171	-0.00177	-0.00176
	(!A1 * A3 * !B1 * Y)	0.00248	0.00252	0.00249
	(!A1 * !A3 * B1 * !Y)	-0.00109	-0.00110	-0.00110
	(!A1 * !A3 * B1 * !Y)	0.00248	0.00248	0.00249
	(!A1 * !A3 * !B1 * Y)	-0.00098	-0.00098	-0.00098
	(!A1 * !A3 * !B1 * Y)	0.00251	0.00251	0.00252

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00405	-0.00406	-0.00404
	(A1 * A3 * B1 * !Y)	0.00480	0.00483	0.00478
	(A1 * !A3 * B1 * !Y)	-0.00357	-0.00376	-0.00374
	(A1 * !A3 * B1 * !Y)	0.00498	0.00500	0.00499
	(A1 * !A3 * !B1 * Y)	-0.00185	-0.00186	-0.00190
	(A1 * !A3 * !B1 * Y)	0.00515	0.00515	0.00506
	(!A1 * A3 * B1 * !Y)	-0.00373	-0.00385	-0.00382
	(!A1 * A3 * B1 * !Y)	0.00501	0.00503	0.00499
	(!A1 * A3 * !B1 * Y)	-0.00368	-0.00380	-0.00378
	(!A1 * A3 * !B1 * Y)	0.00505	0.00507	0.00503
	(!A1 * !A3 * B1 * !Y)	-0.00240	-0.00241	-0.00240
	(!A1 * !A3 * B1 * !Y)	0.00497	0.00499	0.00499
	(!A1 * !A3 * !B1 * Y)	-0.00214	-0.00215	-0.00214
	(!A1 * !A3 * !B1 * Y)	0.00505	0.00506	0.00507

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)**	0.00114	0.00114	0.00113
	(A1 * A2 * B1 * !Y)	-0.00117	-0.00121	-0.00120
	(A1 * !A2 * !B1 * Y)	0.00099	0.00100	0.00099
	(A1 * !A2 * !B1 * Y)	-0.00132	-0.00133	-0.00133
	(!A2 * B1 * !Y)	0.00107	0.00108	0.00107
	(!A2 * B1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * A2 * B1 * !Y)	0.00106	0.00106	0.00106
	(!A1 * A2 * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A1 * A2 * !B1 * Y)	0.00097	0.00097	0.00097
	(!A1 * A2 * !B1 * Y)	-0.00132	-0.00133	-0.00133
	(!A1 * !A2 * !B1 * Y)	0.00098	0.00100	0.00099
	(!A1 * !A2 * !B1 * Y)	-0.00132	-0.00133	-0.00133

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00211	0.00212	0.00210
	(A1 * A2 * B1 * !Y)	-0.00231	-0.00238	-0.00236
	(A1 * !A2 * !B1 * Y)	0.00194	0.00196	0.00194
	(A1 * !A2 * !B1 * Y)	-0.00245	-0.00247	-0.00246
	(!A2 * B1 * !Y)	0.00199	0.00200	0.00199
	(!A2 * B1 * !Y)	-0.00245	-0.00246	-0.00245
	(!A1 * A2 * B1 * !Y)	0.00192	0.00193	0.00192
	(!A1 * A2 * B1 * !Y)	-0.00245	-0.00246	-0.00245
	(!A1 * A2 * !B1 * Y)	0.00191	0.00192	0.00191
	(!A1 * A2 * !B1 * Y)	-0.00245	-0.00247	-0.00246
	(!A1 * !A2 * !B1 * Y)	0.00195	0.00196	0.00195
	(!A1 * !A2 * !B1 * Y)	-0.00245	-0.00247	-0.00246
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00402	0.00403	0.00401
	(A1 * A2 * B1 * !Y)	-0.00466	-0.00480	-0.00476
	(A1 * !A2 * !B1 * Y)	0.00370	0.00373	0.00372
	(A1 * !A2 * !B1 * Y)	-0.00494	-0.00496	-0.00496
	(!A2 * B1 * !Y)	0.00372	0.00375	0.00372
	(!A2 * B1 * !Y)	-0.00495	-0.00497	-0.00495
	(!A1 * A2 * B1 * !Y)	0.00366	0.00367	0.00365
	(!A1 * A2 * B1 * !Y)	-0.00495	-0.00496	-0.00495
	(!A1 * A2 * !B1 * Y)	0.00364	0.00366	0.00364
	(!A1 * A2 * !B1 * Y)	-0.00496	-0.00497	-0.00496
	(!A1 * !A2 * !B1 * Y)	0.00370	0.00375	0.00372
	(!A1 * !A2 * !B1 * Y)	-0.00494	-0.00498	-0.00496

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)**	-0.00114	-0.00114	-0.00113
	(A1 * A2 * B1 * !Y)	0.00121	0.00121	0.00120
	(A1 * !A2 * !B1 * Y)	-0.00097	-0.00099	-0.00099
	(A1 * !A2 * !B1 * Y)	0.00133	0.00134	0.00133
	(!A2 * B1 * !Y)	-0.00105	-0.00108	-0.00107
	(!A2 * B1 * !Y)	0.00124	0.00126	0.00125
	(!A1 * A2 * B1 * !Y)	-0.00102	-0.00106	-0.00106
	(!A1 * A2 * B1 * !Y)	0.00125	0.00125	0.00125
	(!A1 * A2 * !B1 * Y)	-0.00093	-0.00097	-0.00097
	(!A1 * A2 * !B1 * Y)	0.00133	0.00133	0.00133
	(!A1 * !A2 * !B1 * Y)	-0.00097	-0.00099	-0.00099
	(!A1 * !A2 * !B1 * Y)	0.00133	0.00134	0.00133
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00210	-0.00211	-0.00210
	(A1 * A2 * B1 * !Y)	0.00236	0.00238	0.00236
	(A1 * !A2 * !B1 * Y)	-0.00190	-0.00196	-0.00194
	(A1 * !A2 * !B1 * Y)	0.00246	0.00248	0.00246
	(!A2 * B1 * !Y)	-0.00195	-0.00200	-0.00199
	(!A2 * B1 * !Y)	0.00245	0.00247	0.00246
	(!A1 * A2 * B1 * !Y)	-0.00184	-0.00193	-0.00192
	(!A1 * A2 * B1 * !Y)	0.00246	0.00247	0.00246
	(!A1 * A2 * !B1 * Y)	-0.00183	-0.00192	-0.00191
	(!A1 * A2 * !B1 * Y)	0.00247	0.00248	0.00246
	(!A1 * !A2 * !B1 * Y)	-0.00191	-0.00196	-0.00195
	(!A1 * !A2 * !B1 * Y)	0.00246	0.00248	0.00246

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00402	-0.00403	-0.00401
	(A1 * A2 * B1 * !Y)	0.00478	0.00480	0.00476
	(A1 * !A2 * !B1 * Y)	-0.00363	-0.00373	-0.00372
	(A1 * !A2 * !B1 * Y)	0.00499	0.00500	0.00497
	(!A2 * B1 * !Y)	-0.00364	-0.00375	-0.00372
	(!A2 * B1 * !Y)	0.00499	0.00501	0.00497
	(!A1 * A2 * B1 * !Y)	-0.00350	-0.00367	-0.00365
	(!A1 * A2 * B1 * !Y)	0.00499	0.00498	0.00497
	(!A1 * A2 * !B1 * Y)	-0.00348	-0.00366	-0.00364
	(!A1 * A2 * !B1 * Y)	0.00500	0.00499	0.00497
	(!A1 * !A2 * !B1 * Y)	-0.00364	-0.00375	-0.00372
	(!A1 * !A2 * !B1 * Y)	0.00499	0.00500	0.00497

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)**	0.00126	0.00126	0.00126
	(A1 * A2 * A3 * !Y)	-0.00073	-0.00073	-0.00073
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00134	0.00135	0.00135
	(A1 * A2 * A3 * !Y)	-0.00144	-0.00144	-0.00144
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00281	0.00282	0.00281
	(A1 * A2 * A3 * !Y)	-0.00296	-0.00296	-0.00295

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)	-0.00116	-0.00117	-0.00125
	(A1 * A2 * A3 * !Y)	0.00081	0.00081	0.00075
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00113	-0.00114	-0.00133
	(A1 * A2 * A3 * !Y)	0.00164	0.00163	0.00149
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00238	-0.00241	-0.00278
	(A1 * A2 * A3 * !Y)	0.00331	0.00330	0.00303

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31o_1	11.18880
sky130_fd_sc_hs__a31o_2	12.78720
sky130_fd_sc_hs__a31o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__a31o_1	0.00234	0.00230	0.00230	0.00256	0.36042
sky130_fd_sc_hs__a31o_2	0.00263	0.00251	0.00253	0.00250	0.71862
sky130_fd_sc_hs__a31o_4	0.00461	0.00440	0.00437	0.00466	1.41017

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	0.00017	0.00024
sky130_fd_sc_hs__a31o_2	0.00000	0.00024	0.00034
sky130_fd_sc_hs__a31o_4	0.00000	0.00048	0.00067

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)	0.19330	1.21194	8.63361
	A2->X (RR)	0.20316	1.23295	8.85028
	A3->X (RR)	0.20793	1.21494	8.85422
	B1->X (RR)	0.14050	1.14173	8.59537
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.19729	1.09110	8.81688
	A2->X (RR)	0.20676	1.10209	8.99511
	A3->X (RR)	0.21172	1.07934	8.97280
	B1->X (RR)	0.12888	1.00070	8.73346
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.21909	1.01948	8.94857
	A2->X (RR)	0.22952	1.02110	9.10537
	A3->X (RR)	0.23607	0.99828	9.08174
	B1->X (RR)	0.13021	0.89487	8.79207

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.41809	1.23513	6.76619
	A2->X (FF)	0.48449	1.30492	6.94325
	A3->X (FF)	0.52939	1.35381	7.06179
	B1->X (FF)	0.46733	1.23470	6.45509
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.57755	1.40092	7.23413
	A2->X (FF)	0.66277	1.49201	7.40154
	A3->X (FF)	0.70399	1.53775	7.49758
	B1->X (FF)	0.63677	1.41249	6.99769
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.55426	1.34958	7.22762
	A2->X (FF)	0.62131	1.42214	7.37787
	A3->X (FF)	0.68696	1.49490	7.51554
	B1->X (FF)	0.60834	1.34874	6.94911

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00602	0.00592	0.00582
	A1	0.00286	0.00277	0.00268
	A2	0.00648	0.00643	0.00636
	A2	0.00287	0.00284	0.00277
	A3	0.00699	0.00694	0.00685
	A3	0.00286	0.00280	0.00273
	B1	0.00604	0.00590	0.00582
	B1	0.00217	0.00202	0.00196
sky130_fd_sc_hs__a31o_2	A1	0.00813	0.00815	0.00809
	A1	0.00465	0.00467	0.00465
	A2	0.00865	0.00873	0.00871
	A2	0.00465	0.00473	0.00475
	A3	0.00926	0.00934	0.00929
	A3	0.00464	0.00473	0.00473
	B1	0.00812	0.00813	0.00808
	B1	0.00399	0.00401	0.00397
sky130_fd_sc_hs__a31o_4	A1	0.01535	0.01547	0.01554
	A1	0.00908	0.00921	0.00937
	A2	0.01635	0.01661	0.01677
	A2	0.00908	0.00935	0.00959
	A3	0.01740	0.01773	0.01787
	A3	0.00907	0.00940	0.00963
	B1	0.01451	0.01456	0.01455
	B1	0.00722	0.00725	0.00732

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00231	0.00230	0.00282
	A1	0.00552	0.00552	0.00549
	A2	0.00264	0.00267	0.00307
	A2	0.00626	0.00630	0.00626
	A3	0.00281	0.00283	0.00294
	A3	0.00693	0.00694	0.00688
	B1	0.00256	0.00253	0.00251
	B1	0.00634	0.00632	0.00626
sky130_fd_sc_hs__a31o_2	A1	0.00386	0.00403	0.00512
	A1	0.00739	0.00757	0.00757
	A2	0.00425	0.00445	0.00472
	A2	0.00825	0.00846	0.00846
	A3	0.00447	0.00467	0.00468
	A3	0.00903	0.00923	0.00920
	B1	0.00410	0.00430	0.00543
	B1	0.00844	0.00861	0.00859
sky130_fd_sc_hs__a31o_4	A1	0.00791	0.00834	0.01124
	A1	0.01435	0.01477	0.01483
	A2	0.00849	0.00900	0.00912
	A2	0.01582	0.01632	0.01640
	A3	0.00918	0.00978	0.01173
	A3	0.01744	0.01805	0.01811
	B1	0.00845	0.00887	0.01091
	B1	0.01629	0.01668	0.01674

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)**	0.00085	0.00085	0.00084
	(A2 * A3 * B1 * X)	-0.00106	-0.00109	-0.00109
	(A2 * !A3 * B1 * X)	0.00077	0.00078	0.00077
	(A2 * !A3 * B1 * X)	-0.00113	-0.00114	-0.00113
	(A2 * !A3 * !B1 * !X)	0.00031	0.00031	0.00028
	(A2 * !A3 * !B1 * !X)	-0.00130	-0.00130	-0.00134
	(!A2 * B1 * X)	0.00079	0.00080	0.00080
	(!A2 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A2 * !B1 * !X)	0.00031	0.00031	0.00030
	(!A2 * !B1 * !X)	-0.00133	-0.00133	-0.00135
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00109	0.00108	0.00108
	(A2 * A3 * B1 * X)	-0.00103	-0.00105	-0.00105
	(A2 * !A3 * B1 * X)	0.00099	0.00100	0.00100
	(A2 * !A3 * B1 * X)	-0.00109	-0.00109	-0.00109
	(A2 * !A3 * !B1 * !X)	0.00040	0.00039	0.00036
	(A2 * !A3 * !B1 * !X)	-0.00134	-0.00134	-0.00139
	(!A2 * B1 * X)	0.00103	0.00103	0.00103
	(!A2 * B1 * X)	-0.00109	-0.00109	-0.00109
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00038
	(!A2 * !B1 * !X)	-0.00137	-0.00137	-0.00139
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00182	0.00181	0.00181
	(A2 * A3 * B1 * X)	-0.00215	-0.00219	-0.00218
	(A2 * !A3 * B1 * X)	0.00166	0.00168	0.00167
	(A2 * !A3 * B1 * X)	-0.00227	-0.00229	-0.00228
	(A2 * !A3 * !B1 * !X)	0.00072	0.00072	0.00066
	(A2 * !A3 * !B1 * !X)	-0.00262	-0.00263	-0.00273
	(!A2 * B1 * X)	0.00171	0.00172	0.00171
	(!A2 * B1 * X)	-0.00228	-0.00229	-0.00228
	(!A2 * !B1 * !X)	0.00071	0.00071	0.00068
	(!A2 * !B1 * !X)	-0.00270	-0.00270	-0.00274

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)	-0.00084	-0.00085	-0.00084
	(A2 * A3 * B1 * X)	0.00108	0.00109	0.00109
	(A2 * !A3 * B1 * X)	-0.00073	-0.00078	-0.00077
	(A2 * !A3 * B1 * X)	0.00113	0.00114	0.00114
	(A2 * !A3 * !B1 * !X)	-0.00028	-0.00029	-0.00028
	(A2 * !A3 * !B1 * !X)	0.00134	0.00135	0.00135
	(!A2 * B1 * X)	-0.00078	-0.00080	-0.00080
	(!A2 * B1 * X)	0.00113	0.00114	0.00114
	(!A2 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !X)	0.00134	0.00135	0.00135
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00108	-0.00108	-0.00108
	(A2 * A3 * B1 * X)	0.00104	0.00105	0.00105
	(A2 * !A3 * B1 * X)	-0.00095	-0.00100	-0.00100
	(A2 * !A3 * B1 * X)	0.00109	0.00110	0.00109
	(A2 * !A3 * !B1 * !X)	-0.00036	-0.00037	-0.00036
	(A2 * !A3 * !B1 * !X)	0.00139	0.00139	0.00139
	(!A2 * B1 * X)	-0.00100	-0.00103	-0.00103
	(!A2 * B1 * X)	0.00109	0.00110	0.00109
	(!A2 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * !X)	0.00139	0.00139	0.00139

sky130_fd_sc_hs__a31o_4	(A2 * A3 * B1 * X)	-0.00182	-0.00181	-0.00181
	(A2 * A3 * B1 * X)	0.00220	0.00219	0.00218
	(A2 * !A3 * B1 * X)	-0.00158	-0.00168	-0.00167
	(A2 * !A3 * B1 * X)	0.00228	0.00230	0.00229
	(A2 * !A3 * !B1 * !X)	-0.00065	-0.00065	-0.00065
	(A2 * !A3 * !B1 * !X)	0.00273	0.00274	0.00274
	(!A2 * B1 * X)	-0.00167	-0.00172	-0.00171
	(!A2 * B1 * X)	0.00228	0.00230	0.00228
	(!A2 * !B1 * !X)	-0.00066	-0.00067	-0.00066
	(!A2 * !B1 * !X)	0.00273	0.00274	0.00275

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)	0.00084	0.00083	0.00083
	(A1 * A3 * B1 * X)	-0.00106	-0.00109	-0.00108
	(A1 * !A3 * B1 * X)	0.00077	0.00078	0.00077
	(A1 * !A3 * B1 * X)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * !B1 * !X)	0.00037	0.00037	0.00037
	(A1 * !A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * A3 * B1 * X)	0.00078	0.00079	0.00078
	(!A1 * A3 * B1 * X)	-0.00113	-0.00113	-0.00113
	(!A1 * A3 * !B1 * !X)	0.00074	0.00075	0.00074
	(!A1 * A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A3 * B1 * X)	0.00049	0.00049	0.00049
	(!A1 * !A3 * B1 * X)	-0.00113	-0.00113	-0.00113
	(!A1 * !A3 * !B1 * !X)	0.00040	0.00041	0.00040
	(!A1 * !A3 * !B1 * !X)	-0.00117	-0.00118	-0.00118

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00105	0.00104	0.00104
	(A1 * A3 * B1 * X)	-0.00103	-0.00105	-0.00105
	(A1 * !A3 * B1 * X)	0.00098	0.00098	0.00097
	(A1 * !A3 * B1 * X)	-0.00109	-0.00109	-0.00109
	(A1 * !A3 * !B1 * !X)	0.00046	0.00046	0.00046
	(A1 * !A3 * !B1 * !X)	-0.00118	-0.00118	-0.00117
	(!A1 * A3 * B1 * X)	0.00098	0.00099	0.00098
	(!A1 * A3 * B1 * X)	-0.00108	-0.00109	-0.00109
	(!A1 * A3 * !B1 * !X)	0.00090	0.00091	0.00090
	(!A1 * A3 * !B1 * !X)	-0.00117	-0.00118	-0.00118
	(!A1 * !A3 * B1 * X)	0.00064	0.00064	0.00064
	(!A1 * !A3 * B1 * X)	-0.00109	-0.00109	-0.00109
	(!A1 * !A3 * !B1 * !X)	0.00050	0.00050	0.00050
	(!A1 * !A3 * !B1 * !X)	-0.00118	-0.00118	-0.00118
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00180	0.00179	0.00179
	(A1 * A3 * B1 * X)	-0.00216	-0.00221	-0.00220
	(A1 * !A3 * B1 * X)	0.00166	0.00167	0.00166
	(A1 * !A3 * B1 * X)	-0.00230	-0.00231	-0.00230
	(A1 * !A3 * !B1 * !X)	0.00091	0.00091	0.00092
	(A1 * !A3 * !B1 * !X)	-0.00232	-0.00232	-0.00231
	(!A1 * A3 * B1 * X)	0.00170	0.00170	0.00169
	(!A1 * A3 * B1 * X)	-0.00231	-0.00231	-0.00230
	(!A1 * A3 * !B1 * !X)	0.00169	0.00170	0.00168
	(!A1 * A3 * !B1 * !X)	-0.00231	-0.00232	-0.00231
	(!A1 * !A3 * B1 * X)	0.00109	0.00110	0.00109
	(!A1 * !A3 * B1 * X)	-0.00230	-0.00231	-0.00230
	(!A1 * !A3 * !B1 * !X)	0.00099	0.00099	0.00099
	(!A1 * !A3 * !B1 * !X)	-0.00233	-0.00234	-0.00233

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)	-0.00083	-0.00083	-0.00083
	(A1 * A3 * B1 * X)	0.00108	0.00109	0.00108
	(A1 * !A3 * B1 * X)	-0.00075	-0.00078	-0.00077
	(A1 * !A3 * B1 * X)	0.00114	0.00114	0.00113
	(A1 * !A3 * !B1 * !X)	-0.00035	-0.00035	-0.00036
	(A1 * !A3 * !B1 * !X)	0.00120	0.00120	0.00118
	(!A1 * A3 * B1 * X)	-0.00076	-0.00079	-0.00078
	(!A1 * A3 * B1 * X)	0.00113	0.00114	0.00113
	(!A1 * A3 * !B1 * !X)	-0.00072	-0.00075	-0.00074
	(!A1 * A3 * !B1 * !X)	0.00117	0.00118	0.00118
	(!A1 * !A3 * B1 * X)	-0.00049	-0.00049	-0.00049
	(!A1 * !A3 * B1 * X)	0.00113	0.00113	0.00113
	(!A1 * !A3 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(!A1 * !A3 * !B1 * !X)	0.00117	0.00118	0.00118
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00104	-0.00104	-0.00104
	(A1 * A3 * B1 * X)	0.00105	0.00105	0.00105
	(A1 * !A3 * B1 * X)	-0.00095	-0.00098	-0.00097
	(A1 * !A3 * B1 * X)	0.00110	0.00110	0.00109
	(A1 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00045
	(A1 * !A3 * !B1 * !X)	0.00120	0.00120	0.00118
	(!A1 * A3 * B1 * X)	-0.00096	-0.00099	-0.00098
	(!A1 * A3 * B1 * X)	0.00108	0.00110	0.00109
	(!A1 * A3 * !B1 * !X)	-0.00087	-0.00091	-0.00090
	(!A1 * A3 * !B1 * !X)	0.00117	0.00119	0.00118
	(!A1 * !A3 * B1 * X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A3 * B1 * X)	0.00109	0.00109	0.00109
	(!A1 * !A3 * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A3 * !B1 * !X)	0.00118	0.00118	0.00118

sky130_fd_sc_hs__a31o_4	(A1 * A3 * B1 * X)	-0.00178	-0.00179	-0.00179
	(A1 * A3 * B1 * X)	0.00219	0.00221	0.00220
	(A1 * !A3 * B1 * X)	-0.00161	-0.00167	-0.00166
	(A1 * !A3 * B1 * X)	0.00231	0.00233	0.00231
	(A1 * !A3 * !B1 * !X)	-0.00086	-0.00086	-0.00089
	(A1 * !A3 * !B1 * !X)	0.00237	0.00237	0.00233
	(!A1 * A3 * B1 * X)	-0.00166	-0.00170	-0.00169
	(!A1 * A3 * B1 * X)	0.00232	0.00233	0.00231
	(!A1 * A3 * !B1 * !X)	-0.00165	-0.00170	-0.00168
	(!A1 * A3 * !B1 * !X)	0.00233	0.00233	0.00231
	(!A1 * !A3 * B1 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * !A3 * B1 * X)	0.00230	0.00231	0.00231
	(!A1 * !A3 * !B1 * !X)	-0.00099	-0.00099	-0.00099
	(!A1 * !A3 * !B1 * !X)	0.00233	0.00234	0.00234

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)	0.00093	0.00092	0.00092
	(A1 * A2 * B1 * X)	-0.00105	-0.00107	-0.00107
	(A1 * !A2 * !B1 * !X)	0.00075	0.00075	0.00075
	(A1 * !A2 * !B1 * !X)	-0.00122	-0.00122	-0.00122
	(!A2 * B1 * X)	0.00086	0.00087	0.00086
	(!A2 * B1 * X)	-0.00111	-0.00112	-0.00111
	(!A1 * A2 * B1 * X)	0.00085	0.00086	0.00085
	(!A1 * A2 * B1 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * A2 * !B1 * !X)	0.00074	0.00075	0.00074
	(!A1 * A2 * !B1 * !X)	-0.00122	-0.00123	-0.00122
	(!A1 * !A2 * !B1 * !X)	0.00075	0.00076	0.00075
	(!A1 * !A2 * !B1 * !X)	-0.00122	-0.00123	-0.00122

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00113	0.00112	0.00112
	(A1 * A2 * B1 * X)	-0.00102	-0.00104	-0.00104
	(A1 * !A2 * !B1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A2 * !B1 * !X)	-0.00123	-0.00124	-0.00123
	(!A2 * B1 * X)	0.00105	0.00107	0.00105
	(!A2 * B1 * X)	-0.00107	-0.00108	-0.00107
	(!A1 * A2 * B1 * X)	0.00104	0.00105	0.00104
	(!A1 * A2 * B1 * X)	-0.00107	-0.00108	-0.00107
	(!A1 * A2 * !B1 * !X)	0.00088	0.00089	0.00088
	(!A1 * A2 * !B1 * !X)	-0.00123	-0.00123	-0.00123
	(!A1 * !A2 * !B1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A2 * !B1 * !X)	-0.00123	-0.00124	-0.00123
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00176	0.00177	0.00177
	(A1 * A2 * B1 * X)	-0.00215	-0.00222	-0.00221
	(A1 * !A2 * !B1 * !X)	0.00164	0.00165	0.00164
	(A1 * !A2 * !B1 * !X)	-0.00232	-0.00232	-0.00232
	(!A2 * B1 * X)	0.00165	0.00166	0.00165
	(!A2 * B1 * X)	-0.00231	-0.00232	-0.00231
	(!A1 * A2 * B1 * X)	0.00161	0.00163	0.00162
	(!A1 * A2 * B1 * X)	-0.00230	-0.00232	-0.00231
	(!A1 * A2 * !B1 * !X)	0.00161	0.00162	0.00161
	(!A1 * A2 * !B1 * !X)	-0.00231	-0.00232	-0.00231
	(!A1 * !A2 * !B1 * !X)	0.00164	0.00165	0.00164
	(!A1 * !A2 * !B1 * !X)	-0.00232	-0.00232	-0.00232

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)**	-0.00092	-0.00092	-0.00092
	(A1 * A2 * B1 * X)	0.00107	0.00107	0.00107
	(A1 * !A2 * !B1 * !X)	-0.00074	-0.00075	-0.00075
	(A1 * !A2 * !B1 * !X)	0.00122	0.00123	0.00123
	(!A2 * B1 * X)	-0.00085	-0.00087	-0.00086
	(!A2 * B1 * X)	0.00111	0.00112	0.00111
	(!A1 * A2 * B1 * X)	-0.00082	-0.00086	-0.00085
	(!A1 * A2 * B1 * X)	0.00111	0.00111	0.00111
	(!A1 * A2 * !B1 * !X)	-0.00071	-0.00075	-0.00074
	(!A1 * A2 * !B1 * !X)	0.00123	0.00123	0.00123
	(!A1 * !A2 * !B1 * !X)	-0.00074	-0.00076	-0.00075
	(!A1 * !A2 * !B1 * !X)	0.00122	0.00123	0.00123
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00112	-0.00112	-0.00112
	(A1 * A2 * B1 * X)	0.00104	0.00104	0.00104
	(A1 * !A2 * !B1 * !X)	-0.00088	-0.00090	-0.00090
	(A1 * !A2 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A2 * B1 * X)	-0.00103	-0.00106	-0.00105
	(!A2 * B1 * X)	0.00107	0.00109	0.00108
	(!A1 * A2 * B1 * X)	-0.00100	-0.00105	-0.00104
	(!A1 * A2 * B1 * X)	0.00108	0.00108	0.00108
	(!A1 * A2 * !B1 * !X)	-0.00085	-0.00089	-0.00088
	(!A1 * A2 * !B1 * !X)	0.00124	0.00123	0.00123
	(!A1 * !A2 * !B1 * !X)	-0.00088	-0.00090	-0.00090
	(!A1 * !A2 * !B1 * !X)	0.00123	0.00124	0.00123

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00176	-0.00177	-0.00177
	(A1 * A2 * B1 * X)	0.00222	0.00222	0.00221
	(A1 * !A2 * !B1 * !X)	-0.00160	-0.00165	-0.00164
	(A1 * !A2 * !B1 * !X)	0.00232	0.00233	0.00232
	(!A2 * B1 * X)	-0.00161	-0.00166	-0.00165
	(!A2 * B1 * X)	0.00231	0.00233	0.00232
	(!A1 * A2 * B1 * X)	-0.00154	-0.00163	-0.00162
	(!A1 * A2 * B1 * X)	0.00231	0.00232	0.00232
	(!A1 * A2 * !B1 * !X)	-0.00154	-0.00162	-0.00161
	(!A1 * A2 * !B1 * !X)	0.00232	0.00233	0.00232
	(!A1 * !A2 * !B1 * !X)	-0.00160	-0.00165	-0.00164
	(!A1 * !A2 * !B1 * !X)	0.00232	0.00233	0.00232

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)**	0.00125	0.00125	0.00124
	(A1 * A2 * A3 * X)	-0.00068	-0.00068	-0.00067
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00119	0.00118	0.00118
	(A1 * A2 * A3 * X)	-0.00067	-0.00066	-0.00066
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00202	0.00203	0.00203
	(A1 * A2 * A3 * X)	-0.00141	-0.00142	-0.00142

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)	-0.00116	-0.00117	-0.00124
	(A1 * A2 * A3 * X)	0.00074	0.00074	0.00069
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00110	-0.00110	-0.00117
	(A1 * A2 * A3 * X)	0.00073	0.00073	0.00068
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00182	-0.00183	-0.00201
	(A1 * A2 * A3 * X)	0.00161	0.00159	0.00146

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32oi_1	11.18880
sky130_fd_sc_hs__a32oi_2	20.77920
sky130_fd_sc_hs__a32oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__a32oi_1	0.00270	0.00267	0.00240	0.00279	0.00254	0.15629
sky130_fd_sc_hs__a32oi_2	0.00507	0.00484	0.00475	0.00518	0.00496	0.29833
sky130_fd_sc_hs__a32oi_4	0.01003	0.00955	0.00947	0.01034	0.00983	0.54599

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.00013	0.00020
sky130_fd_sc_hs__a32oi_2	0.00000	0.00027	0.00040
sky130_fd_sc_hs__a32oi_4	0.00000	0.00054	0.00079

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)	0.39809	2.00660	13.60000
	A2->Y (FR)	0.45747	2.06841	13.66380
	A3->Y (FR)	0.50434	2.12016	13.67900
	B1->Y (FR)	0.36482	1.90993	13.22400
	B2->Y (FR)	0.41565	1.96120	13.27520
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.35233	1.72660	13.29880
	A2->Y (FR)	0.44285	1.84451	13.63070
	A3->Y (FR)	0.49109	1.89704	13.61690
	B1->Y (FR)	0.32095	1.65151	13.08090
	B2->Y (FR)	0.39955	1.74176	13.22310
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.37018	1.60300	13.46030
	A2->Y (FR)	0.44092	1.67534	13.50060
	A3->Y (FR)	0.50001	1.74563	13.56940
	B1->Y (FR)	0.32618	1.49310	12.99250
	B2->Y (FR)	0.41133	1.59684	13.24870

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.07567	0.68865	5.14099
	A2->Y (RF)	0.08460	0.67954	5.02820
	A3->Y (RF)	0.08840	0.63692	4.61706
	B1->Y (RF)	0.04883	0.58592	4.58218
	B2->Y (RF)	0.05276	0.56895	4.42405
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.07254	0.66012	5.39655
	A2->Y (RF)	0.08731	0.65690	5.25367
	A3->Y (RF)	0.09118	0.59461	4.63082
	B1->Y (RF)	0.04344	0.54288	4.70117
	B2->Y (RF)	0.05163	0.53197	4.49631
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.07473	0.62115	5.43264
	A2->Y (RF)	0.08827	0.61161	5.21158
	A3->Y (RF)	0.09260	0.55031	4.56003
	B1->Y (RF)	0.04443	0.50362	4.71378
	B2->Y (RF)	0.05134	0.48313	4.36853

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00075	0.00060	0.00057
	A1	0.00510	0.00494	0.00492
	A2	0.00104	0.00091	0.00087
	A2	0.00595	0.00579	0.00578
	A3	0.00141	0.00134	0.00131
	A3	0.00677	0.00667	0.00663
	B1	0.00115	0.00097	0.00093
	B1	0.00536	0.00519	0.00514
	B2	0.00140	0.00129	0.00126
	B2	0.00613	0.00603	0.00598
sky130_fd_sc_hs__a32oi_2	A1	0.00082	0.00051	0.00047
	A1	0.00930	0.00902	0.00898
	A2	0.00192	0.00162	0.00156
	A2	0.01155	0.01123	0.01119
	A3	0.00245	0.00228	0.00222
	A3	0.01313	0.01296	0.01289
	B1	0.00158	0.00124	0.00121
	B1	0.00972	0.00940	0.00931
	B2	0.00253	0.00227	0.00220
	B2	0.01182	0.01158	0.01147

sky130_fd_sc_hs__a32oi_4	**A1**	0.00152	0.00087	0.00085
	A1	0.01863	0.01796	0.01792
	A2	0.00320	0.00256	0.00250
	A2	0.02243	0.02185	0.02175
	A3	0.00437	0.00400	0.00392
	A3	0.02581	0.02547	0.02533
	B1	0.00271	0.00197	0.00194
	B1	0.01922	0.01850	0.01838
	B2	0.00439	0.00385	0.00377
	B2	0.02309	0.02258	0.02241

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00553	0.00546	0.00538
	A1	0.00147	0.00137	0.00128
	A2	0.00612	0.00604	0.00601
	A2	0.00147	0.00138	0.00129
	A3	0.00659	0.00652	0.00645
	A3	0.00143	0.00136	0.00127
	B1	0.00435	0.00435	0.00431
	B1	0.00004	0.00002	-0.00002
	B2	0.00488	0.00486	0.00485
	B2	0.00002	0.00000	-0.00003

sky130_fd_sc_hs__a32oi_2	**A1**	0.01073	0.01049	0.01045
	A1	0.00282	0.00260	0.00244
	A2	0.01192	0.01174	0.01158
	A2	0.00280	0.00262	0.00246
	A3	0.01309	0.01290	0.01272
	A3	0.00279	0.00262	0.00246
	B1	0.00824	0.00819	0.00822
	B1	-0.00009	-0.00015	-0.00017
	B2	0.00951	0.00947	0.00950
	B2	-0.00009	-0.00013	-0.00015
sky130_fd_sc_hs__a32oi_4	**A1**	0.02109	0.02055	0.02059
	A1	0.00516	0.00468	0.00441
	A2	0.02341	0.02302	0.02276
	A2	0.00512	0.00474	0.00445
	A3	0.02576	0.02541	0.02518
	A3	0.00505	0.00468	0.00438
	B1	0.01663	0.01645	0.01659
	B1	-0.00026	-0.00051	-0.00044
	B2	0.01909	0.01898	0.01904
	B2	-0.00019	-0.00038	-0.00035

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)**	0.00107	0.00108	0.00107
	(A2 * A3 * B1 * B2 * !Y)	-0.00114	-0.00116	-0.00116
	(A2 * !A3 * B1 * B2 * !Y)	0.00098	0.00098	0.00098
	(A2 * !A3 * B1 * B2 * !Y)	-0.00120	-0.00121	-0.00120
	(A2 * !A3 * B1 * !B2 * Y)	0.00041	0.00041	0.00038
	(A2 * !A3 * B1 * !B2 * Y)	-0.00142	-0.00143	-0.00147
	(A2 * !A3 * !B1 * Y)	0.00041	0.00041	0.00038
	(A2 * !A3 * !B1 * Y)	-0.00142	-0.00143	-0.00147
	(!A2 * B1 * B2 * !Y)	0.00100	0.00100	0.00100
	(!A2 * B1 * B2 * !Y)	-0.00120	-0.00121	-0.00120
	(!A2 * B1 * !B2 * Y)	0.00039	0.00039	0.00038
	(!A2 * B1 * !B2 * Y)	-0.00146	-0.00147	-0.00148
	(!A2 * !B1 * Y)	0.00039	0.00039	0.00038
	(!A2 * !B1 * Y)	-0.00146	-0.00147	-0.00148
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00211	0.00211	0.00210
	(A2 * A3 * B1 * B2 * !Y)	-0.00226	-0.00232	-0.00231
	(A2 * !A3 * B1 * B2 * !Y)	0.00191	0.00193	0.00192
	(A2 * !A3 * B1 * B2 * !Y)	-0.00240	-0.00241	-0.00241
	(A2 * !A3 * B1 * !B2 * Y)	0.00083	0.00084	0.00077
	(A2 * !A3 * B1 * !B2 * Y)	-0.00276	-0.00280	-0.00292
	(A2 * !A3 * !B1 * Y)	0.00084	0.00084	0.00077
	(A2 * !A3 * !B1 * Y)	-0.00279	-0.00280	-0.00292
	(!A2 * B1 * B2 * !Y)	0.00199	0.00201	0.00200
	(!A2 * B1 * B2 * !Y)	-0.00240	-0.00242	-0.00240
	(!A2 * B1 * !B2 * Y)	0.00084	0.00085	0.00081
	(!A2 * B1 * !B2 * Y)	-0.00284	-0.00288	-0.00293
	(!A2 * !B1 * Y)	0.00086	0.00086	0.00081
	(!A2 * !B1 * Y)	-0.00287	-0.00288	-0.00293

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00418	0.00419	0.00416
	(A2 * A3 * B1 * B2 * !Y)	-0.00454	-0.00465	-0.00463
	(A2 * !A3 * B1 * B2 * !Y)	0.00376	0.00377	0.00377
	(A2 * !A3 * B1 * B2 * !Y)	-0.00482	-0.00483	-0.00482
	(A2 * !A3 * B1 * !B2 * Y)	0.00152	0.00152	0.00140
	(A2 * !A3 * B1 * !B2 * Y)	-0.00565	-0.00570	-0.00591
	(A2 * !A3 * !B1 * Y)	0.00152	0.00152	0.00140
	(A2 * !A3 * !B1 * Y)	-0.00565	-0.00570	-0.00591
	(!A2 * B1 * B2 * !Y)	0.00393	0.00395	0.00393
	(!A2 * B1 * B2 * !Y)	-0.00482	-0.00485	-0.00482
	(!A2 * B1 * !B2 * Y)	0.00154	0.00155	0.00148
	(!A2 * B1 * !B2 * Y)	-0.00581	-0.00586	-0.00594
	(!A2 * !B1 * Y)	0.00155	0.00155	0.00148
	(!A2 * !B1 * Y)	-0.00581	-0.00586	-0.00594

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)**	-0.00107	-0.00107	-0.00107
	(A2 * A3 * B1 * B2 * !Y)	0.00116	0.00116	0.00116
	(A2 * !A3 * B1 * B2 * !Y)	-0.00092	-0.00098	-0.00098
	(A2 * !A3 * B1 * B2 * !Y)	0.00120	0.00122	0.00121
	(A2 * !A3 * B1 * !B2 * Y)	-0.00037	-0.00037	-0.00037
	(A2 * !A3 * B1 * !B2 * Y)	0.00149	0.00149	0.00148
	(A2 * !A3 * !B1 * Y)	-0.00038	-0.00037	-0.00037
	(A2 * !A3 * !B1 * Y)	0.00149	0.00149	0.00148
	(!A2 * B1 * B2 * !Y)	-0.00097	-0.00100	-0.00100
	(!A2 * B1 * B2 * !Y)	0.00120	0.00122	0.00121
	(!A2 * B1 * !B2 * Y)	-0.00038	-0.00038	-0.00037
	(!A2 * B1 * !B2 * Y)	0.00149	0.00149	0.00148
	(!A2 * !B1 * Y)	-0.00038	-0.00038	-0.00037
	(!A2 * !B1 * Y)	0.00149	0.00149	0.00148
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00210	-0.00211	-0.00210
	(A2 * A3 * B1 * B2 * !Y)	0.00231	0.00232	0.00231
	(A2 * !A3 * B1 * B2 * !Y)	-0.00179	-0.00193	-0.00192
	(A2 * !A3 * B1 * B2 * !Y)	0.00241	0.00244	0.00241
	(A2 * !A3 * B1 * !B2 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * !A3 * B1 * !B2 * Y)	0.00293	0.00294	0.00293
	(A2 * !A3 * !B1 * Y)	-0.00077	-0.00077	-0.00077
	(A2 * !A3 * !B1 * Y)	0.00293	0.00294	0.00293
	(!A2 * B1 * B2 * !Y)	-0.00193	-0.00201	-0.00200
	(!A2 * B1 * B2 * !Y)	0.00240	0.00244	0.00241
	(!A2 * B1 * !B2 * Y)	-0.00079	-0.00079	-0.00079
	(!A2 * B1 * !B2 * Y)	0.00292	0.00294	0.00293
	(!A2 * !B1 * Y)	-0.00079	-0.00079	-0.00079
	(!A2 * !B1 * Y)	0.00292	0.00294	0.00293

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00416	-0.00417	-0.00416
	(A2 * A3 * B1 * B2 * !Y)	0.00462	0.00465	0.00463
	(A2 * !A3 * B1 * B2 * !Y)	-0.00350	-0.00377	-0.00377
	(A2 * !A3 * B1 * B2 * !Y)	0.00482	0.00488	0.00484
	(A2 * !A3 * B1 * !B2 * Y)	-0.00140	-0.00140	-0.00140
	(A2 * !A3 * B1 * !B2 * Y)	0.00592	0.00595	0.00594
	(A2 * !A3 * !B1 * Y)	-0.00140	-0.00140	-0.00140
	(A2 * !A3 * !B1 * Y)	0.00591	0.00595	0.00594
	(!A2 * B1 * B2 * !Y)	-0.00380	-0.00395	-0.00393
	(!A2 * B1 * B2 * !Y)	0.00482	0.00489	0.00484
	(!A2 * B1 * !B2 * Y)	-0.00143	-0.00144	-0.00144
	(!A2 * B1 * !B2 * Y)	0.00592	0.00596	0.00594
	(!A2 * !B1 * Y)	-0.00144	-0.00145	-0.00144
	(!A2 * !B1 * Y)	0.00592	0.00596	0.00594

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)**	0.00111	0.00111	0.00110
	(A1 * A3 * B1 * B2 * !Y)	-0.00114	-0.00116	-0.00116
	(A1 * !A3 * B1 * B2 * !Y)	0.00103	0.00104	0.00104
	(A1 * !A3 * B1 * B2 * !Y)	-0.00120	-0.00121	-0.00121
	(A1 * !A3 * B1 * !B2 * Y)	0.00054	0.00054	0.00053
	(A1 * !A3 * B1 * !B2 * Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A3 * !B1 * Y)	0.00054	0.00054	0.00053
	(A1 * !A3 * !B1 * Y)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * B1 * B2 * !Y)	0.00103	0.00103	0.00103
	(!A1 * A3 * B1 * B2 * !Y)	-0.00120	-0.00121	-0.00121
	(!A1 * A3 * B1 * !B2 * Y)	0.00096	0.00097	0.00097
	(!A1 * A3 * B1 * !B2 * Y)	-0.00127	-0.00128	-0.00128
	(!A1 * A3 * !B1 * Y)	0.00097	0.00098	0.00097
	(!A1 * A3 * !B1 * Y)	-0.00127	-0.00128	-0.00128
	(!A1 * !A3 * B1 * B2 * !Y)	0.00068	0.00069	0.00069
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00120	-0.00121	-0.00121
	(!A1 * !A3 * B1 * !B2 * Y)	0.00058	0.00057	0.00057
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00128	-0.00128	-0.00128
	(!A1 * !A3 * !B1 * Y)	0.00058	0.00057	0.00057
	(!A1 * !A3 * !B1 * Y)	-0.00128	-0.00128	-0.00128

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00202	0.00202	0.00202
	(A1 * A3 * B1 * B2 * !Y)	-0.00234	-0.00242	-0.00240
	(A1 * !A3 * B1 * B2 * !Y)	0.00187	0.00188	0.00188
	(A1 * !A3 * B1 * B2 * !Y)	-0.00250	-0.00251	-0.00251
	(A1 * !A3 * B1 * !B2 * Y)	0.00099	0.00100	0.00100
	(A1 * !A3 * B1 * !B2 * Y)	-0.00254	-0.00255	-0.00254
	(A1 * !A3 * !B1 * Y)	0.00099	0.00100	0.00100
	(A1 * !A3 * !B1 * Y)	-0.00254	-0.00255	-0.00254
	(!A1 * A3 * B1 * B2 * !Y)	0.00190	0.00192	0.00191
	(!A1 * A3 * B1 * B2 * !Y)	-0.00250	-0.00251	-0.00250
	(!A1 * A3 * B1 * !B2 * Y)	0.00187	0.00189	0.00187
	(!A1 * A3 * B1 * !B2 * Y)	-0.00253	-0.00255	-0.00253
	(!A1 * A3 * !B1 * Y)	0.00187	0.00189	0.00187
	(!A1 * A3 * !B1 * Y)	-0.00253	-0.00255	-0.00253
	(!A1 * !A3 * B1 * B2 * !Y)	0.00123	0.00124	0.00123
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00251	-0.00252	-0.00251
	(!A1 * !A3 * B1 * !B2 * Y)	0.00108	0.00109	0.00108
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00255	-0.00256	-0.00255
	(!A1 * !A3 * !B1 * Y)	0.00109	0.00109	0.00109
	(!A1 * !A3 * !B1 * Y)	-0.00255	-0.00256	-0.00255

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00407	0.00406	0.00404
	(A1 * A3 * B1 * B2 * !Y)	-0.00465	-0.00475	-0.00475
	(A1 * !A3 * B1 * B2 * !Y)	0.00373	0.00375	0.00373
	(A1 * !A3 * B1 * B2 * !Y)	-0.00497	-0.00499	-0.00496
	(A1 * !A3 * B1 * !B2 * Y)	0.00191	0.00192	0.00192
	(A1 * !A3 * B1 * !B2 * Y)	-0.00502	-0.00505	-0.00502
	(A1 * !A3 * !B1 * Y)	0.00191	0.00192	0.00192
	(A1 * !A3 * !B1 * Y)	-0.00502	-0.00505	-0.00502
	(!A1 * A3 * B1 * B2 * !Y)	0.00382	0.00385	0.00382
	(!A1 * A3 * B1 * B2 * !Y)	-0.00497	-0.00499	-0.00496
	(!A1 * A3 * B1 * !B2 * Y)	0.00376	0.00379	0.00376
	(!A1 * A3 * B1 * !B2 * Y)	-0.00502	-0.00504	-0.00502
	(!A1 * A3 * !B1 * Y)	0.00375	0.00379	0.00376
	(!A1 * A3 * !B1 * Y)	-0.00501	-0.00504	-0.00502
	(!A1 * !A3 * B1 * B2 * !Y)	0.00234	0.00236	0.00234
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00496	-0.00498	-0.00496
	(!A1 * !A3 * B1 * !B2 * Y)	0.00207	0.00208	0.00207
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00504	-0.00506	-0.00505
	(!A1 * !A3 * !B1 * Y)	0.00207	0.00208	0.00207
	(!A1 * !A3 * !B1 * Y)	-0.00504	-0.00506	-0.00505

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)**	-0.00110	-0.00110	-0.00110
	(A1 * A3 * B1 * B2 * !Y)	0.00116	0.00116	0.00116
	(A1 * !A3 * B1 * B2 * !Y)	-0.00101	-0.00104	-0.00104
	(A1 * !A3 * B1 * B2 * !Y)	0.00121	0.00122	0.00121
	(A1 * !A3 * B1 * !B2 * Y)	-0.00051	-0.00051	-0.00052
	(A1 * !A3 * B1 * !B2 * Y)	0.00129	0.00130	0.00128
	(A1 * !A3 * !B1 * Y)	-0.00051	-0.00051	-0.00052
	(A1 * !A3 * !B1 * Y)	0.00129	0.00130	0.00128
	(!A1 * A3 * B1 * B2 * !Y)	-0.00101	-0.00103	-0.00103
	(!A1 * A3 * B1 * B2 * !Y)	0.00120	0.00122	0.00121
	(!A1 * A3 * B1 * !B2 * Y)	-0.00094	-0.00097	-0.00097
	(!A1 * A3 * B1 * !B2 * Y)	0.00127	0.00129	0.00128
	(!A1 * A3 * !B1 * Y)	-0.00094	-0.00097	-0.00097
	(!A1 * A3 * !B1 * Y)	0.00127	0.00129	0.00128
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00068	-0.00069	-0.00069
	(!A1 * !A3 * B1 * B2 * !Y)	0.00121	0.00121	0.00121
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00058	-0.00057	-0.00057
	(!A1 * !A3 * B1 * !B2 * Y)	0.00128	0.00128	0.00128
	(!A1 * !A3 * !B1 * Y)	-0.00058	-0.00057	-0.00057
	(!A1 * !A3 * !B1 * Y)	0.00128	0.00128	0.00128

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00202	-0.00202	-0.00202
	(A1 * A3 * B1 * B2 * !Y)	0.00239	0.00242	0.00240
	(A1 * !A3 * B1 * B2 * !Y)	-0.00181	-0.00188	-0.00188
	(A1 * !A3 * B1 * B2 * !Y)	0.00251	0.00254	0.00251
	(A1 * !A3 * B1 * !B2 * Y)	-0.00093	-0.00094	-0.00096
	(A1 * !A3 * B1 * !B2 * Y)	0.00260	0.00261	0.00256
	(A1 * !A3 * !B1 * Y)	-0.00093	-0.00094	-0.00097
	(A1 * !A3 * !B1 * Y)	0.00260	0.00261	0.00256
	(!A1 * A3 * B1 * B2 * !Y)	-0.00186	-0.00192	-0.00191
	(!A1 * A3 * B1 * B2 * !Y)	0.00252	0.00253	0.00251
	(!A1 * A3 * B1 * !B2 * Y)	-0.00183	-0.00189	-0.00187
	(!A1 * A3 * B1 * !B2 * Y)	0.00255	0.00256	0.00254
	(!A1 * A3 * !B1 * Y)	-0.00183	-0.00189	-0.00187
	(!A1 * A3 * !B1 * Y)	0.00255	0.00256	0.00254
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00123	-0.00124	-0.00123
	(!A1 * !A3 * B1 * B2 * !Y)	0.00251	0.00252	0.00252
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00108	-0.00109	-0.00108
	(!A1 * !A3 * B1 * !B2 * Y)	0.00256	0.00256	0.00256
	(!A1 * !A3 * !B1 * Y)	-0.00109	-0.00109	-0.00109
	(!A1 * !A3 * !B1 * Y)	0.00256	0.00256	0.00256

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00406	-0.00405	-0.00404
	(A1 * A3 * B1 * B2 * !Y)	0.00477	0.00475	0.00475
	(A1 * !A3 * B1 * B2 * !Y)	-0.00357	-0.00375	-0.00373
	(A1 * !A3 * B1 * B2 * !Y)	0.00497	0.00499	0.00498
	(A1 * !A3 * B1 * !B2 * Y)	-0.00181	-0.00181	-0.00186
	(A1 * !A3 * B1 * !B2 * Y)	0.00514	0.00515	0.00506
	(A1 * !A3 * !B1 * Y)	-0.00181	-0.00182	-0.00186
	(A1 * !A3 * !B1 * Y)	0.00514	0.00515	0.00506
	(!A1 * A3 * B1 * B2 * !Y)	-0.00373	-0.00385	-0.00382
	(!A1 * A3 * B1 * B2 * !Y)	0.00500	0.00502	0.00498
	(!A1 * A3 * B1 * !B2 * Y)	-0.00366	-0.00379	-0.00376
	(!A1 * A3 * B1 * !B2 * Y)	0.00505	0.00507	0.00503
	(!A1 * A3 * !B1 * Y)	-0.00367	-0.00379	-0.00376
	(!A1 * A3 * !B1 * Y)	0.00505	0.00507	0.00503
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00234	-0.00236	-0.00234
	(!A1 * !A3 * B1 * B2 * !Y)	0.00496	0.00498	0.00498
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00207	-0.00208	-0.00207
	(!A1 * !A3 * B1 * !B2 * Y)	0.00505	0.00506	0.00507
	(!A1 * !A3 * !B1 * Y)	-0.00207	-0.00208	-0.00207
	(!A1 * !A3 * !B1 * Y)	0.00505	0.00506	0.00507

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)**	0.00104	0.00104	0.00103
	(A1 * A2 * B1 * B2 * !Y)	-0.00116	-0.00117	-0.00118
	(A1 * !A2 * B1 * !B2 * Y)	0.00096	0.00098	0.00097
	(A1 * !A2 * B1 * !B2 * Y)	-0.00121	-0.00122	-0.00122
	(A1 * !A2 * !B1 * Y)	0.00096	0.00098	0.00097
	(A1 * !A2 * !B1 * Y)	-0.00121	-0.00122	-0.00122
	(!A2 * B1 * B2 * !Y)	0.00098	0.00098	0.00097
	(!A2 * B1 * B2 * !Y)	-0.00122	-0.00122	-0.00122
	(!A1 * A2 * B1 * B2 * !Y)	0.00095	0.00096	0.00095
	(!A1 * A2 * B1 * B2 * !Y)	-0.00121	-0.00122	-0.00122
	(!A1 * A2 * B1 * !B2 * Y)	0.00095	0.00096	0.00095
	(!A1 * A2 * B1 * !B2 * Y)	-0.00121	-0.00122	-0.00122
	(!A1 * A2 * !B1 * Y)	0.00095	0.00096	0.00095
	(!A1 * A2 * !B1 * Y)	-0.00121	-0.00122	-0.00122
	(!A1 * !A2 * B1 * !B2 * Y)	0.00098	0.00098	0.00097
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00122	-0.00122	-0.00122
	(!A1 * !A2 * !B1 * Y)	0.00097	0.00098	0.00097
	(!A1 * !A2 * !B1 * Y)	-0.00121	-0.00122	-0.00122

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00208	0.00208	0.00206
	(A1 * A2 * B1 * B2 * !Y)	-0.00232	-0.00239	-0.00237
	(A1 * !A2 * B1 * !B2 * Y)	0.00193	0.00195	0.00194
	(A1 * !A2 * B1 * !B2 * Y)	-0.00246	-0.00248	-0.00247
	(A1 * !A2 * !B1 * Y)	0.00193	0.00195	0.00194
	(A1 * !A2 * !B1 * Y)	-0.00246	-0.00248	-0.00247
	(!A2 * B1 * B2 * !Y)	0.00193	0.00196	0.00194
	(!A2 * B1 * B2 * !Y)	-0.00246	-0.00249	-0.00247
	(!A1 * A2 * B1 * B2 * !Y)	0.00189	0.00191	0.00190
	(!A1 * A2 * B1 * B2 * !Y)	-0.00246	-0.00248	-0.00247
	(!A1 * A2 * B1 * !B2 * Y)	0.00189	0.00190	0.00189
	(!A1 * A2 * B1 * !B2 * Y)	-0.00246	-0.00248	-0.00247
	(!A1 * A2 * !B1 * Y)	0.00191	0.00190	0.00189
	(!A1 * A2 * !B1 * Y)	-0.00247	-0.00248	-0.00247
	(!A1 * !A2 * B1 * !B2 * Y)	0.00193	0.00195	0.00193
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00246	-0.00249	-0.00247
	(!A1 * !A2 * !B1 * Y)	0.00193	0.00195	0.00193
	(!A1 * !A2 * !B1 * Y)	-0.00246	-0.00249	-0.00247

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00405	0.00403	0.00400
	(A1 * A2 * B1 * B2 * !Y)	-0.00470	-0.00482	-0.00478
	(A1 * !A2 * B1 * !B2 * Y)	0.00370	0.00373	0.00371
	(A1 * !A2 * B1 * !B2 * Y)	-0.00499	-0.00501	-0.00500
	(A1 * !A2 * !B1 * Y)	0.00370	0.00373	0.00371
	(A1 * !A2 * !B1 * Y)	-0.00499	-0.00502	-0.00500
	(!A2 * B1 * B2 * !Y)	0.00371	0.00375	0.00372
	(!A2 * B1 * B2 * !Y)	-0.00499	-0.00501	-0.00499
	(!A1 * A2 * B1 * B2 * !Y)	0.00365	0.00366	0.00364
	(!A1 * A2 * B1 * B2 * !Y)	-0.00499	-0.00501	-0.00499
	(!A1 * A2 * B1 * !B2 * Y)	0.00363	0.00365	0.00363
	(!A1 * A2 * B1 * !B2 * Y)	-0.00500	-0.00501	-0.00500
	(!A1 * A2 * !B1 * Y)	0.00364	0.00365	0.00363
	(!A1 * A2 * !B1 * Y)	-0.00500	-0.00501	-0.00500
	(!A1 * !A2 * B1 * !B2 * Y)	0.00370	0.00374	0.00371
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00499	-0.00502	-0.00500
	(!A1 * !A2 * !B1 * Y)	0.00370	0.00374	0.00371
	(!A1 * !A2 * !B1 * Y)	-0.00499	-0.00502	-0.00500

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)**	-0.00103	-0.00103	-0.00103
	(A1 * A2 * B1 * B2 * !Y)	0.00118	0.00117	0.00118
	(A1 * !A2 * B1 * !B2 * Y)	-0.00095	-0.00098	-0.00097
	(A1 * !A2 * B1 * !B2 * Y)	0.00122	0.00123	0.00122
	(A1 * !A2 * !B1 * Y)	-0.00095	-0.00098	-0.00097
	(A1 * !A2 * !B1 * Y)	0.00122	0.00123	0.00122
	(!A2 * B1 * B2 * !Y)	-0.00095	-0.00098	-0.00097
	(!A2 * B1 * B2 * !Y)	0.00122	0.00123	0.00122
	(!A1 * A2 * B1 * B2 * !Y)	-0.00091	-0.00095	-0.00095
	(!A1 * A2 * B1 * B2 * !Y)	0.00122	0.00122	0.00122
	(!A1 * A2 * B1 * !B2 * Y)	-0.00091	-0.00095	-0.00095
	(!A1 * A2 * B1 * !B2 * Y)	0.00122	0.00122	0.00122
	(!A1 * A2 * !B1 * Y)	-0.00091	-0.00095	-0.00095
	(!A1 * A2 * !B1 * Y)	0.00122	0.00122	0.00122
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00095	-0.00098	-0.00097
	(!A1 * !A2 * B1 * !B2 * Y)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !B1 * Y)	-0.00095	-0.00098	-0.00097
	(!A1 * !A2 * !B1 * Y)	0.00122	0.00123	0.00122

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00206	-0.00208	-0.00206
	(A1 * A2 * B1 * B2 * !Y)	0.00236	0.00239	0.00237
	(A1 * !A2 * B1 * !B2 * Y)	-0.00189	-0.00195	-0.00194
	(A1 * !A2 * B1 * !B2 * Y)	0.00248	0.00249	0.00248
	(A1 * !A2 * !B1 * Y)	-0.00189	-0.00195	-0.00194
	(A1 * !A2 * !B1 * Y)	0.00248	0.00249	0.00248
	(!A2 * B1 * B2 * !Y)	-0.00190	-0.00195	-0.00194
	(!A2 * B1 * B2 * !Y)	0.00249	0.00250	0.00248
	(!A1 * A2 * B1 * B2 * !Y)	-0.00183	-0.00191	-0.00190
	(!A1 * A2 * B1 * B2 * !Y)	0.00247	0.00249	0.00248
	(!A1 * A2 * B1 * !B2 * Y)	-0.00183	-0.00190	-0.00189
	(!A1 * A2 * B1 * !B2 * Y)	0.00247	0.00249	0.00248
	(!A1 * A2 * !B1 * Y)	-0.00183	-0.00190	-0.00189
	(!A1 * A2 * !B1 * Y)	0.00247	0.00249	0.00248
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00189	-0.00195	-0.00193
	(!A1 * !A2 * B1 * !B2 * Y)	0.00248	0.00249	0.00248
	(!A1 * !A2 * !B1 * Y)	-0.00189	-0.00195	-0.00193
	(!A1 * !A2 * !B1 * Y)	0.00248	0.00249	0.00248

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00400	-0.00402	-0.00400
	(A1 * A2 * B1 * B2 * !Y)	0.00477	0.00482	0.00478
	(A1 * !A2 * B1 * !B2 * Y)	-0.00362	-0.00373	-0.00371
	(A1 * !A2 * B1 * !B2 * Y)	0.00501	0.00504	0.00501
	(A1 * !A2 * !B1 * Y)	-0.00362	-0.00373	-0.00371
	(A1 * !A2 * !B1 * Y)	0.00501	0.00504	0.00501
	(!A2 * B1 * B2 * !Y)	-0.00363	-0.00375	-0.00372
	(!A2 * B1 * B2 * !Y)	0.00501	0.00505	0.00501
	(!A1 * A2 * B1 * B2 * !Y)	-0.00351	-0.00366	-0.00364
	(!A1 * A2 * B1 * B2 * !Y)	0.00502	0.00503	0.00501
	(!A1 * A2 * B1 * !B2 * Y)	-0.00349	-0.00365	-0.00363
	(!A1 * A2 * B1 * !B2 * Y)	0.00504	0.00503	0.00501
	(!A1 * A2 * !B1 * Y)	-0.00349	-0.00365	-0.00363
	(!A1 * A2 * !B1 * Y)	0.00504	0.00503	0.00501
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00362	-0.00374	-0.00371
	(!A1 * !A2 * B1 * !B2 * Y)	0.00501	0.00504	0.00501
	(!A1 * !A2 * !B1 * Y)	-0.00362	-0.00374	-0.00371
	(!A1 * !A2 * !B1 * Y)	0.00501	0.00504	0.00501

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)**	0.00121	0.00121	0.00121
	(A1 * A2 * A3 * B2 * !Y)	-0.00073	-0.00073	-0.00072
	(A1 * A2 * A3 * !B2 * !Y)	0.00115	0.00116	0.00115
	(A1 * A2 * A3 * !B2 * !Y)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * !A3 * !B2 * Y)	0.00039	0.00039	0.00038
	(A1 * A2 * !A3 * !B2 * Y)	-0.00150	-0.00150	-0.00151
	(A1 * !A2 * !B2 * Y)	0.00039	0.00039	0.00038
	(A1 * !A2 * !B2 * Y)	-0.00150	-0.00150	-0.00151
	(!A1 * !B2 * Y)	0.00039	0.00039	0.00038
	(!A1 * !B2 * Y)	-0.00150	-0.00150	-0.00151
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00230	0.00230	0.00230
	(A1 * A2 * A3 * B2 * !Y)	-0.00147	-0.00146	-0.00145
	(A1 * A2 * A3 * !B2 * !Y)	0.00218	0.00220	0.00219
	(A1 * A2 * A3 * !B2 * !Y)	-0.00145	-0.00146	-0.00145
	(A1 * A2 * !A3 * !B2 * Y)	0.00082	0.00081	0.00077
	(A1 * A2 * !A3 * !B2 * Y)	-0.00288	-0.00289	-0.00294
	(A1 * !A2 * !B2 * Y)	0.00082	0.00081	0.00077
	(A1 * !A2 * !B2 * Y)	-0.00288	-0.00289	-0.00294
	(!A1 * !B2 * Y)	0.00082	0.00082	0.00077
	(!A1 * !B2 * Y)	-0.00288	-0.00289	-0.00294
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00462	0.00465	0.00464
	(A1 * A2 * A3 * B2 * !Y)	-0.00293	-0.00295	-0.00294
	(A1 * A2 * A3 * !B2 * !Y)	0.00438	0.00441	0.00440
	(A1 * A2 * A3 * !B2 * !Y)	-0.00293	-0.00294	-0.00293
	(A1 * A2 * !A3 * !B2 * Y)	0.00156	0.00154	0.00148
	(A1 * A2 * !A3 * !B2 * Y)	-0.00588	-0.00583	-0.00597
	(A1 * !A2 * !B2 * Y)	0.00156	0.00154	0.00148
	(A1 * !A2 * !B2 * Y)	-0.00588	-0.00583	-0.00597
	(!A1 * !B2 * Y)	0.00157	0.00154	0.00149
	(!A1 * !B2 * Y)	-0.00588	-0.00583	-0.00597

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)	-0.00107	-0.00109	-0.00120
	(A1 * A2 * A3 * B2 * !Y)	0.00084	0.00084	0.00075
	(A1 * A2 * A3 * !B2 * !Y)	-0.00112	-0.00116	-0.00115
	(A1 * A2 * A3 * !B2 * !Y)	0.00072	0.00073	0.00072
	(A1 * A2 * !A3 * !B2 * Y)	-0.00037	-0.00037	-0.00037
	(A1 * A2 * !A3 * !B2 * Y)	0.00151	0.00152	0.00151
	(A1 * !A2 * !B2 * Y)	-0.00037	-0.00037	-0.00037
	(A1 * !A2 * !B2 * Y)	0.00151	0.00152	0.00151
	(!A1 * !B2 * Y)	-0.00037	-0.00037	-0.00037
	(!A1 * !B2 * Y)	0.00151	0.00152	0.00151
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00202	-0.00204	-0.00227
	(A1 * A2 * A3 * B2 * !Y)	0.00169	0.00168	0.00150
	(A1 * A2 * A3 * !B2 * !Y)	-0.00212	-0.00220	-0.00219
	(A1 * A2 * A3 * !B2 * !Y)	0.00146	0.00146	0.00145
	(A1 * A2 * !A3 * !B2 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * A2 * !A3 * !B2 * Y)	0.00293	0.00294	0.00294
	(A1 * !A2 * !B2 * Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * !B2 * Y)	0.00293	0.00294	0.00294
	(!A1 * !B2 * Y)	-0.00075	-0.00076	-0.00075
	(!A1 * !B2 * Y)	0.00293	0.00294	0.00294

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00413	-0.00418	-0.00459
	(A1 * A2 * A3 * B2 * !Y)	0.00337	0.00336	0.00303
	(A1 * A2 * A3 * !B2 * !Y)	-0.00425	-0.00441	-0.00440
	(A1 * A2 * A3 * !B2 * !Y)	0.00295	0.00294	0.00293
	(A1 * A2 * !A3 * !B2 * Y)	-0.00145	-0.00145	-0.00144
	(A1 * A2 * !A3 * !B2 * Y)	0.00596	0.00599	0.00597
	(A1 * !A2 * !B2 * Y)	-0.00145	-0.00145	-0.00144
	(A1 * !A2 * !B2 * Y)	0.00596	0.00599	0.00597
	(!A1 * !B2 * Y)	-0.00145	-0.00146	-0.00145
	(!A1 * !B2 * Y)	0.00596	0.00599	0.00597

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)**	0.00118	0.00116	0.00116
	(A1 * A2 * A3 * B1 * !Y)	-0.00077	-0.00076	-0.00076
	(A1 * A2 * A3 * !B1 * !Y)	0.00110	0.00112	0.00111
	(A1 * A2 * A3 * !B1 * !Y)	-0.00075	-0.00076	-0.00076
	(A1 * A2 * !A3 * !B1 * Y)	0.00096	0.00097	0.00097
	(A1 * A2 * !A3 * !B1 * Y)	-0.00126	-0.00127	-0.00126
	(A1 * !A2 * !B1 * Y)	0.00096	0.00097	0.00097
	(A1 * !A2 * !B1 * Y)	-0.00126	-0.00127	-0.00126
	(!A1 * !B1 * Y)	0.00096	0.00097	0.00097
	(!A1 * !B1 * Y)	-0.00126	-0.00127	-0.00126

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00229	0.00230	0.00229
	(A1 * A2 * A3 * B1 * !Y)	-0.00149	-0.00149	-0.00149
	(A1 * A2 * A3 * !B1 * !Y)	0.00217	0.00221	0.00218
	(A1 * A2 * A3 * !B1 * !Y)	-0.00148	-0.00149	-0.00148
	(A1 * A2 * !A3 * !B1 * Y)	0.00191	0.00193	0.00192
	(A1 * A2 * !A3 * !B1 * Y)	-0.00247	-0.00248	-0.00248
	(A1 * !A2 * !B1 * Y)	0.00191	0.00193	0.00192
	(A1 * !A2 * !B1 * Y)	-0.00247	-0.00249	-0.00248
	(!A1 * !B1 * Y)	0.00191	0.00193	0.00192
	(!A1 * !B1 * Y)	-0.00247	-0.00248	-0.00248
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00452	0.00455	0.00454
	(A1 * A2 * A3 * B1 * !Y)	-0.00295	-0.00296	-0.00296
	(A1 * A2 * A3 * !B1 * !Y)	0.00427	0.00435	0.00429
	(A1 * A2 * A3 * !B1 * !Y)	-0.00295	-0.00296	-0.00295
	(A1 * A2 * !A3 * !B1 * Y)	0.00376	0.00377	0.00375
	(A1 * A2 * !A3 * !B1 * Y)	-0.00496	-0.00497	-0.00496
	(A1 * !A2 * !B1 * Y)	0.00376	0.00377	0.00375
	(A1 * !A2 * !B1 * Y)	-0.00496	-0.00497	-0.00496
	(!A1 * !B1 * Y)	0.00376	0.00377	0.00376
	(!A1 * !B1 * Y)	-0.00496	-0.00497	-0.00496

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)**	-0.00103	-0.00103	-0.00115
	(A1 * A2 * A3 * B1 * !Y)	0.00088	0.00087	0.00079
	(A1 * A2 * A3 * !B1 * !Y)	-0.00108	-0.00111	-0.00111
	(A1 * A2 * A3 * !B1 * !Y)	0.00076	0.00076	0.00076
	(A1 * A2 * !A3 * !B1 * Y)	-0.00095	-0.00097	-0.00097
	(A1 * A2 * !A3 * !B1 * Y)	0.00126	0.00127	0.00127
	(A1 * !A2 * !B1 * Y)	-0.00095	-0.00097	-0.00097
	(A1 * !A2 * !B1 * Y)	0.00126	0.00127	0.00127
	(!A1 * !B1 * Y)	-0.00095	-0.00097	-0.00097
	(!A1 * !B1 * Y)	0.00126	0.00127	0.00127
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00202	-0.00203	-0.00226
	(A1 * A2 * A3 * B1 * !Y)	0.00172	0.00171	0.00154
	(A1 * A2 * A3 * !B1 * !Y)	-0.00214	-0.00219	-0.00218
	(A1 * A2 * A3 * !B1 * !Y)	0.00148	0.00149	0.00148
	(A1 * A2 * !A3 * !B1 * Y)	-0.00188	-0.00193	-0.00192
	(A1 * A2 * !A3 * !B1 * Y)	0.00249	0.00249	0.00248
	(A1 * !A2 * !B1 * Y)	-0.00188	-0.00193	-0.00192
	(A1 * !A2 * !B1 * Y)	0.00249	0.00249	0.00248
	(!A1 * !B1 * Y)	-0.00188	-0.00193	-0.00192
	(!A1 * !B1 * Y)	0.00249	0.00249	0.00248
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00403	-0.00406	-0.00449
	(A1 * A2 * A3 * B1 * !Y)	0.00339	0.00337	0.00305
	(A1 * A2 * A3 * !B1 * !Y)	-0.00420	-0.00432	-0.00429
	(A1 * A2 * A3 * !B1 * !Y)	0.00296	0.00296	0.00295
	(A1 * A2 * !A3 * !B1 * Y)	-0.00366	-0.00377	-0.00375
	(A1 * A2 * !A3 * !B1 * Y)	0.00496	0.00499	0.00496
	(A1 * !A2 * !B1 * Y)	-0.00366	-0.00377	-0.00375
	(A1 * !A2 * !B1 * Y)	0.00496	0.00499	0.00496
	(!A1 * !B1 * Y)	-0.00367	-0.00377	-0.00376
	(!A1 * !B1 * Y)	0.00496	0.00499	0.00496

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32o_1	12.78720
sky130_fd_sc_hs__a32o_2	14.38560
sky130_fd_sc_hs__a32o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__a32o_1	0.00240	0.00235	0.00243	0.00242	0.00221	0.35561
sky130_fd_sc_hs__a32o_2	0.00258	0.00251	0.00259	0.00256	0.00239	0.67088
sky130_fd_sc_hs__a32o_4	0.00438	0.00487	0.00432	0.00462	0.00524	1.38258

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	0.00022	0.00027
sky130_fd_sc_hs__a32o_2	0.00000	0.00030	0.00036
sky130_fd_sc_hs__a32o_4	0.00000	0.00060	0.00073

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)	0.22826	1.28046	8.87792
	A2->X (RR)	0.23838	1.29235	9.05115
	A3->X (RR)	0.24425	1.27113	9.03266
	B1->X (RR)	0.18307	1.21547	8.75534
	B2->X (RR)	0.18688	1.21339	8.86328
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.22857	1.16106	9.01891
	A2->X (RR)	0.23893	1.16574	9.15498
	A3->X (RR)	0.24507	1.14161	9.11558
	B1->X (RR)	0.17945	1.09053	8.88618
	B2->X (RR)	0.18453	1.08409	8.97248
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.24245	1.05986	9.09593
	A2->X (RR)	0.25608	1.07423	9.26537
	A3->X (RR)	0.26256	1.04787	9.22496
	B1->X (RR)	0.18208	0.97395	8.94742
	B2->X (RR)	0.18812	0.97176	9.04230

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.56020	1.39604	7.15276
	A2->X (FF)	0.62263	1.46232	7.29196
	A3->X (FF)	0.66184	1.50396	7.38402
	B1->X (FF)	0.51463	1.29276	6.63231
	B2->X (FF)	0.56205	1.34713	6.76319
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.70916	1.54154	7.44871
	A2->X (FF)	0.78461	1.62232	7.59043
	A3->X (FF)	0.84595	1.68878	7.70421
	B1->X (FF)	0.67370	1.44787	7.01936
	B2->X (FF)	0.74454	1.52778	7.17233
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.65263	1.45759	7.42905
	A2->X (FF)	0.70512	1.51327	7.55430
	A3->X (FF)	0.78236	1.59788	7.69114
	B1->X (FF)	0.63880	1.38363	7.01700
	B2->X (FF)	0.68851	1.43718	7.12552

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.00739	0.00728	0.00713
	A1	0.00366	0.00354	0.00342
	A2	0.00785	0.00776	0.00763
	A2	0.00366	0.00357	0.00346
	A3	0.00840	0.00829	0.00814
	A3	0.00366	0.00354	0.00342
	B1	0.00625	0.00615	0.00608
	B1	0.00243	0.00234	0.00228
	B2	0.00671	0.00669	0.00664
	B2	0.00241	0.00239	0.00235
sky130_fd_sc_hs__a32o_2	A1	0.00940	0.00943	0.00934
	A1	0.00549	0.00551	0.00544
	A2	0.00994	0.01000	0.00995
	A2	0.00549	0.00554	0.00550
	A3	0.01060	0.01064	0.01055
	A3	0.00548	0.00553	0.00544
	B1	0.00843	0.00850	0.00848
	B1	0.00429	0.00436	0.00437
	B2	0.00900	0.00917	0.00917
	B2	0.00426	0.00442	0.00445

sky130_fd_sc_hs__a32o_4	**A1**	0.01763	0.01783	0.01791
	A1	0.01060	0.01081	0.01097
	A2	0.01890	0.01917	0.01926
	A2	0.01058	0.01084	0.01106
	A3	0.01984	0.02020	0.02032
	A3	0.01059	0.01093	0.01119
	B1	0.01540	0.01542	0.01547
	B1	0.00797	0.00801	0.00815
	B2	0.01701	0.01725	0.01724
	B2	0.00793	0.00816	0.00825

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00286	0.00285	0.00298
	A1	0.00681	0.00679	0.00674
	A2	0.00318	0.00320	0.00387
	A2	0.00754	0.00756	0.00751
	A3	0.00307	0.00304	0.00358
	A3	0.00823	0.00820	0.00812
	B1	0.00314	0.00307	0.00303
	B1	0.00686	0.00680	0.00673
	B2	0.00331	0.00333	0.00369
	B2	0.00748	0.00752	0.00744

sky130_fd_sc_hs__a32o_2	**A1**	0.00389	0.00409	0.00643
	A1	0.00848	0.00867	0.00866
	A2	0.00469	0.00491	0.00597
	A2	0.00936	0.00958	0.00958
	A3	0.00489	0.00502	0.00639
	A3	0.01015	0.01028	0.01022
	B1	0.00455	0.00464	0.00465
	B1	0.00857	0.00867	0.00863
	B2	0.00455	0.00476	0.00603
	B2	0.00942	0.00961	0.00956
sky130_fd_sc_hs__a32o_4	**A1**	0.00756	0.00804	0.01187
	A1	0.01564	0.01611	0.01618
	A2	0.00869	0.00917	0.00963
	A2	0.01742	0.01791	0.01797
	A3	0.00891	0.00949	0.01230
	A3	0.01900	0.01958	0.01964
	B1	0.00900	0.00932	0.01135
	B1	0.01620	0.01652	0.01658
	B2	0.00892	0.00935	0.01409
	B2	0.01769	0.01812	0.01818

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)**	0.00092	0.00092	0.00091
	(A2 * A3 * B1 * B2 * X)	-0.00103	-0.00105	-0.00105
	(A2 * !A3 * B1 * B2 * X)	0.00084	0.00084	0.00084
	(A2 * !A3 * B1 * B2 * X)	-0.00109	-0.00110	-0.00109
	(A2 * !A3 * B1 * !B2 * !X)	0.00035	0.00035	0.00032
	(A2 * !A3 * B1 * !B2 * !X)	-0.00129	-0.00129	-0.00133
	(A2 * !A3 * !B1 * !X)	0.00035	0.00035	0.00032
	(A2 * !A3 * !B1 * !X)	-0.00129	-0.00129	-0.00133
	(!A2 * B1 * B2 * X)	0.00086	0.00087	0.00086
	(!A2 * B1 * B2 * X)	-0.00109	-0.00110	-0.00109
	(!A2 * B1 * !B2 * !X)	0.00035	0.00035	0.00034
	(!A2 * B1 * !B2 * !X)	-0.00132	-0.00132	-0.00134
	(!A2 * !B1 * !X)	0.00035	0.00035	0.00034
	(!A2 * !B1 * !X)	-0.00132	-0.00132	-0.00134
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00106	0.00106	0.00105
	(A2 * A3 * B1 * B2 * X)	-0.00103	-0.00105	-0.00105
	(A2 * !A3 * B1 * B2 * X)	0.00097	0.00096	0.00096
	(A2 * !A3 * B1 * B2 * X)	-0.00109	-0.00109	-0.00109
	(A2 * !A3 * B1 * !B2 * !X)	0.00039	0.00039	0.00036
	(A2 * !A3 * B1 * !B2 * !X)	-0.00131	-0.00131	-0.00136
	(A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00036
	(A2 * !A3 * !B1 * !X)	-0.00131	-0.00131	-0.00136
	(!A2 * B1 * B2 * X)	0.00099	0.00099	0.00099
	(!A2 * B1 * B2 * X)	-0.00109	-0.00109	-0.00109
	(!A2 * B1 * !B2 * !X)	0.00039	0.00039	0.00038
	(!A2 * B1 * !B2 * !X)	-0.00134	-0.00135	-0.00137
	(!A2 * !B1 * !X)	0.00039	0.00039	0.00038
	(!A2 * !B1 * !X)	-0.00134	-0.00135	-0.00137

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00164	0.00164	0.00164
	(A2 * A3 * B1 * B2 * X)	-0.00205	-0.00210	-0.00210
	(A2 * !A3 * B1 * B2 * X)	0.00149	0.00149	0.00149
	(A2 * !A3 * B1 * B2 * X)	-0.00218	-0.00219	-0.00218
	(A2 * !A3 * B1 * !B2 * !X)	0.00065	0.00065	0.00059
	(A2 * !A3 * B1 * !B2 * !X)	-0.00242	-0.00244	-0.00254
	(A2 * !A3 * !B1 * !X)	0.00065	0.00065	0.00059
	(A2 * !A3 * !B1 * !X)	-0.00242	-0.00244	-0.00254
	(!A2 * B1 * B2 * X)	0.00154	0.00155	0.00154
	(!A2 * B1 * B2 * X)	-0.00218	-0.00219	-0.00218
	(!A2 * B1 * !B2 * !X)	0.00062	0.00063	0.00060
	(!A2 * B1 * !B2 * !X)	-0.00250	-0.00252	-0.00256
	(!A2 * !B1 * !X)	0.00062	0.00063	0.00060
	(!A2 * !B1 * !X)	-0.00250	-0.00252	-0.00256

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)**	-0.00092	-0.00091	-0.00091
	(A2 * A3 * B1 * B2 * X)	0.00106	0.00105	0.00105
	(A2 * !A3 * B1 * B2 * X)	-0.00079	-0.00084	-0.00084
	(A2 * !A3 * B1 * B2 * X)	0.00109	0.00110	0.00110
	(A2 * !A3 * B1 * !B2 * !X)	-0.00033	-0.00032	-0.00032
	(A2 * !A3 * B1 * !B2 * !X)	0.00135	0.00134	0.00134
	(A2 * !A3 * !B1 * !X)	-0.00033	-0.00032	-0.00032
	(A2 * !A3 * !B1 * !X)	0.00135	0.00134	0.00134
	(!A2 * B1 * B2 * X)	-0.00084	-0.00087	-0.00086
	(!A2 * B1 * B2 * X)	0.00110	0.00110	0.00110
	(!A2 * B1 * !B2 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * B1 * !B2 * !X)	0.00133	0.00134	0.00134
	(!A2 * !B1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * !X)	0.00135	0.00134	0.00134
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00105	-0.00105	-0.00105
	(A2 * A3 * B1 * B2 * X)	0.00106	0.00105	0.00105
	(A2 * !A3 * B1 * B2 * X)	-0.00091	-0.00096	-0.00096
	(A2 * !A3 * B1 * B2 * X)	0.00109	0.00110	0.00109
	(A2 * !A3 * B1 * !B2 * !X)	-0.00037	-0.00036	-0.00036
	(A2 * !A3 * B1 * !B2 * !X)	0.00138	0.00137	0.00137
	(A2 * !A3 * !B1 * !X)	-0.00037	-0.00036	-0.00036
	(A2 * !A3 * !B1 * !X)	0.00138	0.00137	0.00137
	(!A2 * B1 * B2 * X)	-0.00097	-0.00099	-0.00099
	(!A2 * B1 * B2 * X)	0.00109	0.00110	0.00109
	(!A2 * B1 * !B2 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * B1 * !B2 * !X)	0.00136	0.00137	0.00137
	(!A2 * !B1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * !X)	0.00138	0.00137	0.00137

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00164	-0.00164	-0.00164
	(A2 * A3 * B1 * B2 * X)	0.00209	0.00210	0.00210
	(A2 * !A3 * B1 * B2 * X)	-0.00140	-0.00149	-0.00149
	(A2 * !A3 * B1 * B2 * X)	0.00218	0.00221	0.00219
	(A2 * !A3 * B1 * !B2 * !X)	-0.00057	-0.00057	-0.00056
	(A2 * !A3 * B1 * !B2 * !X)	0.00255	0.00256	0.00256
	(A2 * !A3 * !B1 * !X)	-0.00057	-0.00057	-0.00056
	(A2 * !A3 * !B1 * !X)	0.00255	0.00256	0.00256
	(!A2 * B1 * B2 * X)	-0.00150	-0.00155	-0.00154
	(!A2 * B1 * B2 * X)	0.00218	0.00221	0.00219
	(!A2 * B1 * !B2 * !X)	-0.00058	-0.00059	-0.00059
	(!A2 * B1 * !B2 * !X)	0.00255	0.00256	0.00256
	(!A2 * !B1 * !X)	-0.00058	-0.00059	-0.00059
	(!A2 * !B1 * !X)	0.00255	0.00256	0.00256

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)**	0.00090	0.00090	0.00089
	(A1 * A3 * B1 * B2 * X)	-0.00103	-0.00105	-0.00105
	(A1 * !A3 * B1 * B2 * X)	0.00084	0.00084	0.00084
	(A1 * !A3 * B1 * B2 * X)	-0.00110	-0.00110	-0.00109
	(A1 * !A3 * B1 * !B2 * !X)	0.00040	0.00040	0.00040
	(A1 * !A3 * B1 * !B2 * !X)	-0.00118	-0.00118	-0.00117
	(A1 * !A3 * !B1 * !X)	0.00040	0.00040	0.00040
	(A1 * !A3 * !B1 * !X)	-0.00118	-0.00118	-0.00117
	(!A1 * A3 * B1 * B2 * X)	0.00084	0.00085	0.00085
	(!A1 * A3 * B1 * B2 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * A3 * B1 * !B2 * !X)	0.00077	0.00077	0.00077
	(!A1 * A3 * B1 * !B2 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * A3 * !B1 * !X)	0.00077	0.00077	0.00077
	(!A1 * A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A3 * B1 * B2 * X)	0.00055	0.00056	0.00056
	(!A1 * !A3 * B1 * B2 * X)	-0.00109	-0.00110	-0.00109
	(!A1 * !A3 * B1 * !B2 * !X)	0.00044	0.00044	0.00043
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A3 * !B1 * !X)	0.00044	0.00044	0.00043
	(!A1 * !A3 * !B1 * !X)	-0.00118	-0.00118	-0.00118

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00104	0.00104	0.00103
	(A1 * A3 * B1 * B2 * X)	-0.00103	-0.00105	-0.00105
	(A1 * !A3 * B1 * B2 * X)	0.00096	0.00096	0.00096
	(A1 * !A3 * B1 * B2 * X)	-0.00109	-0.00109	-0.00109
	(A1 * !A3 * B1 * !B2 * !X)	0.00046	0.00046	0.00046
	(A1 * !A3 * B1 * !B2 * !X)	-0.00117	-0.00118	-0.00117
	(A1 * !A3 * !B1 * !X)	0.00046	0.00046	0.00046
	(A1 * !A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * A3 * B1 * B2 * X)	0.00097	0.00097	0.00097
	(!A1 * A3 * B1 * B2 * X)	-0.00108	-0.00109	-0.00109
	(!A1 * A3 * B1 * !B2 * !X)	0.00089	0.00090	0.00089
	(!A1 * A3 * B1 * !B2 * !X)	-0.00116	-0.00118	-0.00117
	(!A1 * A3 * !B1 * !X)	0.00089	0.00090	0.00089
	(!A1 * A3 * !B1 * !X)	-0.00116	-0.00118	-0.00117
	(!A1 * !A3 * B1 * B2 * X)	0.00063	0.00063	0.00063
	(!A1 * !A3 * B1 * B2 * X)	-0.00109	-0.00109	-0.00109
	(!A1 * !A3 * B1 * !B2 * !X)	0.00050	0.00050	0.00050
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A3 * !B1 * !X)	0.00050	0.00050	0.00050
	(!A1 * !A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00176	0.00175	0.00175
	(A1 * A3 * B1 * B2 * X)	-0.00225	-0.00227	-0.00228
	(A1 * !A3 * B1 * B2 * X)	0.00165	0.00166	0.00165
	(A1 * !A3 * B1 * B2 * X)	-0.00240	-0.00241	-0.00240
	(A1 * !A3 * B1 * !B2 * !X)	0.00083	0.00083	0.00082
	(A1 * !A3 * B1 * !B2 * !X)	-0.00252	-0.00252	-0.00251
	(A1 * !A3 * !B1 * !X)	0.00083	0.00083	0.00082
	(A1 * !A3 * !B1 * !X)	-0.00252	-0.00252	-0.00251
	(!A1 * A3 * B1 * B2 * X)	0.00166	0.00166	0.00165
	(!A1 * A3 * B1 * B2 * X)	-0.00241	-0.00241	-0.00240
	(!A1 * A3 * B1 * !B2 * !X)	0.00154	0.00154	0.00153
	(!A1 * A3 * B1 * !B2 * !X)	-0.00252	-0.00252	-0.00251
	(!A1 * A3 * !B1 * !X)	0.00154	0.00154	0.00153
	(!A1 * A3 * !B1 * !X)	-0.00252	-0.00252	-0.00251
	(!A1 * !A3 * B1 * B2 * X)	0.00112	0.00113	0.00112
	(!A1 * !A3 * B1 * B2 * X)	-0.00239	-0.00240	-0.00240
	(!A1 * !A3 * B1 * !B2 * !X)	0.00092	0.00092	0.00091
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00253	-0.00253	-0.00253
	(!A1 * !A3 * !B1 * !X)	0.00092	0.00092	0.00091
	(!A1 * !A3 * !B1 * !X)	-0.00253	-0.00253	-0.00253

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)**	-0.00089	-0.00089	-0.00089
	(A1 * A3 * B1 * B2 * X)	0.00106	0.00105	0.00105
	(A1 * !A3 * B1 * B2 * X)	-0.00081	-0.00084	-0.00084
	(A1 * !A3 * B1 * B2 * X)	0.00110	0.00111	0.00110
	(A1 * !A3 * B1 * !B2 * !X)	-0.00038	-0.00038	-0.00039
	(A1 * !A3 * B1 * !B2 * !X)	0.00119	0.00120	0.00118
	(A1 * !A3 * !B1 * !X)	-0.00038	-0.00038	-0.00039
	(A1 * !A3 * !B1 * !X)	0.00119	0.00120	0.00118
	(!A1 * A3 * B1 * B2 * X)	-0.00082	-0.00085	-0.00085
	(!A1 * A3 * B1 * B2 * X)	0.00109	0.00111	0.00110
	(!A1 * A3 * B1 * !B2 * !X)	-0.00074	-0.00077	-0.00077
	(!A1 * A3 * B1 * !B2 * !X)	0.00117	0.00118	0.00117
	(!A1 * A3 * !B1 * !X)	-0.00074	-0.00077	-0.00077
	(!A1 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * !A3 * B1 * B2 * X)	-0.00055	-0.00056	-0.00056
	(!A1 * !A3 * B1 * B2 * X)	0.00109	0.00110	0.00110
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A3 * B1 * !B2 * !X)	0.00118	0.00118	0.00118
	(!A1 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A3 * !B1 * !X)	0.00118	0.00118	0.00118

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00103	-0.00103	-0.00103
	(A1 * A3 * B1 * B2 * X)	0.00104	0.00105	0.00105
	(A1 * !A3 * B1 * B2 * X)	-0.00093	-0.00096	-0.00096
	(A1 * !A3 * B1 * B2 * X)	0.00109	0.00110	0.00109
	(A1 * !A3 * B1 * !B2 * !X)	-0.00043	-0.00044	-0.00045
	(A1 * !A3 * B1 * !B2 * !X)	0.00119	0.00120	0.00118
	(A1 * !A3 * !B1 * !X)	-0.00043	-0.00044	-0.00045
	(A1 * !A3 * !B1 * !X)	0.00119	0.00120	0.00118
	(!A1 * A3 * B1 * B2 * X)	-0.00095	-0.00097	-0.00097
	(!A1 * A3 * B1 * B2 * X)	0.00108	0.00110	0.00109
	(!A1 * A3 * B1 * !B2 * !X)	-0.00087	-0.00090	-0.00089
	(!A1 * A3 * B1 * !B2 * !X)	0.00116	0.00118	0.00117
	(!A1 * A3 * !B1 * !X)	-0.00087	-0.00090	-0.00089
	(!A1 * A3 * !B1 * !X)	0.00116	0.00118	0.00117
	(!A1 * !A3 * B1 * B2 * X)	-0.00063	-0.00063	-0.00063
	(!A1 * !A3 * B1 * B2 * X)	0.00109	0.00109	0.00109
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A3 * B1 * !B2 * !X)	0.00117	0.00118	0.00118
	(!A1 * !A3 * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A3 * !B1 * !X)	0.00117	0.00118	0.00118

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00175	-0.00175	-0.00175
	(A1 * A3 * B1 * B2 * X)	0.00228	0.00227	0.00228
	(A1 * !A3 * B1 * B2 * X)	-0.00160	-0.00166	-0.00165
	(A1 * !A3 * B1 * B2 * X)	0.00240	0.00243	0.00241
	(A1 * !A3 * B1 * !B2 * !X)	-0.00077	-0.00078	-0.00079
	(A1 * !A3 * B1 * !B2 * !X)	0.00257	0.00257	0.00253
	(A1 * !A3 * !B1 * !X)	-0.00077	-0.00078	-0.00079
	(A1 * !A3 * !B1 * !X)	0.00256	0.00257	0.00253
	(!A1 * A3 * B1 * B2 * X)	-0.00161	-0.00166	-0.00165
	(!A1 * A3 * B1 * B2 * X)	0.00242	0.00242	0.00240
	(!A1 * A3 * B1 * !B2 * !X)	-0.00150	-0.00154	-0.00153
	(!A1 * A3 * B1 * !B2 * !X)	0.00253	0.00254	0.00252
	(!A1 * A3 * !B1 * !X)	-0.00150	-0.00154	-0.00153
	(!A1 * A3 * !B1 * !X)	0.00253	0.00254	0.00252
	(!A1 * !A3 * B1 * B2 * X)	-0.00112	-0.00113	-0.00112
	(!A1 * !A3 * B1 * B2 * X)	0.00240	0.00240	0.00241
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00092	-0.00092	-0.00091
	(!A1 * !A3 * B1 * !B2 * !X)	0.00253	0.00253	0.00254
	(!A1 * !A3 * !B1 * !X)	-0.00092	-0.00092	-0.00091
	(!A1 * !A3 * !B1 * !X)	0.00253	0.00253	0.00254

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)**	0.00102	0.00102	0.00101
	(A1 * A2 * B1 * B2 * X)	-0.00102	-0.00103	-0.00104
	(A1 * !A2 * B1 * !B2 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * B1 * !B2 * !X)	-0.00125	-0.00126	-0.00126
	(A1 * !A2 * !B1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !B1 * !X)	-0.00125	-0.00126	-0.00126
	(!A2 * B1 * B2 * X)	0.00095	0.00096	0.00095
	(!A2 * B1 * B2 * X)	-0.00107	-0.00108	-0.00108
	(!A1 * A2 * B1 * B2 * X)	0.00094	0.00095	0.00094
	(!A1 * A2 * B1 * B2 * X)	-0.00108	-0.00108	-0.00108
	(!A1 * A2 * B1 * !B2 * !X)	0.00076	0.00077	0.00076
	(!A1 * A2 * B1 * !B2 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * A2 * !B1 * !X)	0.00076	0.00077	0.00076
	(!A1 * A2 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * !A2 * B1 * !B2 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00125	-0.00126	-0.00126
	(!A1 * !A2 * !B1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * !B1 * !X)	-0.00125	-0.00126	-0.00126

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00115	0.00116	0.00115
	(A1 * A2 * B1 * B2 * X)	-0.00101	-0.00104	-0.00104
	(A1 * !A2 * B1 * !B2 * !X)	0.00090	0.00092	0.00091
	(A1 * !A2 * B1 * !B2 * !X)	-0.00125	-0.00126	-0.00126
	(A1 * !A2 * !B1 * !X)	0.00090	0.00092	0.00091
	(A1 * !A2 * !B1 * !X)	-0.00125	-0.00126	-0.00126
	(!A2 * B1 * B2 * X)	0.00108	0.00109	0.00108
	(!A2 * B1 * B2 * X)	-0.00108	-0.00109	-0.00108
	(!A1 * A2 * B1 * B2 * X)	0.00107	0.00108	0.00107
	(!A1 * A2 * B1 * B2 * X)	-0.00108	-0.00109	-0.00108
	(!A1 * A2 * B1 * !B2 * !X)	0.00089	0.00089	0.00089
	(!A1 * A2 * B1 * !B2 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * A2 * !B1 * !X)	0.00089	0.00090	0.00089
	(!A1 * A2 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * !A2 * B1 * !B2 * !X)	0.00090	0.00092	0.00091
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00125	-0.00126	-0.00126
	(!A1 * !A2 * !B1 * !X)	0.00090	0.00092	0.00091
	(!A1 * !A2 * !B1 * !X)	-0.00125	-0.00126	-0.00126

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00173	0.00173	0.00173
	(A1 * A2 * B1 * B2 * X)	-0.00215	-0.00220	-0.00220
	(A1 * !A2 * B1 * !B2 * !X)	0.00163	0.00163	0.00163
	(A1 * !A2 * B1 * !B2 * !X)	-0.00231	-0.00232	-0.00231
	(A1 * !A2 * !B1 * !X)	0.00163	0.00163	0.00163
	(A1 * !A2 * !B1 * !X)	-0.00231	-0.00232	-0.00231
	(!A2 * B1 * B2 * X)	0.00164	0.00165	0.00164
	(!A2 * B1 * B2 * X)	-0.00231	-0.00232	-0.00231
	(!A1 * A2 * B1 * B2 * X)	0.00158	0.00159	0.00158
	(!A1 * A2 * B1 * B2 * X)	-0.00231	-0.00231	-0.00231
	(!A1 * A2 * B1 * !B2 * !X)	0.00158	0.00158	0.00158
	(!A1 * A2 * B1 * !B2 * !X)	-0.00231	-0.00232	-0.00231
	(!A1 * A2 * !B1 * !X)	0.00157	0.00158	0.00158
	(!A1 * A2 * !B1 * !X)	-0.00231	-0.00232	-0.00231
	(!A1 * !A2 * B1 * !B2 * !X)	0.00162	0.00163	0.00162
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00231	-0.00232	-0.00231
	(!A1 * !A2 * !B1 * !X)	0.00162	0.00164	0.00162
	(!A1 * !A2 * !B1 * !X)	-0.00231	-0.00232	-0.00231

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)**	-0.00101	-0.00101	-0.00101
	(A1 * A2 * B1 * B2 * X)	0.00104	0.00103	0.00104
	(A1 * !A2 * B1 * !B2 * !X)	-0.00076	-0.00078	-0.00077
	(A1 * !A2 * B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B1 * !X)	-0.00076	-0.00078	-0.00077
	(A1 * !A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A2 * B1 * B2 * X)	-0.00094	-0.00096	-0.00095
	(!A2 * B1 * B2 * X)	0.00108	0.00109	0.00108
	(!A1 * A2 * B1 * B2 * X)	-0.00091	-0.00095	-0.00094
	(!A1 * A2 * B1 * B2 * X)	0.00108	0.00108	0.00108
	(!A1 * A2 * B1 * !B2 * !X)	-0.00073	-0.00077	-0.00076
	(!A1 * A2 * B1 * !B2 * !X)	0.00126	0.00126	0.00126
	(!A1 * A2 * !B1 * !X)	-0.00073	-0.00077	-0.00076
	(!A1 * A2 * !B1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00076	-0.00078	-0.00077
	(!A1 * !A2 * B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * !B1 * !X)	-0.00076	-0.00078	-0.00077
	(!A1 * !A2 * !B1 * !X)	0.00126	0.00127	0.00126

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00115	-0.00115	-0.00115
	(A1 * A2 * B1 * B2 * X)	0.00104	0.00104	0.00104
	(A1 * !A2 * B1 * !B2 * !X)	-0.00089	-0.00091	-0.00091
	(A1 * !A2 * B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B1 * !X)	-0.00089	-0.00091	-0.00091
	(A1 * !A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A2 * B1 * B2 * X)	-0.00106	-0.00109	-0.00108
	(!A2 * B1 * B2 * X)	0.00108	0.00109	0.00108
	(!A1 * A2 * B1 * B2 * X)	-0.00103	-0.00108	-0.00107
	(!A1 * A2 * B1 * B2 * X)	0.00108	0.00109	0.00108
	(!A1 * A2 * B1 * !B2 * !X)	-0.00085	-0.00089	-0.00089
	(!A1 * A2 * B1 * !B2 * !X)	0.00126	0.00126	0.00126
	(!A1 * A2 * !B1 * !X)	-0.00085	-0.00090	-0.00089
	(!A1 * A2 * !B1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00089	-0.00091	-0.00091
	(!A1 * !A2 * B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * !B1 * !X)	-0.00089	-0.00091	-0.00091
	(!A1 * !A2 * !B1 * !X)	0.00126	0.00127	0.00126

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00172	-0.00173	-0.00173
	(A1 * A2 * B1 * B2 * X)	0.00218	0.00220	0.00220
	(A1 * !A2 * B1 * !B2 * !X)	-0.00158	-0.00163	-0.00163
	(A1 * !A2 * B1 * !B2 * !X)	0.00232	0.00233	0.00232
	(A1 * !A2 * !B1 * !X)	-0.00158	-0.00163	-0.00163
	(A1 * !A2 * !B1 * !X)	0.00232	0.00233	0.00232
	(!A2 * B1 * B2 * X)	-0.00160	-0.00164	-0.00164
	(!A2 * B1 * B2 * X)	0.00231	0.00233	0.00231
	(!A1 * A2 * B1 * B2 * X)	-0.00151	-0.00159	-0.00158
	(!A1 * A2 * B1 * B2 * X)	0.00231	0.00232	0.00231
	(!A1 * A2 * B1 * !B2 * !X)	-0.00150	-0.00158	-0.00158
	(!A1 * A2 * B1 * !B2 * !X)	0.00232	0.00233	0.00232
	(!A1 * A2 * !B1 * !X)	-0.00150	-0.00158	-0.00158
	(!A1 * A2 * !B1 * !X)	0.00232	0.00233	0.00232
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00159	-0.00163	-0.00162
	(!A1 * !A2 * B1 * !B2 * !X)	0.00232	0.00233	0.00232
	(!A1 * !A2 * !B1 * !X)	-0.00159	-0.00164	-0.00162
	(!A1 * !A2 * !B1 * !X)	0.00232	0.00233	0.00232

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)**	0.00100	0.00099	0.00099
	(A1 * A2 * A3 * B2 * X)	-0.00068	-0.00066	-0.00066
	(A1 * A2 * A3 * !B2 * X)	0.00094	0.00095	0.00094
	(A1 * A2 * A3 * !B2 * X)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * !A3 * !B2 * !X)	0.00033	0.00033	0.00032
	(A1 * A2 * !A3 * !B2 * !X)	-0.00130	-0.00131	-0.00132
	(A1 * !A2 * !B2 * !X)	0.00033	0.00033	0.00032
	(A1 * !A2 * !B2 * !X)	-0.00130	-0.00131	-0.00132
	(!A1 * !B2 * !X)	0.00033	0.00033	0.00032
	(!A1 * !B2 * !X)	-0.00130	-0.00131	-0.00132
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00111	0.00111	0.00111
	(A1 * A2 * A3 * B2 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * A3 * !B2 * X)	0.00106	0.00107	0.00106
	(A1 * A2 * A3 * !B2 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !A3 * !B2 * !X)	0.00041	0.00041	0.00040
	(A1 * A2 * !A3 * !B2 * !X)	-0.00130	-0.00130	-0.00132
	(A1 * !A2 * !B2 * !X)	0.00041	0.00041	0.00040
	(A1 * !A2 * !B2 * !X)	-0.00130	-0.00130	-0.00132
	(!A1 * !B2 * !X)	0.00041	0.00041	0.00040
	(!A1 * !B2 * !X)	-0.00130	-0.00130	-0.00132
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00198	0.00198	0.00199
	(A1 * A2 * A3 * B2 * X)	-0.00134	-0.00134	-0.00133
	(A1 * A2 * A3 * !B2 * X)	0.00186	0.00187	0.00186
	(A1 * A2 * A3 * !B2 * X)	-0.00133	-0.00134	-0.00133
	(A1 * A2 * !A3 * !B2 * !X)	0.00063	0.00062	0.00060
	(A1 * A2 * !A3 * !B2 * !X)	-0.00264	-0.00263	-0.00266
	(A1 * !A2 * !B2 * !X)	0.00063	0.00062	0.00060
	(A1 * !A2 * !B2 * !X)	-0.00264	-0.00263	-0.00266
	(!A1 * !B2 * !X)	0.00063	0.00062	0.00060
	(!A1 * !B2 * !X)	-0.00264	-0.00263	-0.00266

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)	-0.00088	-0.00089	-0.00099
	(A1 * A2 * A3 * B2 * X)	0.00077	0.00076	0.00068
	(A1 * A2 * A3 * !B2 * X)	-0.00092	-0.00095	-0.00094
	(A1 * A2 * A3 * !B2 * X)	0.00066	0.00067	0.00066
	(A1 * A2 * !A3 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * A2 * !A3 * !B2 * !X)	0.00131	0.00132	0.00132
	(A1 * !A2 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(A1 * !A2 * !B2 * !X)	0.00131	0.00132	0.00132
	(!A1 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !B2 * !X)	0.00131	0.00132	0.00132
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00100	-0.00101	-0.00110
	(A1 * A2 * A3 * B2 * X)	0.00077	0.00076	0.00069
	(A1 * A2 * A3 * !B2 * X)	-0.00104	-0.00107	-0.00106
	(A1 * A2 * A3 * !B2 * X)	0.00067	0.00067	0.00067
	(A1 * A2 * !A3 * !B2 * !X)	-0.00040	-0.00039	-0.00039
	(A1 * A2 * !A3 * !B2 * !X)	0.00133	0.00132	0.00132
	(A1 * !A2 * !B2 * !X)	-0.00040	-0.00039	-0.00039
	(A1 * !A2 * !B2 * !X)	0.00133	0.00132	0.00132
	(!A1 * !B2 * !X)	-0.00040	-0.00039	-0.00039
	(!A1 * !B2 * !X)	0.00133	0.00132	0.00132

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00174	-0.00176	-0.00197
	(A1 * A2 * A3 * B2 * X)	0.00155	0.00154	0.00138
	(A1 * A2 * A3 * !B2 * X)	-0.00181	-0.00187	-0.00186
	(A1 * A2 * A3 * !B2 * X)	0.00133	0.00134	0.00133
	(A1 * A2 * !A3 * !B2 * !X)	-0.00059	-0.00059	-0.00059
	(A1 * A2 * !A3 * !B2 * !X)	0.00266	0.00266	0.00266
	(A1 * !A2 * !B2 * !X)	-0.00059	-0.00059	-0.00059
	(A1 * !A2 * !B2 * !X)	0.00266	0.00266	0.00266
	(!A1 * !B2 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !B2 * !X)	0.00266	0.00266	0.00266

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)**	0.00098	0.00097	0.00097
	(A1 * A2 * A3 * B1 * X)	-0.00070	-0.00069	-0.00069
	(A1 * A2 * A3 * !B1 * X)	0.00092	0.00094	0.00092
	(A1 * A2 * A3 * !B1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * A2 * !A3 * !B1 * !X)	0.00083	0.00085	0.00083
	(A1 * A2 * !A3 * !B1 * !X)	-0.00111	-0.00112	-0.00111
	(A1 * !A2 * !B1 * !X)	0.00083	0.00085	0.00083
	(A1 * !A2 * !B1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !B1 * !X)	0.00083	0.00085	0.00083
	(!A1 * !B1 * !X)	-0.00111	-0.00112	-0.00111

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00114	0.00112	0.00112
	(A1 * A2 * A3 * B1 * X)	-0.00071	-0.00070	-0.00070
	(A1 * A2 * A3 * !B1 * X)	0.00108	0.00109	0.00108
	(A1 * A2 * A3 * !B1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * A2 * !A3 * !B1 * !X)	0.00099	0.00100	0.00099
	(A1 * A2 * !A3 * !B1 * !X)	-0.00111	-0.00112	-0.00112
	(A1 * !A2 * !B1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A2 * !B1 * !X)	-0.00111	-0.00112	-0.00112
	(!A1 * !B1 * !X)	0.00098	0.00100	0.00099
	(!A1 * !B1 * !X)	-0.00111	-0.00112	-0.00112
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00254	0.00256	0.00255
	(A1 * A2 * A3 * B1 * X)	-0.00139	-0.00139	-0.00139
	(A1 * A2 * A3 * !B1 * X)	0.00242	0.00244	0.00242
	(A1 * A2 * A3 * !B1 * X)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * !A3 * !B1 * !X)	0.00209	0.00211	0.00209
	(A1 * A2 * !A3 * !B1 * !X)	-0.00237	-0.00238	-0.00237
	(A1 * !A2 * !B1 * !X)	0.00209	0.00211	0.00210
	(A1 * !A2 * !B1 * !X)	-0.00237	-0.00238	-0.00237
	(!A1 * !B1 * !X)	0.00209	0.00211	0.00210
	(!A1 * !B1 * !X)	-0.00237	-0.00238	-0.00237

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)**	-0.00085	-0.00086	-0.00096
	(A1 * A2 * A3 * B1 * X)	0.00079	0.00079	0.00071
	(A1 * A2 * A3 * !B1 * X)	-0.00091	-0.00093	-0.00092
	(A1 * A2 * A3 * !B1 * X)	0.00069	0.00069	0.00069
	(A1 * A2 * !A3 * !B1 * !X)	-0.00082	-0.00084	-0.00083
	(A1 * A2 * !A3 * !B1 * !X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !B1 * !X)	-0.00082	-0.00084	-0.00083
	(A1 * !A2 * !B1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !B1 * !X)	-0.00082	-0.00084	-0.00083
	(!A1 * !B1 * !X)	0.00111	0.00112	0.00111
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00101	-0.00102	-0.00111
	(A1 * A2 * A3 * B1 * X)	0.00080	0.00080	0.00072
	(A1 * A2 * A3 * !B1 * X)	-0.00106	-0.00108	-0.00108
	(A1 * A2 * A3 * !B1 * X)	0.00070	0.00070	0.00070
	(A1 * A2 * !A3 * !B1 * !X)	-0.00097	-0.00100	-0.00099
	(A1 * A2 * !A3 * !B1 * !X)	0.00111	0.00112	0.00112
	(A1 * !A2 * !B1 * !X)	-0.00097	-0.00100	-0.00099
	(A1 * !A2 * !B1 * !X)	0.00111	0.00112	0.00112
	(!A1 * !B1 * !X)	-0.00097	-0.00100	-0.00099
	(!A1 * !B1 * !X)	0.00111	0.00112	0.00112
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00230	-0.00232	-0.00252
	(A1 * A2 * A3 * B1 * X)	0.00159	0.00159	0.00143
	(A1 * A2 * A3 * !B1 * X)	-0.00239	-0.00244	-0.00242
	(A1 * A2 * A3 * !B1 * X)	0.00139	0.00139	0.00138
	(A1 * A2 * !A3 * !B1 * !X)	-0.00205	-0.00211	-0.00209
	(A1 * A2 * !A3 * !B1 * !X)	0.00237	0.00239	0.00237
	(A1 * !A2 * !B1 * !X)	-0.00206	-0.00211	-0.00210
	(A1 * !A2 * !B1 * !X)	0.00237	0.00239	0.00237
	(!A1 * !B1 * !X)	-0.00206	-0.00211	-0.00210
	(!A1 * !B1 * !X)	0.00237	0.00239	0.00237

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	Y
0	x	x	x	0	1
x	x	x	x	1	0
1	0	x	x	0	1
1	1	0	x	0	1
1	1	1	0	0	1
1	1	1	1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41oi_1	11.18880
sky130_fd_sc_hs__a41oi_2	19.18080
sky130_fd_sc_hs__a41oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__a41oi_1	0.00265	0.00266	0.00261	0.00264	0.00274	0.15212
sky130_fd_sc_hs__a41oi_2	0.00512	0.00490	0.00482	0.00480	0.00398	0.29910
sky130_fd_sc_hs__a41oi_4	0.01000	0.00948	0.00957	0.00948	0.00786	0.55321

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.00010	0.00017
sky130_fd_sc_hs__a41oi_2	0.00000	0.00018	0.00030
sky130_fd_sc_hs__a41oi_4	0.00000	0.00036	0.00061

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)	0.32783	1.94185	13.49790
	A2->Y (FR)	0.40377	2.03368	13.68290
	A3->Y (FR)	0.45293	2.07128	13.59820
	A4->Y (FR)	0.48549	2.07202	13.37460
	B1->Y (FR)	0.30567	1.87365	13.28400
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.25968	1.67416	13.58710
	A2->Y (FR)	0.33067	1.72611	13.48080
	A3->Y (FR)	0.38673	1.79477	13.59580
	A4->Y (FR)	0.44948	1.87075	13.69170
	B1->Y (FR)	0.33902	1.69822	13.27890
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.23741	1.46215	13.21140
	A2->Y (FR)	0.31600	1.52781	13.15480
	A3->Y (FR)	0.38270	1.61406	13.35770
	A4->Y (FR)	0.44724	1.70199	13.58040
	B1->Y (FR)	0.34233	1.54281	13.23950

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.07648	0.73543	5.52709
	A2->Y (RF)	0.09224	0.73695	5.44705
	A3->Y (RF)	0.10102	0.70634	5.09264
	A4->Y (RF)	0.10621	0.67829	4.74906
	B1->Y (RF)	0.03743	0.50207	3.96653
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.06480	0.70555	5.94728
	A2->Y (RF)	0.08579	0.71349	5.84844
	A3->Y (RF)	0.09529	0.66716	5.31249
	A4->Y (RF)	0.10240	0.64680	4.97210
	B1->Y (RF)	0.04041	0.58493	5.15138
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.06138	0.64985	5.98603
	A2->Y (RF)	0.08543	0.66070	5.84503
	A3->Y (RF)	0.09681	0.62109	5.32384
	A4->Y (RF)	0.10204	0.58989	4.88477
	B1->Y (RF)	0.03844	0.52671	5.03872

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00030	0.00020	0.00017
	A1	0.00418	0.00407	0.00404
	A2	0.00080	0.00067	0.00063
	A2	0.00516	0.00502	0.00500
	A3	0.00120	0.00108	0.00104
	A3	0.00602	0.00590	0.00586
	A4	0.00143	0.00134	0.00130
	A4	0.00681	0.00670	0.00666
	B1	0.00138	0.00125	0.00121
	B1	0.00610	0.00597	0.00591
sky130_fd_sc_hs__a41oi_2	A1	-0.00040	-0.00054	-0.00055
	A1	0.00656	0.00645	0.00644
	A2	0.00072	0.00044	0.00042
	A2	0.00884	0.00854	0.00850
	A3	0.00143	0.00120	0.00115
	A3	0.01050	0.01026	0.01022
	A4	0.00232	0.00212	0.00206
	A4	0.01249	0.01227	0.01221
	B1	0.00291	0.00277	0.00271
	B1	0.01073	0.01061	0.01049

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00125	-0.00151	-0.00148
	A1	0.01264	0.01235	0.01245
	A2	0.00129	0.00072	0.00068
	A2	0.01738	0.01674	0.01675
	A3	0.00276	0.00220	0.00213
	A3	0.02101	0.02043	0.02037
	A4	0.00418	0.00379	0.00369
	A4	0.02449	0.02410	0.02393
	B1	0.00542	0.00513	0.00503
	B1	0.02103	0.02077	0.02057

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00473	0.00466	0.00464
	A1	0.00098	0.00088	0.00080
	A2	0.00527	0.00518	0.00519
	A2	0.00099	0.00090	0.00082
	A3	0.00578	0.00571	0.00560
	A3	0.00097	0.00088	0.00081
	A4	0.00639	0.00633	0.00625
	A4	0.00098	0.00088	0.00080
	B1	0.00469	0.00467	0.00464
	B1	-0.00017	-0.00019	-0.00023

sky130_fd_sc_hs__a41oi_2	**A1**	0.00834	0.00813	0.00792
	A1	0.00156	0.00131	0.00119
	A2	0.00953	0.00937	0.00921
	A2	0.00155	0.00135	0.00122
	A3	0.01058	0.01041	0.01027
	A3	0.00154	0.00134	0.00121
	A4	0.01180	0.01160	0.01155
	A4	0.00152	0.00133	0.00118
	B1	0.00722	0.00722	0.00730
	B1	-0.00095	-0.00098	-0.00098
sky130_fd_sc_hs__a41oi_4	**A1**	0.01624	0.01569	0.01580
	A1	0.00275	0.00223	0.00202
	A2	0.01857	0.01815	0.01799
	A2	0.00272	0.00233	0.00209
	A3	0.02096	0.02058	0.02028
	A3	0.00269	0.00226	0.00203
	A4	0.02323	0.02285	0.02265
	A4	0.00267	0.00226	0.00201
	B1	0.01434	0.01428	0.01454
	B1	-0.00193	-0.00204	-0.00196

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)**	0.00105	0.00105	0.00105
	(A2 * A3 * A4 * B1 * !Y)	-0.00117	-0.00121	-0.00120
	(A2 * A3 * !A4 * B1 * !Y)	0.00095	0.00096	0.00096
	(A2 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(A2 * A3 * !A4 * !B1 * Y)	0.00044	0.00045	0.00040
	(A2 * A3 * !A4 * !B1 * Y)	-0.00139	-0.00141	-0.00149
	(A2 * !A3 * B1 * !Y)	0.00097	0.00098	0.00098
	(A2 * !A3 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(A2 * !A3 * !B1 * Y)	0.00044	0.00044	0.00041
	(A2 * !A3 * !B1 * Y)	-0.00143	-0.00144	-0.00149
	(!A2 * B1 * !Y)	0.00100	0.00101	0.00100
	(!A2 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(!A2 * !B1 * Y)	0.00043	0.00044	0.00042
	(!A2 * !B1 * Y)	-0.00146	-0.00148	-0.00150
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00211	0.00210	0.00209
	(A2 * A3 * A4 * B1 * !Y)	-0.00231	-0.00235	-0.00234
	(A2 * A3 * !A4 * B1 * !Y)	0.00187	0.00190	0.00188
	(A2 * A3 * !A4 * B1 * !Y)	-0.00243	-0.00246	-0.00244
	(A2 * A3 * !A4 * !B1 * Y)	0.00083	0.00083	0.00073
	(A2 * A3 * !A4 * !B1 * Y)	-0.00275	-0.00278	-0.00297
	(A2 * !A3 * B1 * !Y)	0.00191	0.00193	0.00192
	(A2 * !A3 * B1 * !Y)	-0.00243	-0.00245	-0.00244
	(A2 * !A3 * !B1 * Y)	0.00080	0.00080	0.00073
	(A2 * !A3 * !B1 * Y)	-0.00286	-0.00288	-0.00299
	(!A2 * B1 * !Y)	0.00199	0.00200	0.00199
	(!A2 * B1 * !Y)	-0.00244	-0.00245	-0.00244
	(!A2 * !B1 * Y)	0.00080	0.00080	0.00076
	(!A2 * !B1 * Y)	-0.00294	-0.00296	-0.00301

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00423	0.00421	0.00420
	(A2 * A3 * A4 * B1 * !Y)	-0.00456	-0.00465	-0.00462
	(A2 * A3 * !A4 * B1 * !Y)	0.00373	0.00372	0.00374
	(A2 * A3 * !A4 * B1 * !Y)	-0.00482	-0.00482	-0.00483
	(A2 * A3 * !A4 * !B1 * Y)	0.00168	0.00168	0.00148
	(A2 * A3 * !A4 * !B1 * Y)	-0.00541	-0.00546	-0.00583
	(A2 * !A3 * B1 * !Y)	0.00380	0.00383	0.00381
	(A2 * !A3 * B1 * !Y)	-0.00482	-0.00485	-0.00483
	(A2 * !A3 * !B1 * Y)	0.00161	0.00162	0.00148
	(A2 * !A3 * !B1 * Y)	-0.00559	-0.00564	-0.00586
	(!A2 * B1 * !Y)	0.00398	0.00400	0.00398
	(!A2 * B1 * !Y)	-0.00482	-0.00485	-0.00483
	(!A2 * !B1 * Y)	0.00166	0.00167	0.00158
	(!A2 * !B1 * Y)	-0.00575	-0.00579	-0.00589

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)**	-0.00105	-0.00105	-0.00105
	(A2 * A3 * A4 * B1 * !Y)	0.00120	0.00121	0.00120
	(A2 * A3 * !A4 * B1 * !Y)	-0.00089	-0.00096	-0.00096
	(A2 * A3 * !A4 * B1 * !Y)	0.00125	0.00126	0.00126
	(A2 * A3 * !A4 * !B1 * Y)	-0.00041	-0.00041	-0.00040
	(A2 * A3 * !A4 * !B1 * Y)	0.00151	0.00151	0.00150
	(A2 * !A3 * B1 * !Y)	-0.00092	-0.00098	-0.00098
	(A2 * !A3 * B1 * !Y)	0.00125	0.00126	0.00126
	(A2 * !A3 * !B1 * Y)	-0.00041	-0.00041	-0.00040
	(A2 * !A3 * !B1 * Y)	0.00151	0.00151	0.00150
	(!A2 * B1 * !Y)	-0.00098	-0.00101	-0.00100
	(!A2 * B1 * !Y)	0.00126	0.00127	0.00126
	(!A2 * !B1 * Y)	-0.00042	-0.00041	-0.00041
	(!A2 * !B1 * Y)	0.00152	0.00151	0.00150
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00210	-0.00210	-0.00209
	(A2 * A3 * A4 * B1 * !Y)	0.00235	0.00235	0.00234
	(A2 * A3 * !A4 * B1 * !Y)	-0.00173	-0.00190	-0.00188
	(A2 * A3 * !A4 * B1 * !Y)	0.00244	0.00247	0.00245
	(A2 * A3 * !A4 * !B1 * Y)	-0.00072	-0.00072	-0.00071
	(A2 * A3 * !A4 * !B1 * Y)	0.00300	0.00302	0.00301
	(A2 * !A3 * B1 * !Y)	-0.00179	-0.00193	-0.00192
	(A2 * !A3 * B1 * !Y)	0.00246	0.00247	0.00245
	(A2 * !A3 * !B1 * Y)	-0.00072	-0.00072	-0.00072
	(A2 * !A3 * !B1 * Y)	0.00300	0.00302	0.00301
	(!A2 * B1 * !Y)	-0.00192	-0.00200	-0.00199
	(!A2 * B1 * !Y)	0.00244	0.00247	0.00245
	(!A2 * !B1 * Y)	-0.00074	-0.00074	-0.00074
	(!A2 * !B1 * Y)	0.00301	0.00302	0.00301

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00421	-0.00421	-0.00420
	(A2 * A3 * A4 * B1 * !Y)	0.00464	0.00465	0.00462
	(A2 * A3 * !A4 * B1 * !Y)	-0.00342	-0.00372	-0.00374
	(A2 * A3 * !A4 * B1 * !Y)	0.00486	0.00488	0.00484
	(A2 * A3 * !A4 * !B1 * Y)	-0.00148	-0.00148	-0.00148
	(A2 * A3 * !A4 * !B1 * Y)	0.00588	0.00591	0.00590
	(A2 * !A3 * B1 * !Y)	-0.00353	-0.00383	-0.00381
	(A2 * !A3 * B1 * !Y)	0.00485	0.00489	0.00484
	(A2 * !A3 * !B1 * Y)	-0.00149	-0.00149	-0.00148
	(A2 * !A3 * !B1 * Y)	0.00588	0.00591	0.00590
	(!A2 * B1 * !Y)	-0.00384	-0.00400	-0.00398
	(!A2 * B1 * !Y)	0.00482	0.00490	0.00484
	(!A2 * !B1 * Y)	-0.00154	-0.00154	-0.00154
	(!A2 * !B1 * Y)	0.00588	0.00592	0.00590

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)**	0.00101	0.00101	0.00101
	(A1 * A3 * A4 * B1 * !Y)	-0.00117	-0.00121	-0.00120
	(A1 * A3 * !A4 * B1 * !Y)	0.00092	0.00093	0.00093
	(A1 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(A1 * A3 * !A4 * !B1 * Y)	0.00045	0.00045	0.00046
	(A1 * A3 * !A4 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(A1 * !A3 * B1 * !Y)	0.00096	0.00096	0.00096
	(A1 * !A3 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * !A3 * !B1 * Y)	0.00048	0.00048	0.00048
	(A1 * !A3 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(!A1 * A3 * A4 * B1 * !Y)	0.00096	0.00096	0.00096
	(!A1 * A3 * A4 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(!A1 * A3 * A4 * !B1 * Y)	0.00089	0.00090	0.00090
	(!A1 * A3 * A4 * !B1 * Y)	-0.00131	-0.00132	-0.00131
	(!A1 * A3 * !A4 * B1 * !Y)	0.00062	0.00063	0.00062
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(!A1 * A3 * !A4 * !B1 * Y)	0.00053	0.00053	0.00053
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00132	-0.00132	-0.00132
	(!A1 * !A3 * B1 * !Y)	0.00064	0.00065	0.00064
	(!A1 * !A3 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(!A1 * !A3 * !B1 * Y)	0.00052	0.00053	0.00053
	(!A1 * !A3 * !B1 * Y)	-0.00132	-0.00132	-0.00132

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00204	0.00204	0.00204
	(A1 * A3 * A4 * B1 * !Y)	-0.00233	-0.00238	-0.00238
	(A1 * A3 * !A4 * B1 * !Y)	0.00185	0.00186	0.00185
	(A1 * A3 * !A4 * B1 * !Y)	-0.00249	-0.00250	-0.00249
	(A1 * A3 * !A4 * !B1 * Y)	0.00098	0.00099	0.00100
	(A1 * A3 * !A4 * !B1 * Y)	-0.00251	-0.00253	-0.00251
	(A1 * !A3 * B1 * !Y)	0.00192	0.00193	0.00192
	(A1 * !A3 * B1 * !Y)	-0.00249	-0.00250	-0.00249
	(A1 * !A3 * !B1 * Y)	0.00103	0.00104	0.00104
	(A1 * !A3 * !B1 * Y)	-0.00252	-0.00254	-0.00252
	(!A1 * A3 * A4 * B1 * !Y)	0.00192	0.00194	0.00193
	(!A1 * A3 * A4 * B1 * !Y)	-0.00249	-0.00250	-0.00249
	(!A1 * A3 * A4 * !B1 * Y)	0.00188	0.00190	0.00189
	(!A1 * A3 * A4 * !B1 * Y)	-0.00252	-0.00253	-0.00253
	(!A1 * A3 * !A4 * B1 * !Y)	0.00125	0.00126	0.00125
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00249	-0.00250	-0.00249
	(!A1 * A3 * !A4 * !B1 * Y)	0.00114	0.00115	0.00114
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00253	-0.00254	-0.00254
	(!A1 * !A3 * B1 * !Y)	0.00127	0.00128	0.00128
	(!A1 * !A3 * B1 * !Y)	-0.00249	-0.00250	-0.00249
	(!A1 * !A3 * !B1 * Y)	0.00112	0.00113	0.00112
	(!A1 * !A3 * !B1 * Y)	-0.00253	-0.00255	-0.00254

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00403	0.00404	0.00403
	(A1 * A3 * A4 * B1 * !Y)	-0.00461	-0.00474	-0.00472
	(A1 * A3 * !A4 * B1 * !Y)	0.00359	0.00361	0.00360
	(A1 * A3 * !A4 * B1 * !Y)	-0.00494	-0.00496	-0.00494
	(A1 * A3 * !A4 * !B1 * Y)	0.00188	0.00190	0.00194
	(A1 * A3 * !A4 * !B1 * Y)	-0.00495	-0.00498	-0.00494
	(A1 * !A3 * B1 * !Y)	0.00373	0.00376	0.00374
	(A1 * !A3 * B1 * !Y)	-0.00493	-0.00496	-0.00495
	(A1 * !A3 * !B1 * Y)	0.00196	0.00198	0.00198
	(A1 * !A3 * !B1 * Y)	-0.00496	-0.00500	-0.00497
	(!A1 * A3 * A4 * B1 * !Y)	0.00380	0.00383	0.00382
	(!A1 * A3 * A4 * B1 * !Y)	-0.00492	-0.00496	-0.00494
	(!A1 * A3 * A4 * !B1 * Y)	0.00377	0.00379	0.00378
	(!A1 * A3 * A4 * !B1 * Y)	-0.00498	-0.00499	-0.00498
	(!A1 * A3 * !A4 * B1 * !Y)	0.00238	0.00240	0.00238
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00494	-0.00496	-0.00494
	(!A1 * A3 * !A4 * !B1 * Y)	0.00221	0.00222	0.00221
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00499	-0.00501	-0.00499
	(!A1 * !A3 * B1 * !Y)	0.00240	0.00241	0.00240
	(!A1 * !A3 * B1 * !Y)	-0.00493	-0.00496	-0.00494
	(!A1 * !A3 * !B1 * Y)	0.00214	0.00216	0.00214
	(!A1 * !A3 * !B1 * Y)	-0.00499	-0.00501	-0.00499

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)**	-0.00101	-0.00101	-0.00101
	(A1 * A3 * A4 * B1 * !Y)	0.00119	0.00121	0.00120
	(A1 * A3 * !A4 * B1 * !Y)	-0.00086	-0.00093	-0.00093
	(A1 * A3 * !A4 * B1 * !Y)	0.00125	0.00126	0.00126
	(A1 * A3 * !A4 * !B1 * Y)	-0.00044	-0.00045	-0.00046
	(A1 * A3 * !A4 * !B1 * Y)	0.00134	0.00134	0.00132
	(A1 * !A3 * B1 * !Y)	-0.00093	-0.00096	-0.00096
	(A1 * !A3 * B1 * !Y)	0.00125	0.00127	0.00125
	(A1 * !A3 * !B1 * Y)	-0.00045	-0.00045	-0.00046
	(A1 * !A3 * !B1 * Y)	0.00134	0.00134	0.00132
	(!A1 * A3 * A4 * B1 * !Y)	-0.00093	-0.00096	-0.00096
	(!A1 * A3 * A4 * B1 * !Y)	0.00125	0.00127	0.00125
	(!A1 * A3 * A4 * !B1 * Y)	-0.00087	-0.00090	-0.00090
	(!A1 * A3 * A4 * !B1 * Y)	0.00131	0.00133	0.00132
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00062	-0.00063	-0.00062
	(!A1 * A3 * !A4 * B1 * !Y)	0.00126	0.00125	0.00126
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * A3 * !A4 * !B1 * Y)	0.00132	0.00132	0.00132
	(!A1 * !A3 * B1 * !Y)	-0.00064	-0.00065	-0.00064
	(!A1 * !A3 * B1 * !Y)	0.00125	0.00125	0.00126
	(!A1 * !A3 * !B1 * Y)	-0.00052	-0.00053	-0.00053
	(!A1 * !A3 * !B1 * Y)	0.00132	0.00132	0.00132

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00204	-0.00204	-0.00204
	(A1 * A3 * A4 * B1 * !Y)	0.00237	0.00238	0.00238
	(A1 * A3 * !A4 * B1 * !Y)	-0.00172	-0.00186	-0.00185
	(A1 * A3 * !A4 * B1 * !Y)	0.00249	0.00252	0.00250
	(A1 * A3 * !A4 * !B1 * Y)	-0.00095	-0.00095	-0.00098
	(A1 * A3 * !A4 * !B1 * Y)	0.00259	0.00260	0.00255
	(A1 * !A3 * B1 * !Y)	-0.00186	-0.00193	-0.00192
	(A1 * !A3 * B1 * !Y)	0.00249	0.00253	0.00250
	(A1 * !A3 * !B1 * Y)	-0.00098	-0.00098	-0.00101
	(A1 * !A3 * !B1 * Y)	0.00259	0.00260	0.00255
	(!A1 * A3 * A4 * B1 * !Y)	-0.00186	-0.00194	-0.00193
	(!A1 * A3 * A4 * B1 * !Y)	0.00249	0.00252	0.00250
	(!A1 * A3 * A4 * !B1 * Y)	-0.00182	-0.00190	-0.00189
	(!A1 * A3 * A4 * !B1 * Y)	0.00253	0.00256	0.00253
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(!A1 * A3 * !A4 * B1 * !Y)	0.00249	0.00250	0.00250
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00114	-0.00115	-0.00114
	(!A1 * A3 * !A4 * !B1 * Y)	0.00256	0.00254	0.00254
	(!A1 * !A3 * B1 * !Y)	-0.00127	-0.00128	-0.00128
	(!A1 * !A3 * B1 * !Y)	0.00249	0.00250	0.00250
	(!A1 * !A3 * !B1 * Y)	-0.00112	-0.00113	-0.00112
	(!A1 * !A3 * !B1 * Y)	0.00254	0.00255	0.00255

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00403	-0.00404	-0.00403
	(A1 * A3 * A4 * B1 * !Y)	0.00472	0.00474	0.00472
	(A1 * A3 * !A4 * B1 * !Y)	-0.00331	-0.00361	-0.00360
	(A1 * A3 * !A4 * B1 * !Y)	0.00494	0.00501	0.00496
	(A1 * A3 * !A4 * !B1 * Y)	-0.00182	-0.00183	-0.00187
	(A1 * A3 * !A4 * !B1 * Y)	0.00510	0.00511	0.00502
	(A1 * !A3 * B1 * !Y)	-0.00357	-0.00376	-0.00374
	(A1 * !A3 * B1 * !Y)	0.00493	0.00496	0.00496
	(A1 * !A3 * !B1 * Y)	-0.00185	-0.00186	-0.00192
	(A1 * !A3 * !B1 * Y)	0.00510	0.00511	0.00501
	(!A1 * A3 * A4 * B1 * !Y)	-0.00368	-0.00383	-0.00382
	(!A1 * A3 * A4 * B1 * !Y)	0.00495	0.00501	0.00496
	(!A1 * A3 * A4 * !B1 * Y)	-0.00364	-0.00379	-0.00378
	(!A1 * A3 * A4 * !B1 * Y)	0.00499	0.00504	0.00499
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00238	-0.00240	-0.00238
	(!A1 * A3 * !A4 * B1 * !Y)	0.00494	0.00496	0.00496
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00221	-0.00222	-0.00221
	(!A1 * A3 * !A4 * !B1 * Y)	0.00503	0.00501	0.00500
	(!A1 * !A3 * B1 * !Y)	-0.00240	-0.00241	-0.00240
	(!A1 * !A3 * B1 * !Y)	0.00494	0.00496	0.00496
	(!A1 * !A3 * !B1 * Y)	-0.00214	-0.00216	-0.00214
	(!A1 * !A3 * !B1 * Y)	0.00500	0.00501	0.00501

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)**	0.00100	0.00099	0.00099
	(A1 * A2 * A4 * B1 * !Y)	-0.00118	-0.00120	-0.00120
	(A1 * A2 * !A4 * B1 * !Y)	0.00093	0.00094	0.00093
	(A1 * A2 * !A4 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * !A4 * !B1 * Y)	0.00046	0.00046	0.00046
	(A1 * A2 * !A4 * !B1 * Y)	-0.00129	-0.00130	-0.00130
	(A1 * !A2 * A4 * !B1 * Y)	0.00090	0.00091	0.00090
	(A1 * !A2 * A4 * !B1 * Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !A4 * !B1 * Y)	0.00051	0.00052	0.00051
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00129	-0.00130	-0.00130
	(!A2 * A4 * B1 * !Y)	0.00094	0.00095	0.00094
	(!A2 * A4 * B1 * !Y)	-0.00124	-0.00126	-0.00125
	(!A2 * !A4 * B1 * !Y)	0.00060	0.00060	0.00060
	(!A2 * !A4 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * A4 * B1 * !Y)	0.00091	0.00092	0.00092
	(!A1 * A2 * A4 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * A4 * !B1 * Y)	0.00087	0.00088	0.00087
	(!A1 * A2 * A4 * !B1 * Y)	-0.00129	-0.00130	-0.00129
	(!A1 * A2 * !A4 * B1 * !Y)	0.00060	0.00060	0.00060
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(!A1 * A2 * !A4 * !B1 * Y)	0.00051	0.00051	0.00051
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00129	-0.00130	-0.00130
	(!A1 * !A2 * A4 * !B1 * Y)	0.00090	0.00090	0.00090
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00129	-0.00130	-0.00129
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00053	0.00054	0.00053
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00129	-0.00130	-0.00130

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00200	0.00201	0.00200
	(A1 * A2 * A4 * B1 * !Y)	-0.00232	-0.00239	-0.00237
	(A1 * A2 * !A4 * B1 * !Y)	0.00186	0.00188	0.00187
	(A1 * A2 * !A4 * B1 * !Y)	-0.00247	-0.00249	-0.00248
	(A1 * A2 * !A4 * !B1 * Y)	0.00100	0.00101	0.00100
	(A1 * A2 * !A4 * !B1 * Y)	-0.00247	-0.00249	-0.00247
	(A1 * !A2 * A4 * !B1 * Y)	0.00189	0.00190	0.00189
	(A1 * !A2 * A4 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(A1 * !A2 * !A4 * !B1 * Y)	0.00112	0.00113	0.00112
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00247	-0.00249	-0.00248
	(!A2 * A4 * B1 * !Y)	0.00188	0.00191	0.00189
	(!A2 * A4 * B1 * !Y)	-0.00247	-0.00249	-0.00248
	(!A2 * !A4 * B1 * !Y)	0.00119	0.00120	0.00119
	(!A2 * !A4 * B1 * !Y)	-0.00247	-0.00249	-0.00248
	(!A1 * A2 * A4 * B1 * !Y)	0.00183	0.00183	0.00183
	(!A1 * A2 * A4 * B1 * !Y)	-0.00247	-0.00248	-0.00248
	(!A1 * A2 * A4 * !B1 * Y)	0.00183	0.00184	0.00183
	(!A1 * A2 * A4 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(!A1 * A2 * !A4 * B1 * !Y)	0.00120	0.00121	0.00120
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00248	-0.00249	-0.00248
	(!A1 * A2 * !A4 * !B1 * Y)	0.00111	0.00112	0.00111
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00248	-0.00250	-0.00249
	(!A1 * !A2 * A4 * !B1 * Y)	0.00189	0.00190	0.00189
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00116	0.00117	0.00116
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00248	-0.00249	-0.00248

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00399	0.00400	0.00398
	(A1 * A2 * A4 * B1 * !Y)	-0.00466	-0.00482	-0.00478
	(A1 * A2 * !A4 * B1 * !Y)	0.00372	0.00375	0.00374
	(A1 * A2 * !A4 * B1 * !Y)	-0.00498	-0.00502	-0.00500
	(A1 * A2 * !A4 * !B1 * Y)	0.00190	0.00191	0.00189
	(A1 * A2 * !A4 * !B1 * Y)	-0.00500	-0.00503	-0.00500
	(A1 * !A2 * A4 * !B1 * Y)	0.00370	0.00370	0.00369
	(A1 * !A2 * A4 * !B1 * Y)	-0.00502	-0.00501	-0.00500
	(A1 * !A2 * !A4 * !B1 * Y)	0.00211	0.00212	0.00211
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00500	-0.00502	-0.00500
	(!A2 * A4 * B1 * !Y)	0.00367	0.00371	0.00370
	(!A2 * A4 * B1 * !Y)	-0.00497	-0.00502	-0.00500
	(!A2 * !A4 * B1 * !Y)	0.00225	0.00227	0.00226
	(!A2 * !A4 * B1 * !Y)	-0.00499	-0.00502	-0.00500
	(!A1 * A2 * A4 * B1 * !Y)	0.00359	0.00362	0.00360
	(!A1 * A2 * A4 * B1 * !Y)	-0.00500	-0.00502	-0.00500
	(!A1 * A2 * A4 * !B1 * Y)	0.00358	0.00361	0.00359
	(!A1 * A2 * A4 * !B1 * Y)	-0.00501	-0.00502	-0.00501
	(!A1 * A2 * !A4 * B1 * !Y)	0.00231	0.00233	0.00232
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00500	-0.00502	-0.00500
	(!A1 * A2 * !A4 * !B1 * Y)	0.00216	0.00216	0.00215
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00503	-0.00504	-0.00502
	(!A1 * !A2 * A4 * !B1 * Y)	0.00369	0.00372	0.00369
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00501	-0.00503	-0.00500
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00219	0.00220	0.00219
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00500	-0.00502	-0.00500

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)**	-0.00099	-0.00099	-0.00099
	(A1 * A2 * A4 * B1 * !Y)	0.00119	0.00120	0.00120
	(A1 * A2 * !A4 * B1 * !Y)	-0.00090	-0.00094	-0.00093
	(A1 * A2 * !A4 * B1 * !Y)	0.00125	0.00127	0.00125
	(A1 * A2 * !A4 * !B1 * Y)	-0.00045	-0.00045	-0.00045
	(A1 * A2 * !A4 * !B1 * Y)	0.00130	0.00130	0.00130
	(A1 * !A2 * A4 * !B1 * Y)	-0.00087	-0.00091	-0.00090
	(A1 * !A2 * A4 * !B1 * Y)	0.00129	0.00131	0.00130
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00051	-0.00052	-0.00051
	(A1 * !A2 * !A4 * !B1 * Y)	0.00130	0.00130	0.00130
	(!A2 * A4 * B1 * !Y)	-0.00092	-0.00095	-0.00094
	(!A2 * A4 * B1 * !Y)	0.00124	0.00126	0.00125
	(!A2 * !A4 * B1 * !Y)	-0.00060	-0.00060	-0.00060
	(!A2 * !A4 * B1 * !Y)	0.00125	0.00125	0.00125
	(!A1 * A2 * A4 * B1 * !Y)	-0.00087	-0.00092	-0.00092
	(!A1 * A2 * A4 * B1 * !Y)	0.00125	0.00126	0.00125
	(!A1 * A2 * A4 * !B1 * Y)	-0.00082	-0.00088	-0.00087
	(!A1 * A2 * A4 * !B1 * Y)	0.00130	0.00130	0.00130
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00060	-0.00060	-0.00060
	(!A1 * A2 * !A4 * B1 * !Y)	0.00126	0.00125	0.00125
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00051	-0.00051	-0.00051
	(!A1 * A2 * !A4 * !B1 * Y)	0.00131	0.00130	0.00130
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00087	-0.00090	-0.00090
	(!A1 * !A2 * A4 * !B1 * Y)	0.00129	0.00131	0.00130
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00053	-0.00054	-0.00053
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00129	0.00130	0.00130

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00200	-0.00201	-0.00200
	(A1 * A2 * A4 * B1 * !Y)	0.00238	0.00239	0.00237
	(A1 * A2 * !A4 * B1 * !Y)	-0.00178	-0.00188	-0.00187
	(A1 * A2 * !A4 * B1 * !Y)	0.00247	0.00249	0.00248
	(A1 * A2 * !A4 * !B1 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * A2 * !A4 * !B1 * Y)	0.00248	0.00250	0.00249
	(A1 * !A2 * A4 * !B1 * Y)	-0.00184	-0.00190	-0.00189
	(A1 * !A2 * A4 * !B1 * Y)	0.00249	0.00250	0.00248
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * !A4 * !B1 * Y)	0.00248	0.00250	0.00248
	(!A2 * A4 * B1 * !Y)	-0.00184	-0.00191	-0.00189
	(!A2 * A4 * B1 * !Y)	0.00249	0.00250	0.00248
	(!A2 * !A4 * B1 * !Y)	-0.00119	-0.00120	-0.00119
	(!A2 * !A4 * B1 * !Y)	0.00248	0.00250	0.00248
	(!A1 * A2 * A4 * B1 * !Y)	-0.00175	-0.00183	-0.00183
	(!A1 * A2 * A4 * B1 * !Y)	0.00250	0.00250	0.00248
	(!A1 * A2 * A4 * !B1 * Y)	-0.00174	-0.00184	-0.00183
	(!A1 * A2 * A4 * !B1 * Y)	0.00250	0.00251	0.00249
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00120	-0.00121	-0.00120
	(!A1 * A2 * !A4 * B1 * !Y)	0.00248	0.00250	0.00248
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00111	-0.00112	-0.00111
	(!A1 * A2 * !A4 * !B1 * Y)	0.00251	0.00251	0.00250
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00184	-0.00190	-0.00189
	(!A1 * !A2 * A4 * !B1 * Y)	0.00248	0.00250	0.00248
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00116	-0.00117	-0.00116
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00248	0.00250	0.00248

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00399	-0.00400	-0.00398
	(A1 * A2 * A4 * B1 * !Y)	0.00480	0.00482	0.00478
	(A1 * A2 * !A4 * B1 * !Y)	-0.00357	-0.00375	-0.00374
	(A1 * A2 * !A4 * B1 * !Y)	0.00499	0.00503	0.00502
	(A1 * A2 * !A4 * !B1 * Y)	-0.00184	-0.00185	-0.00185
	(A1 * A2 * !A4 * !B1 * Y)	0.00504	0.00506	0.00504
	(A1 * !A2 * A4 * !B1 * Y)	-0.00357	-0.00370	-0.00369
	(A1 * !A2 * A4 * !B1 * Y)	0.00504	0.00506	0.00502
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00211	-0.00212	-0.00211
	(A1 * !A2 * !A4 * !B1 * Y)	0.00501	0.00502	0.00502
	(!A2 * A4 * B1 * !Y)	-0.00358	-0.00371	-0.00370
	(!A2 * A4 * B1 * !Y)	0.00504	0.00506	0.00502
	(!A2 * !A4 * B1 * !Y)	-0.00225	-0.00227	-0.00226
	(!A2 * !A4 * B1 * !Y)	0.00501	0.00502	0.00502
	(!A1 * A2 * A4 * B1 * !Y)	-0.00339	-0.00362	-0.00360
	(!A1 * A2 * A4 * B1 * !Y)	0.00504	0.00506	0.00502
	(!A1 * A2 * A4 * !B1 * Y)	-0.00338	-0.00361	-0.00359
	(!A1 * A2 * A4 * !B1 * Y)	0.00505	0.00506	0.00502
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00231	-0.00233	-0.00232
	(!A1 * A2 * !A4 * B1 * !Y)	0.00500	0.00502	0.00502
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00216	-0.00216	-0.00215
	(!A1 * A2 * !A4 * !B1 * Y)	0.00506	0.00505	0.00503
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00357	-0.00372	-0.00369
	(!A1 * !A2 * A4 * !B1 * Y)	0.00504	0.00506	0.00502
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00219	-0.00220	-0.00219
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00501	0.00502	0.00502

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)**	0.00106	0.00106	0.00106
	(A1 * A2 * A3 * B1 * !Y)	-0.00116	-0.00120	-0.00119
	(A1 * A2 * !A3 * !B1 * Y)	0.00091	0.00092	0.00091
	(A1 * A2 * !A3 * !B1 * Y)	-0.00133	-0.00134	-0.00134
	(A1 * !A2 * A3 * !B1 * Y)	0.00089	0.00090	0.00089
	(A1 * !A2 * A3 * !B1 * Y)	-0.00134	-0.00134	-0.00134
	(A1 * !A2 * !A3 * !B1 * Y)	0.00091	0.00092	0.00091
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00133	-0.00134	-0.00134
	(!A3 * B1 * !Y)	0.00100	0.00101	0.00100
	(!A3 * B1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A2 * A3 * B1 * !Y)	0.00099	0.00100	0.00099
	(!A2 * A3 * B1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * A2 * A3 * B1 * !Y)	0.00098	0.00099	0.00098
	(!A1 * A2 * A3 * B1 * !Y)	-0.00124	-0.00125	-0.00124
	(!A1 * A2 * A3 * !B1 * Y)	0.00088	0.00089	0.00089
	(!A1 * A2 * A3 * !B1 * Y)	-0.00133	-0.00134	-0.00134
	(!A1 * !A3 * !B1 * Y)	0.00090	0.00092	0.00091
	(!A1 * !A3 * !B1 * Y)	-0.00133	-0.00134	-0.00134
	(!A1 * !A2 * A3 * !B1 * Y)	0.00089	0.00090	0.00089
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00133	-0.00134	-0.00134

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00202	0.00203	0.00202
	(A1 * A2 * A3 * B1 * !Y)	-0.00233	-0.00240	-0.00238
	(A1 * A2 * !A3 * !B1 * Y)	0.00190	0.00190	0.00189
	(A1 * A2 * !A3 * !B1 * Y)	-0.00249	-0.00249	-0.00248
	(A1 * !A2 * A3 * !B1 * Y)	0.00182	0.00184	0.00183
	(A1 * !A2 * A3 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(A1 * !A2 * !A3 * !B1 * Y)	0.00190	0.00190	0.00189
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00249	-0.00250	-0.00248
	(!A3 * B1 * !Y)	0.00189	0.00190	0.00189
	(!A3 * B1 * !Y)	-0.00249	-0.00250	-0.00248
	(!A2 * A3 * B1 * !Y)	0.00182	0.00184	0.00183
	(!A2 * A3 * B1 * !Y)	-0.00248	-0.00249	-0.00248
	(!A1 * A2 * A3 * B1 * !Y)	0.00181	0.00183	0.00181
	(!A1 * A2 * A3 * B1 * !Y)	-0.00248	-0.00250	-0.00248
	(!A1 * A2 * A3 * !B1 * Y)	0.00180	0.00183	0.00181
	(!A1 * A2 * A3 * !B1 * Y)	-0.00248	-0.00250	-0.00249
	(!A1 * !A3 * !B1 * Y)	0.00189	0.00188	0.00188
	(!A1 * !A3 * !B1 * Y)	-0.00249	-0.00248	-0.00248
	(!A1 * !A2 * A3 * !B1 * Y)	0.00182	0.00183	0.00183
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00248	-0.00249	-0.00248

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00401	0.00401	0.00400
	(A1 * A2 * A3 * B1 * !Y)	-0.00465	-0.00478	-0.00475
	(A1 * A2 * !A3 * !B1 * Y)	0.00372	0.00374	0.00373
	(A1 * A2 * !A3 * !B1 * Y)	-0.00496	-0.00497	-0.00497
	(A1 * !A2 * A3 * !B1 * Y)	0.00362	0.00364	0.00362
	(A1 * !A2 * A3 * !B1 * Y)	-0.00497	-0.00498	-0.00497
	(A1 * !A2 * !A3 * !B1 * Y)	0.00371	0.00377	0.00373
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00495	-0.00499	-0.00497
	(!A3 * B1 * !Y)	0.00373	0.00376	0.00374
	(!A3 * B1 * !Y)	-0.00496	-0.00498	-0.00497
	(!A2 * A3 * B1 * !Y)	0.00363	0.00364	0.00363
	(!A2 * A3 * B1 * !Y)	-0.00497	-0.00498	-0.00497
	(!A1 * A2 * A3 * B1 * !Y)	0.00361	0.00364	0.00361
	(!A1 * A2 * A3 * B1 * !Y)	-0.00497	-0.00500	-0.00497
	(!A1 * A2 * A3 * !B1 * Y)	0.00361	0.00364	0.00361
	(!A1 * A2 * A3 * !B1 * Y)	-0.00497	-0.00499	-0.00497
	(!A1 * !A3 * !B1 * Y)	0.00372	0.00377	0.00373
	(!A1 * !A3 * !B1 * Y)	-0.00495	-0.00499	-0.00497
	(!A1 * !A2 * A3 * !B1 * Y)	0.00363	0.00362	0.00362
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00497	-0.00497	-0.00497

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)**	-0.00106	-0.00106	-0.00106
	(A1 * A2 * A3 * B1 * !Y)	0.00120	0.00120	0.00119
	(A1 * A2 * !A3 * !B1 * Y)	-0.00089	-0.00091	-0.00091
	(A1 * A2 * !A3 * !B1 * Y)	0.00134	0.00135	0.00134
	(A1 * !A2 * A3 * !B1 * Y)	-0.00086	-0.00090	-0.00089
	(A1 * !A2 * A3 * !B1 * Y)	0.00134	0.00134	0.00134
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00089	-0.00091	-0.00091
	(A1 * !A2 * !A3 * !B1 * Y)	0.00134	0.00135	0.00134
	(!A3 * B1 * !Y)	-0.00098	-0.00101	-0.00100
	(!A3 * B1 * !Y)	0.00124	0.00127	0.00125
	(!A2 * A3 * B1 * !Y)	-0.00095	-0.00099	-0.00099
	(!A2 * A3 * B1 * !Y)	0.00125	0.00125	0.00125
	(!A1 * A2 * A3 * B1 * !Y)	-0.00093	-0.00099	-0.00098
	(!A1 * A2 * A3 * B1 * !Y)	0.00124	0.00125	0.00125
	(!A1 * A2 * A3 * !B1 * Y)	-0.00084	-0.00089	-0.00089
	(!A1 * A2 * A3 * !B1 * Y)	0.00134	0.00134	0.00134
	(!A1 * !A3 * !B1 * Y)	-0.00089	-0.00091	-0.00091
	(!A1 * !A3 * !B1 * Y)	0.00134	0.00135	0.00134
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00086	-0.00090	-0.00089
	(!A1 * !A2 * A3 * !B1 * Y)	0.00134	0.00134	0.00134

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00201	-0.00202	-0.00201
	(A1 * A2 * A3 * B1 * !Y)	0.00238	0.00240	0.00238
	(A1 * A2 * !A3 * !B1 * Y)	-0.00185	-0.00190	-0.00189
	(A1 * A2 * !A3 * !B1 * Y)	0.00250	0.00251	0.00249
	(A1 * !A2 * A3 * !B1 * Y)	-0.00176	-0.00184	-0.00183
	(A1 * !A2 * A3 * !B1 * Y)	0.00250	0.00251	0.00249
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00185	-0.00190	-0.00189
	(A1 * !A2 * !A3 * !B1 * Y)	0.00250	0.00251	0.00249
	(!A3 * B1 * !Y)	-0.00185	-0.00190	-0.00189
	(!A3 * B1 * !Y)	0.00250	0.00251	0.00249
	(!A2 * A3 * B1 * !Y)	-0.00176	-0.00184	-0.00183
	(!A2 * A3 * B1 * !Y)	0.00250	0.00251	0.00249
	(!A1 * A2 * A3 * B1 * !Y)	-0.00172	-0.00183	-0.00181
	(!A1 * A2 * A3 * B1 * !Y)	0.00249	0.00251	0.00249
	(!A1 * A2 * A3 * !B1 * Y)	-0.00172	-0.00183	-0.00181
	(!A1 * A2 * A3 * !B1 * Y)	0.00249	0.00251	0.00249
	(!A1 * !A3 * !B1 * Y)	-0.00185	-0.00188	-0.00188
	(!A1 * !A3 * !B1 * Y)	0.00250	0.00251	0.00249
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00176	-0.00183	-0.00183
	(!A1 * !A2 * A3 * !B1 * Y)	0.00250	0.00251	0.00249

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00400	-0.00401	-0.00400
	(A1 * A2 * A3 * B1 * !Y)	0.00477	0.00478	0.00475
	(A1 * A2 * !A3 * !B1 * Y)	-0.00365	-0.00374	-0.00373
	(A1 * A2 * !A3 * !B1 * Y)	0.00498	0.00501	0.00498
	(A1 * !A2 * A3 * !B1 * Y)	-0.00346	-0.00364	-0.00362
	(A1 * !A2 * A3 * !B1 * Y)	0.00500	0.00500	0.00498
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00365	-0.00376	-0.00373
	(A1 * !A2 * !A3 * !B1 * Y)	0.00498	0.00501	0.00498
	(!A3 * B1 * !Y)	-0.00366	-0.00376	-0.00374
	(!A3 * B1 * !Y)	0.00500	0.00503	0.00498
	(!A2 * A3 * B1 * !Y)	-0.00346	-0.00364	-0.00363
	(!A2 * A3 * B1 * !Y)	0.00500	0.00500	0.00498
	(!A1 * A2 * A3 * B1 * !Y)	-0.00342	-0.00364	-0.00361
	(!A1 * A2 * A3 * B1 * !Y)	0.00500	0.00500	0.00498
	(!A1 * A2 * A3 * !B1 * Y)	-0.00341	-0.00364	-0.00361
	(!A1 * A2 * A3 * !B1 * Y)	0.00500	0.00499	0.00498
	(!A1 * !A3 * !B1 * Y)	-0.00365	-0.00376	-0.00373
	(!A1 * !A3 * !B1 * Y)	0.00498	0.00501	0.00498
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00346	-0.00362	-0.00362
	(!A1 * !A2 * A3 * !B1 * Y)	0.00500	0.00500	0.00498

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)	0.00125	0.00126	0.00126
	(A1 * A2 * A3 * A4 * !Y)	-0.00074	-0.00074	-0.00074
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00135	0.00135	0.00135
	(A1 * A2 * A3 * A4 * !Y)	-0.00150	-0.00150	-0.00150
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00267	0.00267	0.00266
	(A1 * A2 * A3 * A4 * !Y)	-0.00297	-0.00297	-0.00296

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)	-0.00112	-0.00113	-0.00124
	(A1 * A2 * A3 * A4 * !Y)	0.00084	0.00084	0.00076
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00108	-0.00109	-0.00133
	(A1 * A2 * A3 * A4 * !Y)	0.00174	0.00172	0.00155
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00214	-0.00218	-0.00262
	(A1 * A2 * A3 * A4 * !Y)	0.00337	0.00337	0.00306

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	X
0	x	x	x	0	0
x	x	x	x	1	1
1	0	x	x	0	0
1	1	0	x	0	0
1	1	1	0	0	0
1	1	1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41o_1	14.38560
sky130_fd_sc_hs__a41o_2	15.98400
sky130_fd_sc_hs__a41o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__a41o_1	0.00249	0.00242	0.00244	0.00239	0.00259	0.36096
sky130_fd_sc_hs__a41o_2	0.00245	0.00249	0.00254	0.00238	0.00262	0.71842
sky130_fd_sc_hs__a41o_4	0.00480	0.00459	0.00473	0.00456	0.00482	1.28961

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	0.00018	0.00027
sky130_fd_sc_hs__a41o_2	0.00000	0.00024	0.00037
sky130_fd_sc_hs__a41o_4	0.00000	0.00049	0.00073

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)	0.23481	1.25325	8.64987
	A2->X (RR)	0.24850	1.28036	8.87193
	A3->X (RR)	0.25830	1.27498	8.90466
	A4->X (RR)	0.26315	1.25953	8.89719
	B1->X (RR)	0.15683	1.15528	8.62554
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.23831	1.15147	8.97589
	A2->X (RR)	0.25427	1.17269	9.17472
	A3->X (RR)	0.26366	1.15980	9.17260
	A4->X (RR)	0.26767	1.13822	9.12876
	B1->X (RR)	0.13528	1.01839	8.84808
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.25734	1.08150	9.01718
	A2->X (RR)	0.27660	1.10809	9.23863
	A3->X (RR)	0.28620	1.07392	9.17421
	A4->X (RR)	0.29158	1.05763	9.13732
	B1->X (RR)	0.12880	0.90694	8.83043

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.45543	1.27083	6.85034
	A2->X (FF)	0.53294	1.35124	7.04387
	A3->X (FF)	0.59380	1.41633	7.19516
	A4->X (FF)	0.65224	1.48209	7.33180
	B1->X (FF)	0.56997	1.33009	6.68667
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.57108	1.39556	7.22606
	A2->X (FF)	0.65982	1.48730	7.40627
	A3->X (FF)	0.71834	1.55078	7.53265
	A4->X (FF)	0.77105	1.61121	7.63836
	B1->X (FF)	0.69237	1.46001	7.08443
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.57221	1.36815	7.18399
	A2->X (FF)	0.65416	1.45161	7.35684
	A3->X (FF)	0.72117	1.52594	7.49436
	A4->X (FF)	0.78922	1.59940	7.62271
	B1->X (FF)	0.69889	1.44054	7.07890

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.00740	0.00734	0.00726
	A1	0.00409	0.00404	0.00397
	A2	0.00798	0.00798	0.00793
	A2	0.00411	0.00410	0.00408
	A3	0.00854	0.00855	0.00849
	A3	0.00410	0.00411	0.00408
	A4	0.00913	0.00916	0.00911
	A4	0.00410	0.00412	0.00408
	B1	0.00746	0.00727	0.00718
	B1	0.00300	0.00281	0.00273
sky130_fd_sc_hs__a41o_2	A1	0.00850	0.00859	0.00859
	A1	0.00519	0.00529	0.00533
	A2	0.00911	0.00926	0.00930
	A2	0.00521	0.00536	0.00546
	A3	0.00969	0.00986	0.00990
	A3	0.00520	0.00540	0.00548
	A4	0.01024	0.01044	0.01047
	A4	0.00519	0.00539	0.00548
	B1	0.00864	0.00861	0.00854
	B1	0.00415	0.00411	0.00404

sky130_fd_sc_hs__a41o_4	**A1**	0.01609	0.01628	0.01632
	A1	0.00949	0.00966	0.00979
	A2	0.01720	0.01751	0.01769
	A2	0.00948	0.00979	0.01008
	A3	0.01849	0.01886	0.01900
	A3	0.00949	0.00986	0.01012
	A4	0.01956	0.01998	0.02012
	A4	0.00947	0.00987	0.01003
	B1	0.01624	0.01627	0.01620
	B1	0.00727	0.00727	0.00728

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00237	0.00235	0.00314
	A1	0.00578	0.00575	0.00571
	A2	0.00271	0.00269	0.00269
	A2	0.00664	0.00662	0.00657
	A3	0.00309	0.00311	0.00317
	A3	0.00751	0.00753	0.00747
	A4	0.00335	0.00344	0.00412
	A4	0.00830	0.00838	0.00831
	B1	0.00342	0.00340	0.00340
	B1	0.00769	0.00768	0.00759

sky130_fd_sc_hs__a41o_2	**A1**	0.00390	0.00411	0.00566
	A1	0.00730	0.00751	0.00751
	A2	0.00431	0.00452	0.00498
	A2	0.00826	0.00848	0.00848
	A3	0.00465	0.00490	0.00492
	A3	0.00911	0.00937	0.00935
	A4	0.00486	0.00517	0.00724
	A4	0.00982	0.01013	0.01012
	B1	0.00421	0.00441	0.00594
	B1	0.00924	0.00943	0.00940
sky130_fd_sc_hs__a41o_4	**A1**	0.00750	0.00785	0.00940
	A1	0.01428	0.01465	0.01466
	A2	0.00848	0.00889	0.01175
	A2	0.01625	0.01669	0.01676
	A3	0.00901	0.00952	0.00967
	A3	0.01793	0.01845	0.01851
	A4	0.00982	0.01040	0.01485
	A4	0.01969	0.02026	0.02033
	B1	0.00984	0.01025	0.01274
	B1	0.01839	0.01880	0.01883

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)**	0.00098	0.00098	0.00097
	(A2 * A3 * A4 * B1 * X)	-0.00107	-0.00109	-0.00109
	(A2 * A3 * !A4 * B1 * X)	0.00089	0.00089	0.00089
	(A2 * A3 * !A4 * B1 * X)	-0.00114	-0.00115	-0.00114
	(A2 * A3 * !A4 * !B1 * !X)	0.00041	0.00041	0.00036
	(A2 * A3 * !A4 * !B1 * !X)	-0.00124	-0.00125	-0.00134
	(A2 * !A3 * B1 * X)	0.00090	0.00090	0.00090
	(A2 * !A3 * B1 * X)	-0.00114	-0.00115	-0.00114
	(A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00036
	(A2 * !A3 * !B1 * !X)	-0.00128	-0.00129	-0.00134
	(!A2 * B1 * X)	0.00091	0.00092	0.00092
	(!A2 * B1 * X)	-0.00113	-0.00114	-0.00114
	(!A2 * !B1 * !X)	0.00038	0.00038	0.00037
	(!A2 * !B1 * !X)	-0.00132	-0.00133	-0.00135
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00097	0.00097	0.00096
	(A2 * A3 * A4 * B1 * X)	-0.00107	-0.00109	-0.00109
	(A2 * A3 * !A4 * B1 * X)	0.00088	0.00088	0.00088
	(A2 * A3 * !A4 * B1 * X)	-0.00115	-0.00115	-0.00115
	(A2 * A3 * !A4 * !B1 * !X)	0.00041	0.00041	0.00037
	(A2 * A3 * !A4 * !B1 * !X)	-0.00123	-0.00124	-0.00133
	(A2 * !A3 * B1 * X)	0.00089	0.00089	0.00089
	(A2 * !A3 * B1 * X)	-0.00114	-0.00114	-0.00115
	(A2 * !A3 * !B1 * !X)	0.00040	0.00040	0.00037
	(A2 * !A3 * !B1 * !X)	-0.00127	-0.00128	-0.00134
	(!A2 * B1 * X)	0.00091	0.00092	0.00091
	(!A2 * B1 * X)	-0.00114	-0.00115	-0.00115
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00038
	(!A2 * !B1 * !X)	-0.00131	-0.00132	-0.00134

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00205	0.00205	0.00204
	(A2 * A3 * A4 * B1 * X)	-0.00217	-0.00223	-0.00222
	(A2 * A3 * !A4 * B1 * X)	0.00181	0.00183	0.00182
	(A2 * A3 * !A4 * B1 * X)	-0.00232	-0.00234	-0.00233
	(A2 * A3 * !A4 * !B1 * !X)	0.00088	0.00089	0.00078
	(A2 * A3 * !A4 * !B1 * !X)	-0.00250	-0.00253	-0.00272
	(A2 * !A3 * B1 * X)	0.00185	0.00186	0.00185
	(A2 * !A3 * B1 * X)	-0.00233	-0.00234	-0.00233
	(A2 * !A3 * !B1 * !X)	0.00083	0.00084	0.00078
	(A2 * !A3 * !B1 * !X)	-0.00260	-0.00263	-0.00274
	(!A2 * B1 * X)	0.00193	0.00194	0.00193
	(!A2 * B1 * X)	-0.00233	-0.00234	-0.00233
	(!A2 * !B1 * !X)	0.00085	0.00086	0.00082
	(!A2 * !B1 * !X)	-0.00268	-0.00271	-0.00276

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)**	-0.00097	-0.00097	-0.00097
	(A2 * A3 * A4 * B1 * X)	0.00108	0.00109	0.00109
	(A2 * A3 * !A4 * B1 * X)	-0.00082	-0.00089	-0.00089
	(A2 * A3 * !A4 * B1 * X)	0.00114	0.00115	0.00114
	(A2 * A3 * !A4 * !B1 * !X)	-0.00036	-0.00035	-0.00035
	(A2 * A3 * !A4 * !B1 * !X)	0.00136	0.00135	0.00135
	(A2 * !A3 * B1 * X)	-0.00084	-0.00090	-0.00090
	(A2 * !A3 * B1 * X)	0.00114	0.00115	0.00114
	(A2 * !A3 * !B1 * !X)	-0.00036	-0.00035	-0.00035
	(A2 * !A3 * !B1 * !X)	0.00136	0.00135	0.00135
	(!A2 * B1 * X)	-0.00089	-0.00092	-0.00092
	(!A2 * B1 * X)	0.00114	0.00115	0.00114
	(!A2 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !X)	0.00136	0.00135	0.00135
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00097	-0.00096	-0.00096
	(A2 * A3 * A4 * B1 * X)	0.00110	0.00109	0.00109
	(A2 * A3 * !A4 * B1 * X)	-0.00082	-0.00088	-0.00088
	(A2 * A3 * !A4 * B1 * X)	0.00116	0.00115	0.00115
	(A2 * A3 * !A4 * !B1 * !X)	-0.00036	-0.00037	-0.00037
	(A2 * A3 * !A4 * !B1 * !X)	0.00133	0.00134	0.00134
	(A2 * !A3 * B1 * X)	-0.00084	-0.00089	-0.00089
	(A2 * !A3 * B1 * X)	0.00114	0.00116	0.00115
	(A2 * !A3 * !B1 * !X)	-0.00036	-0.00037	-0.00037
	(A2 * !A3 * !B1 * !X)	0.00133	0.00134	0.00134
	(!A2 * B1 * X)	-0.00089	-0.00092	-0.00091
	(!A2 * B1 * X)	0.00114	0.00115	0.00115
	(!A2 * !B1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * !X)	0.00133	0.00134	0.00134

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00204	-0.00205	-0.00204
	(A2 * A3 * A4 * B1 * X)	0.00222	0.00223	0.00222
	(A2 * A3 * !A4 * B1 * X)	-0.00169	-0.00183	-0.00182
	(A2 * A3 * !A4 * B1 * X)	0.00233	0.00235	0.00234
	(A2 * A3 * !A4 * !B1 * !X)	-0.00077	-0.00077	-0.00078
	(A2 * A3 * !A4 * !B1 * !X)	0.00275	0.00275	0.00276
	(A2 * !A3 * B1 * X)	-0.00174	-0.00186	-0.00185
	(A2 * !A3 * B1 * X)	0.00233	0.00235	0.00234
	(A2 * !A3 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(A2 * !A3 * !B1 * !X)	0.00275	0.00275	0.00276
	(!A2 * B1 * X)	-0.00187	-0.00194	-0.00193
	(!A2 * B1 * X)	0.00233	0.00235	0.00234
	(!A2 * !B1 * !X)	-0.00080	-0.00080	-0.00080
	(!A2 * !B1 * !X)	0.00275	0.00276	0.00276

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)**	0.00100	0.00100	0.00099
	(A1 * A3 * A4 * B1 * X)	-0.00106	-0.00108	-0.00108
	(A1 * A3 * !A4 * B1 * X)	0.00091	0.00091	0.00091
	(A1 * A3 * !A4 * B1 * X)	-0.00113	-0.00114	-0.00113
	(A1 * A3 * !A4 * !B1 * !X)	0.00049	0.00049	0.00049
	(A1 * A3 * !A4 * !B1 * !X)	-0.00114	-0.00114	-0.00113
	(A1 * !A3 * B1 * X)	0.00093	0.00094	0.00094
	(A1 * !A3 * B1 * X)	-0.00113	-0.00114	-0.00113
	(A1 * !A3 * !B1 * !X)	0.00050	0.00050	0.00050
	(A1 * !A3 * !B1 * !X)	-0.00114	-0.00114	-0.00113
	(!A1 * A3 * A4 * B1 * X)	0.00093	0.00094	0.00093
	(!A1 * A3 * A4 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * A3 * A4 * !B1 * !X)	0.00092	0.00093	0.00093
	(!A1 * A3 * A4 * !B1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * A3 * !A4 * B1 * X)	0.00060	0.00060	0.00060
	(!A1 * A3 * !A4 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * A3 * !A4 * !B1 * !X)	0.00056	0.00056	0.00056
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * !A3 * B1 * X)	0.00059	0.00060	0.00060
	(!A1 * !A3 * B1 * X)	-0.00113	-0.00114	-0.00113
	(!A1 * !A3 * !B1 * !X)	0.00055	0.00055	0.00054
	(!A1 * !A3 * !B1 * !X)	-0.00114	-0.00114	-0.00114

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00101	0.00101	0.00100
	(A1 * A3 * A4 * B1 * X)	-0.00107	-0.00108	-0.00108
	(A1 * A3 * !A4 * B1 * X)	0.00092	0.00092	0.00092
	(A1 * A3 * !A4 * B1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * A3 * !A4 * !B1 * !X)	0.00049	0.00049	0.00050
	(A1 * A3 * !A4 * !B1 * !X)	-0.00114	-0.00114	-0.00113
	(A1 * !A3 * B1 * X)	0.00095	0.00095	0.00095
	(A1 * !A3 * B1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * !A3 * !B1 * !X)	0.00052	0.00052	0.00052
	(A1 * !A3 * !B1 * !X)	-0.00114	-0.00114	-0.00114
	(!A1 * A3 * A4 * B1 * X)	0.00095	0.00095	0.00095
	(!A1 * A3 * A4 * B1 * X)	-0.00113	-0.00114	-0.00114
	(!A1 * A3 * A4 * !B1 * !X)	0.00094	0.00095	0.00094
	(!A1 * A3 * A4 * !B1 * !X)	-0.00114	-0.00115	-0.00114
	(!A1 * A3 * !A4 * B1 * X)	0.00061	0.00061	0.00061
	(!A1 * A3 * !A4 * B1 * X)	-0.00113	-0.00114	-0.00114
	(!A1 * A3 * !A4 * !B1 * !X)	0.00058	0.00058	0.00057
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00115	-0.00115	-0.00114
	(!A1 * !A3 * B1 * X)	0.00062	0.00063	0.00063
	(!A1 * !A3 * B1 * X)	-0.00113	-0.00114	-0.00114
	(!A1 * !A3 * !B1 * !X)	0.00057	0.00057	0.00057
	(!A1 * !A3 * !B1 * !X)	-0.00114	-0.00115	-0.00115

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00200	0.00199	0.00199
	(A1 * A3 * A4 * B1 * X)	-0.00213	-0.00219	-0.00218
	(A1 * A3 * !A4 * B1 * X)	0.00178	0.00179	0.00178
	(A1 * A3 * !A4 * B1 * X)	-0.00229	-0.00230	-0.00229
	(A1 * A3 * !A4 * !B1 * !X)	0.00093	0.00094	0.00096
	(A1 * A3 * !A4 * !B1 * !X)	-0.00228	-0.00229	-0.00228
	(A1 * !A3 * B1 * X)	0.00184	0.00185	0.00184
	(A1 * !A3 * B1 * X)	-0.00229	-0.00230	-0.00229
	(A1 * !A3 * !B1 * !X)	0.00096	0.00097	0.00097
	(A1 * !A3 * !B1 * !X)	-0.00228	-0.00230	-0.00229
	(!A1 * A3 * A4 * B1 * X)	0.00187	0.00189	0.00188
	(!A1 * A3 * A4 * B1 * X)	-0.00228	-0.00230	-0.00229
	(!A1 * A3 * A4 * !B1 * !X)	0.00186	0.00188	0.00187
	(!A1 * A3 * A4 * !B1 * !X)	-0.00228	-0.00230	-0.00229
	(!A1 * A3 * !A4 * B1 * X)	0.00117	0.00117	0.00117
	(!A1 * A3 * !A4 * B1 * X)	-0.00229	-0.00230	-0.00229
	(!A1 * A3 * !A4 * !B1 * !X)	0.00109	0.00110	0.00110
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00230	-0.00231	-0.00230
	(!A1 * !A3 * B1 * X)	0.00115	0.00117	0.00116
	(!A1 * !A3 * B1 * X)	-0.00229	-0.00230	-0.00229
	(!A1 * !A3 * !B1 * !X)	0.00104	0.00105	0.00105
	(!A1 * !A3 * !B1 * !X)	-0.00230	-0.00231	-0.00230

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)**	-0.00099	-0.00099	-0.00099
	(A1 * A3 * A4 * B1 * X)	0.00108	0.00108	0.00108
	(A1 * A3 * !A4 * B1 * X)	-0.00085	-0.00091	-0.00091
	(A1 * A3 * !A4 * B1 * X)	0.00113	0.00114	0.00114
	(A1 * A3 * !A4 * !B1 * !X)	-0.00047	-0.00047	-0.00048
	(A1 * A3 * !A4 * !B1 * !X)	0.00116	0.00116	0.00114
	(A1 * !A3 * B1 * X)	-0.00091	-0.00094	-0.00094
	(A1 * !A3 * B1 * X)	0.00113	0.00114	0.00114
	(A1 * !A3 * !B1 * !X)	-0.00048	-0.00048	-0.00049
	(A1 * !A3 * !B1 * !X)	0.00116	0.00116	0.00114
	(!A1 * A3 * A4 * B1 * X)	-0.00091	-0.00094	-0.00093
	(!A1 * A3 * A4 * B1 * X)	0.00113	0.00114	0.00114
	(!A1 * A3 * A4 * !B1 * !X)	-0.00090	-0.00093	-0.00093
	(!A1 * A3 * A4 * !B1 * !X)	0.00114	0.00115	0.00114
	(!A1 * A3 * !A4 * B1 * X)	-0.00060	-0.00060	-0.00060
	(!A1 * A3 * !A4 * B1 * X)	0.00114	0.00114	0.00114
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00056	-0.00056	-0.00056
	(!A1 * A3 * !A4 * !B1 * !X)	0.00115	0.00114	0.00114
	(!A1 * !A3 * B1 * X)	-0.00059	-0.00060	-0.00060
	(!A1 * !A3 * B1 * X)	0.00113	0.00114	0.00114
	(!A1 * !A3 * !B1 * !X)	-0.00055	-0.00055	-0.00054
	(!A1 * !A3 * !B1 * !X)	0.00114	0.00114	0.00114

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00100	-0.00100	-0.00100
	(A1 * A3 * A4 * B1 * X)	0.00108	0.00108	0.00108
	(A1 * A3 * !A4 * B1 * X)	-0.00086	-0.00092	-0.00092
	(A1 * A3 * !A4 * B1 * X)	0.00114	0.00115	0.00114
	(A1 * A3 * !A4 * !B1 * !X)	-0.00049	-0.00049	-0.00050
	(A1 * A3 * !A4 * !B1 * !X)	0.00117	0.00117	0.00115
	(A1 * !A3 * B1 * X)	-0.00092	-0.00095	-0.00095
	(A1 * !A3 * B1 * X)	0.00114	0.00115	0.00114
	(A1 * !A3 * !B1 * !X)	-0.00049	-0.00050	-0.00051
	(A1 * !A3 * !B1 * !X)	0.00117	0.00117	0.00115
	(!A1 * A3 * A4 * B1 * X)	-0.00092	-0.00095	-0.00095
	(!A1 * A3 * A4 * B1 * X)	0.00114	0.00115	0.00114
	(!A1 * A3 * A4 * !B1 * !X)	-0.00092	-0.00095	-0.00094
	(!A1 * A3 * A4 * !B1 * !X)	0.00114	0.00116	0.00115
	(!A1 * A3 * !A4 * B1 * X)	-0.00061	-0.00061	-0.00061
	(!A1 * A3 * !A4 * B1 * X)	0.00114	0.00114	0.00114
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00058	-0.00058	-0.00057
	(!A1 * A3 * !A4 * !B1 * !X)	0.00115	0.00115	0.00115
	(!A1 * !A3 * B1 * X)	-0.00062	-0.00063	-0.00063
	(!A1 * !A3 * B1 * X)	0.00114	0.00114	0.00114
	(!A1 * !A3 * !B1 * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * !A3 * !B1 * !X)	0.00114	0.00115	0.00115

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00199	-0.00199	-0.00199
	(A1 * A3 * A4 * B1 * X)	0.00218	0.00219	0.00218
	(A1 * A3 * !A4 * B1 * X)	-0.00167	-0.00179	-0.00178
	(A1 * A3 * !A4 * B1 * X)	0.00229	0.00232	0.00230
	(A1 * A3 * !A4 * !B1 * !X)	-0.00089	-0.00089	-0.00091
	(A1 * A3 * !A4 * !B1 * !X)	0.00236	0.00236	0.00231
	(A1 * !A3 * B1 * X)	-0.00177	-0.00185	-0.00184
	(A1 * !A3 * B1 * X)	0.00229	0.00232	0.00230
	(A1 * !A3 * !B1 * !X)	-0.00091	-0.00091	-0.00094
	(A1 * !A3 * !B1 * !X)	0.00235	0.00236	0.00231
	(!A1 * A3 * A4 * B1 * X)	-0.00181	-0.00189	-0.00188
	(!A1 * A3 * A4 * B1 * X)	0.00229	0.00232	0.00230
	(!A1 * A3 * A4 * !B1 * !X)	-0.00180	-0.00188	-0.00187
	(!A1 * A3 * A4 * !B1 * !X)	0.00230	0.00232	0.00230
	(!A1 * A3 * !A4 * B1 * X)	-0.00117	-0.00117	-0.00117
	(!A1 * A3 * !A4 * B1 * X)	0.00229	0.00231	0.00230
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00109	-0.00110	-0.00110
	(!A1 * A3 * !A4 * !B1 * !X)	0.00232	0.00232	0.00231
	(!A1 * !A3 * B1 * X)	-0.00115	-0.00117	-0.00116
	(!A1 * !A3 * B1 * X)	0.00229	0.00231	0.00230
	(!A1 * !A3 * !B1 * !X)	-0.00104	-0.00105	-0.00105
	(!A1 * !A3 * !B1 * !X)	0.00232	0.00232	0.00231

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)**	0.00098	0.00097	0.00097
	(A1 * A2 * A4 * B1 * X)	-0.00108	-0.00110	-0.00110
	(A1 * A2 * !A4 * B1 * X)	0.00091	0.00092	0.00092
	(A1 * A2 * !A4 * B1 * X)	-0.00115	-0.00116	-0.00116
	(A1 * A2 * !A4 * !B1 * !X)	0.00050	0.00050	0.00050
	(A1 * A2 * !A4 * !B1 * !X)	-0.00116	-0.00116	-0.00116
	(A1 * !A2 * A4 * !B1 * !X)	0.00092	0.00092	0.00092
	(A1 * !A2 * A4 * !B1 * !X)	-0.00115	-0.00116	-0.00116
	(A1 * !A2 * !A4 * !B1 * !X)	0.00057	0.00056	0.00056
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00116	-0.00116	-0.00116
	(!A2 * A4 * B1 * X)	0.00092	0.00092	0.00092
	(!A2 * A4 * B1 * X)	-0.00115	-0.00116	-0.00116
	(!A2 * !A4 * B1 * X)	0.00059	0.00060	0.00060
	(!A2 * !A4 * B1 * X)	-0.00115	-0.00116	-0.00116
	(!A1 * A2 * A4 * B1 * X)	0.00089	0.00090	0.00089
	(!A1 * A2 * A4 * B1 * X)	-0.00115	-0.00116	-0.00116
	(!A1 * A2 * A4 * !B1 * !X)	0.00089	0.00090	0.00089
	(!A1 * A2 * A4 * !B1 * !X)	-0.00115	-0.00116	-0.00116
	(!A1 * A2 * !A4 * B1 * X)	0.00059	0.00059	0.00059
	(!A1 * A2 * !A4 * B1 * X)	-0.00115	-0.00116	-0.00116
	(!A1 * A2 * !A4 * !B1 * !X)	0.00055	0.00055	0.00055
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !A2 * A4 * !B1 * !X)	0.00092	0.00092	0.00092
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00115	-0.00116	-0.00116
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00058	0.00059	0.00058
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00115	-0.00116	-0.00116

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00102	0.00103	0.00102
	(A1 * A2 * A4 * B1 * X)	-0.00107	-0.00109	-0.00109
	(A1 * A2 * !A4 * B1 * X)	0.00095	0.00096	0.00096
	(A1 * A2 * !A4 * B1 * X)	-0.00114	-0.00115	-0.00115
	(A1 * A2 * !A4 * !B1 * !X)	0.00052	0.00052	0.00052
	(A1 * A2 * !A4 * !B1 * !X)	-0.00115	-0.00115	-0.00115
	(A1 * !A2 * A4 * !B1 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * A4 * !B1 * !X)	-0.00114	-0.00115	-0.00115
	(A1 * !A2 * !A4 * !B1 * !X)	0.00057	0.00058	0.00058
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00114	-0.00115	-0.00115
	(!A2 * A4 * B1 * X)	0.00096	0.00097	0.00096
	(!A2 * A4 * B1 * X)	-0.00114	-0.00115	-0.00115
	(!A2 * !A4 * B1 * X)	0.00061	0.00061	0.00061
	(!A2 * !A4 * B1 * X)	-0.00114	-0.00115	-0.00115
	(!A1 * A2 * A4 * B1 * X)	0.00093	0.00094	0.00094
	(!A1 * A2 * A4 * B1 * X)	-0.00114	-0.00115	-0.00115
	(!A1 * A2 * A4 * !B1 * !X)	0.00093	0.00095	0.00094
	(!A1 * A2 * A4 * !B1 * !X)	-0.00114	-0.00115	-0.00115
	(!A1 * A2 * !A4 * B1 * X)	0.00062	0.00062	0.00062
	(!A1 * A2 * !A4 * B1 * X)	-0.00115	-0.00115	-0.00115
	(!A1 * A2 * !A4 * !B1 * !X)	0.00058	0.00058	0.00058
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00115	-0.00115	-0.00115
	(!A1 * !A2 * A4 * !B1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00114	-0.00115	-0.00115
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00059	0.00060	0.00060
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00114	-0.00115	-0.00115

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00203	0.00205	0.00203
	(A1 * A2 * A4 * B1 * X)	-0.00215	-0.00221	-0.00221
	(A1 * A2 * !A4 * B1 * X)	0.00190	0.00192	0.00191
	(A1 * A2 * !A4 * B1 * X)	-0.00232	-0.00234	-0.00232
	(A1 * A2 * !A4 * !B1 * !X)	0.00100	0.00100	0.00099
	(A1 * A2 * !A4 * !B1 * !X)	-0.00233	-0.00233	-0.00232
	(A1 * !A2 * A4 * !B1 * !X)	0.00188	0.00190	0.00188
	(A1 * !A2 * A4 * !B1 * !X)	-0.00231	-0.00233	-0.00232
	(A1 * !A2 * !A4 * !B1 * !X)	0.00111	0.00111	0.00110
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00233	-0.00233	-0.00233
	(!A2 * A4 * B1 * X)	0.00188	0.00189	0.00188
	(!A2 * A4 * B1 * X)	-0.00231	-0.00233	-0.00232
	(!A2 * !A4 * B1 * X)	0.00118	0.00118	0.00118
	(!A2 * !A4 * B1 * X)	-0.00232	-0.00233	-0.00233
	(!A1 * A2 * A4 * B1 * X)	0.00184	0.00185	0.00184
	(!A1 * A2 * A4 * B1 * X)	-0.00232	-0.00233	-0.00232
	(!A1 * A2 * A4 * !B1 * !X)	0.00183	0.00184	0.00184
	(!A1 * A2 * A4 * !B1 * !X)	-0.00232	-0.00233	-0.00232
	(!A1 * A2 * !A4 * B1 * X)	0.00118	0.00119	0.00119
	(!A1 * A2 * !A4 * B1 * X)	-0.00232	-0.00233	-0.00233
	(!A1 * A2 * !A4 * !B1 * !X)	0.00111	0.00111	0.00110
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00234	-0.00234	-0.00233
	(!A1 * !A2 * A4 * !B1 * !X)	0.00188	0.00190	0.00188
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00231	-0.00233	-0.00232
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00113	0.00114	0.00114
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00231	-0.00233	-0.00233

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)**	-0.00097	-0.00097	-0.00097
	(A1 * A2 * A4 * B1 * X)	0.00110	0.00110	0.00110
	(A1 * A2 * !A4 * B1 * X)	-0.00089	-0.00092	-0.00092
	(A1 * A2 * !A4 * B1 * X)	0.00116	0.00117	0.00116
	(A1 * A2 * !A4 * !B1 * !X)	-0.00049	-0.00049	-0.00049
	(A1 * A2 * !A4 * !B1 * !X)	0.00116	0.00116	0.00116
	(A1 * !A2 * A4 * !B1 * !X)	-0.00089	-0.00092	-0.00092
	(A1 * !A2 * A4 * !B1 * !X)	0.00115	0.00117	0.00116
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00057	-0.00056	-0.00056
	(A1 * !A2 * !A4 * !B1 * !X)	0.00116	0.00116	0.00116
	(!A2 * A4 * B1 * X)	-0.00089	-0.00092	-0.00092
	(!A2 * A4 * B1 * X)	0.00115	0.00117	0.00116
	(!A2 * !A4 * B1 * X)	-0.00059	-0.00060	-0.00060
	(!A2 * !A4 * B1 * X)	0.00116	0.00116	0.00116
	(!A1 * A2 * A4 * B1 * X)	-0.00084	-0.00090	-0.00089
	(!A1 * A2 * A4 * B1 * X)	0.00116	0.00117	0.00116
	(!A1 * A2 * A4 * !B1 * !X)	-0.00084	-0.00090	-0.00089
	(!A1 * A2 * A4 * !B1 * !X)	0.00116	0.00117	0.00116
	(!A1 * A2 * !A4 * B1 * X)	-0.00059	-0.00059	-0.00059
	(!A1 * A2 * !A4 * B1 * X)	0.00116	0.00116	0.00116
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00055	-0.00055	-0.00055
	(!A1 * A2 * !A4 * !B1 * !X)	0.00116	0.00116	0.00116
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00089	-0.00092	-0.00092
	(!A1 * !A2 * A4 * !B1 * !X)	0.00115	0.00117	0.00116
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00058	-0.00059	-0.00058
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00116	0.00116	0.00116

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00101	-0.00102	-0.00102
	(A1 * A2 * A4 * B1 * X)	0.00109	0.00109	0.00109
	(A1 * A2 * !A4 * B1 * X)	-0.00093	-0.00096	-0.00096
	(A1 * A2 * !A4 * B1 * X)	0.00115	0.00116	0.00115
	(A1 * A2 * !A4 * !B1 * !X)	-0.00051	-0.00052	-0.00052
	(A1 * A2 * !A4 * !B1 * !X)	0.00115	0.00115	0.00115
	(A1 * !A2 * A4 * !B1 * !X)	-0.00094	-0.00097	-0.00096
	(A1 * !A2 * A4 * !B1 * !X)	0.00114	0.00116	0.00115
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00057	-0.00058	-0.00058
	(A1 * !A2 * !A4 * !B1 * !X)	0.00115	0.00115	0.00115
	(!A2 * A4 * B1 * X)	-0.00094	-0.00097	-0.00096
	(!A2 * A4 * B1 * X)	0.00114	0.00116	0.00115
	(!A2 * !A4 * B1 * X)	-0.00061	-0.00061	-0.00061
	(!A2 * !A4 * B1 * X)	0.00114	0.00115	0.00115
	(!A1 * A2 * A4 * B1 * X)	-0.00089	-0.00094	-0.00094
	(!A1 * A2 * A4 * B1 * X)	0.00115	0.00116	0.00115
	(!A1 * A2 * A4 * !B1 * !X)	-0.00089	-0.00095	-0.00094
	(!A1 * A2 * A4 * !B1 * !X)	0.00115	0.00116	0.00115
	(!A1 * A2 * !A4 * B1 * X)	-0.00062	-0.00062	-0.00062
	(!A1 * A2 * !A4 * B1 * X)	0.00116	0.00115	0.00115
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00058	-0.00058	-0.00058
	(!A1 * A2 * !A4 * !B1 * !X)	0.00116	0.00115	0.00115
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00094	-0.00097	-0.00096
	(!A1 * !A2 * A4 * !B1 * !X)	0.00114	0.00116	0.00115
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00059	-0.00060	-0.00060
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00115	0.00115	0.00115

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00203	-0.00203	-0.00203
	(A1 * A2 * A4 * B1 * X)	0.00222	0.00221	0.00221
	(A1 * A2 * !A4 * B1 * X)	-0.00183	-0.00192	-0.00191
	(A1 * A2 * !A4 * B1 * X)	0.00232	0.00235	0.00233
	(A1 * A2 * !A4 * !B1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * A2 * !A4 * !B1 * !X)	0.00235	0.00236	0.00234
	(A1 * !A2 * A4 * !B1 * !X)	-0.00182	-0.00190	-0.00188
	(A1 * !A2 * A4 * !B1 * !X)	0.00231	0.00235	0.00233
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00111	-0.00111	-0.00110
	(A1 * !A2 * !A4 * !B1 * !X)	0.00233	0.00233	0.00233
	(!A2 * A4 * B1 * X)	-0.00182	-0.00189	-0.00188
	(!A2 * A4 * B1 * X)	0.00231	0.00235	0.00233
	(!A2 * !A4 * B1 * X)	-0.00118	-0.00118	-0.00118
	(!A2 * !A4 * B1 * X)	0.00232	0.00233	0.00233
	(!A1 * A2 * A4 * B1 * X)	-0.00174	-0.00185	-0.00184
	(!A1 * A2 * A4 * B1 * X)	0.00234	0.00234	0.00233
	(!A1 * A2 * A4 * !B1 * !X)	-0.00174	-0.00184	-0.00184
	(!A1 * A2 * A4 * !B1 * !X)	0.00234	0.00234	0.00233
	(!A1 * A2 * !A4 * B1 * X)	-0.00118	-0.00119	-0.00119
	(!A1 * A2 * !A4 * B1 * X)	0.00233	0.00233	0.00233
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00111	-0.00111	-0.00110
	(!A1 * A2 * !A4 * !B1 * !X)	0.00235	0.00234	0.00234
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00182	-0.00190	-0.00188
	(!A1 * !A2 * A4 * !B1 * !X)	0.00231	0.00235	0.00233
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00113	-0.00114	-0.00114
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00233	0.00233	0.00233

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)**	0.00103	0.00104	0.00104
	(A1 * A2 * A3 * B1 * X)	-0.00107	-0.00110	-0.00110
	(A1 * A2 * !A3 * !B1 * !X)	0.00099	0.00100	0.00099
	(A1 * A2 * !A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * A3 * !B1 * !X)	0.00097	0.00097	0.00097
	(A1 * !A2 * A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !A3 * !B1 * !X)	0.00099	0.00099	0.00099
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(!A3 * B1 * X)	0.00099	0.00100	0.00099
	(!A3 * B1 * X)	-0.00115	-0.00116	-0.00115
	(!A2 * A3 * B1 * X)	0.00097	0.00098	0.00097
	(!A2 * A3 * B1 * X)	-0.00115	-0.00116	-0.00115
	(!A1 * A2 * A3 * B1 * X)	0.00095	0.00097	0.00096
	(!A1 * A2 * A3 * B1 * X)	-0.00115	-0.00116	-0.00115
	(!A1 * A2 * A3 * !B1 * !X)	0.00095	0.00096	0.00096
	(!A1 * A2 * A3 * !B1 * !X)	-0.00114	-0.00115	-0.00115
	(!A1 * !A3 * !B1 * !X)	0.00099	0.00099	0.00099
	(!A1 * !A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(!A1 * !A2 * A3 * !B1 * !X)	0.00097	0.00097	0.00097
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00103	0.00103	0.00103
	(A1 * A2 * A3 * B1 * X)	-0.00107	-0.00110	-0.00110
	(A1 * A2 * !A3 * !B1 * !X)	0.00097	0.00098	0.00097
	(A1 * A2 * !A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * A3 * !B1 * !X)	0.00095	0.00096	0.00096
	(A1 * !A2 * A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A2 * !A3 * !B1 * !X)	0.00097	0.00098	0.00097
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(!A3 * B1 * X)	0.00098	0.00098	0.00097
	(!A3 * B1 * X)	-0.00115	-0.00116	-0.00115
	(!A2 * A3 * B1 * X)	0.00095	0.00097	0.00096
	(!A2 * A3 * B1 * X)	-0.00115	-0.00116	-0.00115
	(!A1 * A2 * A3 * B1 * X)	0.00095	0.00096	0.00095
	(!A1 * A2 * A3 * B1 * X)	-0.00115	-0.00116	-0.00115
	(!A1 * A2 * A3 * !B1 * !X)	0.00094	0.00096	0.00095
	(!A1 * A2 * A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(!A1 * !A3 * !B1 * !X)	0.00097	0.00098	0.00097
	(!A1 * !A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(!A1 * !A2 * A3 * !B1 * !X)	0.00095	0.00096	0.00096
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00201	0.00203	0.00201
	(A1 * A2 * A3 * B1 * X)	-0.00212	-0.00218	-0.00217
	(A1 * A2 * !A3 * !B1 * !X)	0.00188	0.00189	0.00188
	(A1 * A2 * !A3 * !B1 * !X)	-0.00226	-0.00227	-0.00226
	(A1 * !A2 * A3 * !B1 * !X)	0.00181	0.00182	0.00181
	(A1 * !A2 * A3 * !B1 * !X)	-0.00226	-0.00227	-0.00226
	(A1 * !A2 * !A3 * !B1 * !X)	0.00188	0.00189	0.00188
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00226	-0.00227	-0.00226
	(!A3 * B1 * X)	0.00189	0.00189	0.00188
	(!A3 * B1 * X)	-0.00227	-0.00227	-0.00226
	(!A2 * A3 * B1 * X)	0.00181	0.00182	0.00181
	(!A2 * A3 * B1 * X)	-0.00226	-0.00227	-0.00226
	(!A1 * A2 * A3 * B1 * X)	0.00180	0.00181	0.00180
	(!A1 * A2 * A3 * B1 * X)	-0.00226	-0.00228	-0.00226
	(!A1 * A2 * A3 * !B1 * !X)	0.00179	0.00181	0.00180
	(!A1 * A2 * A3 * !B1 * !X)	-0.00226	-0.00227	-0.00226
	(!A1 * !A3 * !B1 * !X)	0.00187	0.00189	0.00188
	(!A1 * !A3 * !B1 * !X)	-0.00226	-0.00227	-0.00226
	(!A1 * !A2 * A3 * !B1 * !X)	0.00181	0.00182	0.00181
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00226	-0.00227	-0.00226

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)**	-0.00103	-0.00104	-0.00104
	(A1 * A2 * A3 * B1 * X)	0.00110	0.00110	0.00110
	(A1 * A2 * !A3 * !B1 * !X)	-0.00097	-0.00099	-0.00099
	(A1 * A2 * !A3 * !B1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * A3 * !B1 * !X)	-0.00093	-0.00097	-0.00097
	(A1 * !A2 * A3 * !B1 * !X)	0.00115	0.00116	0.00116
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00097	-0.00099	-0.00099
	(A1 * !A2 * !A3 * !B1 * !X)	0.00115	0.00116	0.00115
	(!A3 * B1 * X)	-0.00097	-0.00099	-0.00099
	(!A3 * B1 * X)	0.00115	0.00116	0.00115
	(!A2 * A3 * B1 * X)	-0.00093	-0.00097	-0.00097
	(!A2 * A3 * B1 * X)	0.00115	0.00116	0.00116
	(!A1 * A2 * A3 * B1 * X)	-0.00091	-0.00096	-0.00096
	(!A1 * A2 * A3 * B1 * X)	0.00115	0.00116	0.00116
	(!A1 * A2 * A3 * !B1 * !X)	-0.00091	-0.00096	-0.00096
	(!A1 * A2 * A3 * !B1 * !X)	0.00115	0.00115	0.00116
	(!A1 * !A3 * !B1 * !X)	-0.00097	-0.00099	-0.00099
	(!A1 * !A3 * !B1 * !X)	0.00115	0.00116	0.00115
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00093	-0.00097	-0.00097
	(!A1 * !A2 * A3 * !B1 * !X)	0.00115	0.00116	0.00116

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00103	-0.00103	-0.00103
	(A1 * A2 * A3 * B1 * X)	0.00110	0.00110	0.00110
	(A1 * A2 * !A3 * !B1 * !X)	-0.00095	-0.00098	-0.00097
	(A1 * A2 * !A3 * !B1 * !X)	0.00115	0.00116	0.00116
	(A1 * !A2 * A3 * !B1 * !X)	-0.00092	-0.00096	-0.00096
	(A1 * !A2 * A3 * !B1 * !X)	0.00116	0.00116	0.00116
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00095	-0.00098	-0.00097
	(A1 * !A2 * !A3 * !B1 * !X)	0.00115	0.00116	0.00116
	(!A3 * B1 * X)	-0.00095	-0.00098	-0.00097
	(!A3 * B1 * X)	0.00115	0.00117	0.00116
	(!A2 * A3 * B1 * X)	-0.00092	-0.00096	-0.00096
	(!A2 * A3 * B1 * X)	0.00116	0.00116	0.00116
	(!A1 * A2 * A3 * B1 * X)	-0.00090	-0.00096	-0.00095
	(!A1 * A2 * A3 * B1 * X)	0.00115	0.00116	0.00116
	(!A1 * A2 * A3 * !B1 * !X)	-0.00090	-0.00096	-0.00095
	(!A1 * A2 * A3 * !B1 * !X)	0.00115	0.00116	0.00116
	(!A1 * !A3 * !B1 * !X)	-0.00095	-0.00098	-0.00097
	(!A1 * !A3 * !B1 * !X)	0.00115	0.00116	0.00116
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00092	-0.00096	-0.00096
	(!A1 * !A2 * A3 * !B1 * !X)	0.00116	0.00116	0.00116

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00201	-0.00201	-0.00201
	(A1 * A2 * A3 * B1 * X)	0.00216	0.00218	0.00217
	(A1 * A2 * !A3 * !B1 * !X)	-0.00184	-0.00189	-0.00188
	(A1 * A2 * !A3 * !B1 * !X)	0.00227	0.00228	0.00227
	(A1 * !A2 * A3 * !B1 * !X)	-0.00175	-0.00182	-0.00181
	(A1 * !A2 * A3 * !B1 * !X)	0.00228	0.00228	0.00227
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00184	-0.00189	-0.00188
	(A1 * !A2 * !A3 * !B1 * !X)	0.00227	0.00228	0.00227
	(!A3 * B1 * X)	-0.00185	-0.00189	-0.00188
	(!A3 * B1 * X)	0.00228	0.00228	0.00227
	(!A2 * A3 * B1 * X)	-0.00175	-0.00182	-0.00181
	(!A2 * A3 * B1 * X)	0.00228	0.00228	0.00227
	(!A1 * A2 * A3 * B1 * X)	-0.00171	-0.00181	-0.00180
	(!A1 * A2 * A3 * B1 * X)	0.00227	0.00228	0.00227
	(!A1 * A2 * A3 * !B1 * !X)	-0.00171	-0.00181	-0.00180
	(!A1 * A2 * A3 * !B1 * !X)	0.00227	0.00228	0.00227
	(!A1 * !A3 * !B1 * !X)	-0.00184	-0.00189	-0.00188
	(!A1 * !A3 * !B1 * !X)	0.00227	0.00228	0.00227
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00175	-0.00182	-0.00181
	(!A1 * !A2 * A3 * !B1 * !X)	0.00228	0.00228	0.00227

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)	0.00119	0.00118	0.00118
	(A1 * A2 * A3 * A4 * X)	-0.00070	-0.00069	-0.00068
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00121	0.00119	0.00119
	(A1 * A2 * A3 * A4 * X)	-0.00071	-0.00069	-0.00069
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00224	0.00224	0.00224
	(A1 * A2 * A3 * A4 * X)	-0.00142	-0.00142	-0.00142

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	(A1 * A2 * A3 * A4 * X)	-0.00105	-0.00106	-0.00117
	(A1 * A2 * A3 * A4 * X)	0.00078	0.00078	0.00070
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00107	-0.00108	-0.00118
	(A1 * A2 * A3 * A4 * X)	0.00080	0.00079	0.00072
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00197	-0.00199	-0.00222
	(A1 * A2 * A3 * A4 * X)	0.00163	0.00163	0.00147

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A_N	B	X
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2b_1	11.18880
sky130_fd_sc_hs__and2b_2	11.18880
sky130_fd_sc_hs__and2b_4	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	X
sky130_fd_sc_hs__and2b_1	0.00241	0.00225	0.36222
sky130_fd_sc_hs__and2b_2	0.00216	0.00262	0.67324
sky130_fd_sc_hs__and2b_4	0.00243	0.00473	1.38457

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.00020	0.00021
sky130_fd_sc_hs__and2b_2	0.00000	0.00031	0.00035
sky130_fd_sc_hs__and2b_4	0.00000	0.00054	0.00058

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)	0.33042	1.60688	11.26330
	B->X (RR)	0.16039	1.14556	8.60794
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.34302	1.48868	11.40500
	B->X (RR)	0.16125	1.02707	8.77330
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.35262	1.39034	11.66340
	B->X (RR)	0.16429	0.91083	8.81809

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)	0.24741	0.71696	3.09302
	B->X (FF)	0.22400	0.99726	5.93056
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.29672	0.75616	3.09318
	B->X (FF)	0.27204	1.04689	6.29467
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.29078	0.73120	3.16354
	B->X (FF)	0.27726	1.02482	6.28139

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	0.00439	0.00425	0.00415
	A_N	0.00673	0.00658	0.00650
	B	0.00520	0.00512	0.00506
	B	0.00288	0.00278	0.00273
sky130_fd_sc_hs__and2b_2	A_N	0.00659	0.00665	0.00652
	A_N	0.00868	0.00872	0.00861
	B	0.00728	0.00734	0.00731
	B	0.00451	0.00457	0.00455
sky130_fd_sc_hs__and2b_4	A_N	0.01224	0.01263	0.01266
	A_N	0.01447	0.01481	0.01488
	B	0.01377	0.01396	0.01403
	B	0.00896	0.00914	0.00928

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00733	0.00707	0.00693
	A_N	0.00498	0.00473	0.00458
	B	0.00247	0.00240	0.00238
	B	0.00478	0.00471	0.00468
sky130_fd_sc_hs__and2b_2	A_N	0.00884	0.00874	0.00854
	A_N	0.00675	0.00665	0.00645
	B	0.00391	0.00381	0.00464
	B	0.00666	0.00672	0.00672
sky130_fd_sc_hs__and2b_4	A_N	0.01369	0.01401	0.01393
	A_N	0.01146	0.01178	0.01168
	B	0.00759	0.00786	0.00814
	B	0.01238	0.01264	0.01270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00407	0.00387	0.00379
	(!B * !X)	0.00145	0.00124	0.00116
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00388	0.00369	0.00363
	(!B * !X)	0.00145	0.00127	0.00120
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00480	0.00461	0.00453
	(!B * !X)	0.00200	0.00180	0.00173

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00013	-0.00004	-0.00007
	(!B * !X)	0.00275	0.00259	0.00255
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00031	0.00016	0.00013
	(!B * !X)	0.00274	0.00259	0.00257
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00052	0.00036	0.00032
	(!B * !X)	0.00332	0.00317	0.00312

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00088	0.00089	0.00088
	(A_N * !X)	-0.00108	-0.00109	-0.00109
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00108	0.00110	0.00109
	(A_N * !X)	-0.00123	-0.00124	-0.00124
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00190	0.00191	0.00190
	(A_N * !X)	-0.00219	-0.00220	-0.00219

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00087	-0.00088	-0.00088
	(A_N * !X)	0.00108	0.00110	0.00109
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00108	-0.00109	-0.00109
	(A_N * !X)	0.00124	0.00125	0.00124
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00188	-0.00191	-0.00190
	(A_N * !X)	0.00219	0.00221	0.00220

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	X
0	x	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2_1	7.99200
sky130_fd_sc_hs__and2_2	7.99200
sky130_fd_sc_hs__and2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__and2_1	0.00233	0.00225	0.35585
sky130_fd_sc_hs__and2_2	0.00254	0.00279	0.70445
sky130_fd_sc_hs__and2_4	0.00410	0.00452	1.38703

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.00015	0.00017
sky130_fd_sc_hs__and2_2	0.00000	0.00026	0.00031
sky130_fd_sc_hs__and2_4	0.00000	0.00046	0.00053

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)	0.15063	1.13255	8.39802
	B->X (RR)	0.15775	1.15192	8.61033
sky130_fd_sc_hs__and2_2	A->X (RR)	0.14891	1.01081	8.57095
	B->X (RR)	0.15621	1.01800	8.73977
sky130_fd_sc_hs__and2_4	A->X (RR)	0.14682	0.89420	8.63849
	B->X (RR)	0.15585	0.90943	8.83032

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.19870	0.96425	5.79071
	B->X (FF)	0.22824	1.00130	5.93802
sky130_fd_sc_hs__and2_2	A->X (FF)	0.23324	1.00912	6.24309
	B->X (FF)	0.26574	1.04443	6.36871
sky130_fd_sc_hs__and2_4	A->X (FF)	0.25035	0.99276	6.13211
	B->X (FF)	0.27457	1.02047	6.24621

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00494	0.00481	0.00476
	A	0.00237	0.00223	0.00218
	B	0.00530	0.00518	0.00514
	B	0.00237	0.00225	0.00222
sky130_fd_sc_hs__and2_2	A	0.00678	0.00673	0.00672
	A	0.00395	0.00390	0.00391
	B	0.00751	0.00750	0.00747
	B	0.00401	0.00400	0.00397
sky130_fd_sc_hs__and2_4	A	0.01247	0.01249	0.01260
	A	0.00804	0.00809	0.00823
	B	0.01387	0.01409	0.01418
	B	0.00803	0.00824	0.00841

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00192	0.00182	0.00181
	A	0.00449	0.00439	0.00437
	B	0.00242	0.00232	0.00231
	B	0.00532	0.00523	0.00518
sky130_fd_sc_hs__and2_2	A	0.00373	0.00381	0.00386
	A	0.00657	0.00663	0.00663
	B	0.00399	0.00404	0.00403
	B	0.00744	0.00749	0.00747
sky130_fd_sc_hs__and2_4	A	0.00709	0.00732	0.00862
	A	0.01150	0.01171	0.01182
	B	0.00738	0.00770	0.00837
	B	0.01315	0.01345	0.01348

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00056	0.00056	0.00054
	(!B * !X)	-0.00114	-0.00114	-0.00116
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00042	0.00042	0.00040
	(!B * !X)	-0.00136	-0.00136	-0.00137
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00062	0.00062	0.00059
	(!B * !X)	-0.00221	-0.00221	-0.00225

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00054	-0.00054	-0.00053
	(!B * !X)	0.00116	0.00116	0.00116
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00040	-0.00040	-0.00040
	(!B * !X)	0.00139	0.00138	0.00137
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00058	-0.00058	-0.00058
	(!B * !X)	0.00224	0.00226	0.00225

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00077	0.00077	0.00077
	(!A * !X)	-0.00109	-0.00110	-0.00109
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00090	0.00091	0.00090
	(!A * !X)	-0.00133	-0.00134	-0.00134
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00182	0.00183	0.00182
	(!A * !X)	-0.00202	-0.00202	-0.00202

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00076	-0.00077	-0.00077
	(!A * !X)	0.00109	0.00110	0.00110
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00088	-0.00091	-0.00090
	(!A * !X)	0.00134	0.00135	0.00134
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00179	-0.00182	-0.00182
	(!A * !X)	0.00203	0.00202	0.00203

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A_N	B	C	X
x	0	x	0
x	1	0	0
0	1	1	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3b_1	12.78720
sky130_fd_sc_hs__and3b_2	14.38560
sky130_fd_sc_hs__and3b_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	X
sky130_fd_sc_hs__and3b_1	0.00211	0.00221	0.00219	0.35503
sky130_fd_sc_hs__and3b_2	0.00218	0.00267	0.00255	0.67875
sky130_fd_sc_hs__and3b_4	0.00246	0.00452	0.00464	1.40045

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3b_1	0.00000	0.00021	0.00025
sky130_fd_sc_hs__and3b_2	0.00000	0.00032	0.00046
sky130_fd_sc_hs__and3b_4	0.00000	0.00062	0.00088

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)	0.34985	1.62823	11.26560
	B->X (RR)	0.20469	1.22175	8.78150
	C->X (RR)	0.21149	1.20910	8.80603
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.37872	1.52741	11.47800
	B->X (RR)	0.21209	1.11035	9.01636
	C->X (RR)	0.21852	1.09141	9.00611
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.42453	1.47734	11.89880
	B->X (RR)	0.24150	1.03164	9.17239
	C->X (RR)	0.24715	0.99543	9.11171

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)	0.27390	0.73185	3.00200
	B->X (FF)	0.25556	1.03297	6.01611
	C->X (FF)	0.27318	1.05200	6.11195
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.30663	0.76346	3.07234
	B->X (FF)	0.28635	1.06571	6.38097
	C->X (FF)	0.32004	1.10159	6.49739
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.28541	0.73092	3.17307
	B->X (FF)	0.26720	1.02540	6.41267
	C->X (FF)	0.28764	1.04736	6.49656

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	0.00530	0.00520	0.00508
	A_N	0.00720	0.00709	0.00699
	B	0.00585	0.00581	0.00575
	B	0.00347	0.00342	0.00337
	C	0.00636	0.00631	0.00626
	C	0.00355	0.00349	0.00346
sky130_fd_sc_hs__and3b_2	A_N	0.00749	0.00752	0.00744
	A_N	0.00949	0.00949	0.00944
	B	0.00822	0.00828	0.00828
	B	0.00540	0.00545	0.00549
	C	0.00877	0.00887	0.00882
	C	0.00550	0.00558	0.00558
sky130_fd_sc_hs__and3b_4	A_N	0.01349	0.01382	0.01383
	A_N	0.01543	0.01579	0.01583
	B	0.01495	0.01511	0.01528
	B	0.00999	0.01016	0.01044
	C	0.01607	0.01632	0.01641
	C	0.01004	0.01028	0.01047

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00679	0.00653	0.00639
	A_N	0.00489	0.00464	0.00449
	B	0.00249	0.00237	0.00250
	B	0.00487	0.00479	0.00476
	C	0.00273	0.00266	0.00269
	C	0.00548	0.00540	0.00535
sky130_fd_sc_hs__and3b_2	A_N	0.00863	0.00859	0.00844
	A_N	0.00663	0.00659	0.00643
	B	0.00387	0.00396	0.00434
	B	0.00668	0.00676	0.00675
	C	0.00421	0.00417	0.00463
	C	0.00741	0.00748	0.00743
sky130_fd_sc_hs__and3b_4	A_N	0.01433	0.01464	0.01440
	A_N	0.01238	0.01269	0.01241
	B	0.00813	0.00837	0.00902
	B	0.01306	0.01328	0.01331
	C	0.00854	0.00877	0.01065
	C	0.01444	0.01474	0.01475

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)	0.00345	0.00328	0.00322
	(B * !C * !X)	0.00111	0.00094	0.00088
	(!B * !X)	0.00344	0.00327	0.00321
	(!B * !X)	0.00112	0.00094	0.00088
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00376	0.00358	0.00350
	(B * !C * !X)	0.00133	0.00113	0.00107
	(!B * !X)	0.00375	0.00357	0.00349
	(!B * !X)	0.00133	0.00114	0.00107
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00515	0.00495	0.00486
	(B * !C * !X)	0.00244	0.00223	0.00215
	(!B * !X)	0.00512	0.00492	0.00483
	(!B * !X)	0.00244	0.00223	0.00215

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)	0.00016	0.00002	-0.00000
	(B * !C * !X)	0.00253	0.00240	0.00236
	(!B * !X)	0.00015	0.00002	-0.00000
	(!B * !X)	0.00248	0.00235	0.00233
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00025	0.00009	0.00006
	(B * !C * !X)	0.00273	0.00258	0.00253
	(!B * !X)	0.00024	0.00008	0.00006
	(!B * !X)	0.00267	0.00251	0.00249
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00044	0.00026	0.00020
	(B * !C * !X)	0.00325	0.00307	0.00298
	(!B * !X)	0.00045	0.00028	0.00023
	(!B * !X)	0.00315	0.00297	0.00292

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)	0.00088	0.00089	0.00088
	(A_N * C * !X)	-0.00099	-0.00100	-0.00100
	(A_N * !C * !X)	0.00058	0.00058	0.00058
	(A_N * !C * !X)	-0.00100	-0.00100	-0.00100
	(!A_N * !C * !X)	0.00040	0.00040	0.00040
	(!A_N * !C * !X)	-0.00115	-0.00115	-0.00115
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00110	0.00112	0.00111
	(A_N * C * !X)	-0.00119	-0.00120	-0.00120
	(A_N * !C * !X)	0.00074	0.00074	0.00074
	(A_N * !C * !X)	-0.00120	-0.00120	-0.00120
	(!A_N * !C * !X)	0.00053	0.00053	0.00053
	(!A_N * !C * !X)	-0.00136	-0.00137	-0.00137
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00172	0.00173	0.00172
	(A_N * C * !X)	-0.00228	-0.00229	-0.00228
	(A_N * !C * !X)	0.00107	0.00108	0.00108
	(A_N * !C * !X)	-0.00229	-0.00231	-0.00230
	(!A_N * !C * !X)	0.00086	0.00086	0.00086
	(!A_N * !C * !X)	-0.00245	-0.00245	-0.00245

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)	-0.00087	-0.00089	-0.00088
	(A_N * C * !X)	0.00099	0.00101	0.00100
	(A_N * !C * !X)	-0.00058	-0.00058	-0.00058
	(A_N * !C * !X)	0.00100	0.00100	0.00100
	(!A_N * !C * !X)	-0.00038	-0.00038	-0.00038
	(!A_N * !C * !X)	0.00118	0.00117	0.00116
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00109	-0.00111	-0.00111
	(A_N * C * !X)	0.00120	0.00121	0.00120
	(A_N * !C * !X)	-0.00074	-0.00074	-0.00074
	(A_N * !C * !X)	0.00120	0.00120	0.00120
	(!A_N * !C * !X)	-0.00052	-0.00051	-0.00051
	(!A_N * !C * !X)	0.00140	0.00139	0.00138
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00170	-0.00173	-0.00172
	(A_N * C * !X)	0.00230	0.00231	0.00229
	(A_N * !C * !X)	-0.00107	-0.00108	-0.00108
	(A_N * !C * !X)	0.00231	0.00231	0.00231
	(!A_N * !C * !X)	-0.00080	-0.00081	-0.00083
	(!A_N * !C * !X)	0.00249	0.00250	0.00247

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)	0.00077	0.00077	0.00076
	(A_N * B * !X)	-0.00104	-0.00105	-0.00104
	(A_N * !B * !X)	0.00078	0.00078	0.00078
	(A_N * !B * !X)	-0.00104	-0.00105	-0.00104
	(!A_N * !B * !X)	0.00078	0.00078	0.00078
	(!A_N * !B * !X)	-0.00104	-0.00105	-0.00104
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00096	0.00097	0.00096
	(A_N * B * !X)	-0.00120	-0.00120	-0.00120
	(A_N * !B * !X)	0.00098	0.00099	0.00098
	(A_N * !B * !X)	-0.00120	-0.00120	-0.00120
	(!A_N * !B * !X)	0.00098	0.00099	0.00098
	(!A_N * !B * !X)	-0.00119	-0.00120	-0.00120
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00160	0.00161	0.00161
	(A_N * B * !X)	-0.00236	-0.00237	-0.00237
	(A_N * !B * !X)	0.00162	0.00164	0.00162
	(A_N * !B * !X)	-0.00236	-0.00238	-0.00237
	(!A_N * !B * !X)	0.00162	0.00162	0.00162
	(!A_N * !B * !X)	-0.00236	-0.00237	-0.00237

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)	-0.00074	-0.00077	-0.00076
	(A_N * B * !X)	0.00105	0.00105	0.00105
	(A_N * !B * !X)	-0.00076	-0.00078	-0.00078
	(A_N * !B * !X)	0.00105	0.00105	0.00105
	(!A_N * !B * !X)	-0.00076	-0.00078	-0.00078
	(!A_N * !B * !X)	0.00105	0.00105	0.00105
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00094	-0.00097	-0.00096
	(A_N * B * !X)	0.00120	0.00120	0.00120
	(A_N * !B * !X)	-0.00096	-0.00099	-0.00098
	(A_N * !B * !X)	0.00120	0.00120	0.00120
	(!A_N * !B * !X)	-0.00096	-0.00099	-0.00098
	(!A_N * !B * !X)	0.00119	0.00120	0.00120
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00156	-0.00161	-0.00161
	(A_N * B * !X)	0.00237	0.00239	0.00237
	(A_N * !B * !X)	-0.00159	-0.00164	-0.00162
	(A_N * !B * !X)	0.00237	0.00239	0.00237
	(!A_N * !B * !X)	-0.00158	-0.00162	-0.00162
	(!A_N * !B * !X)	0.00238	0.00239	0.00237

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	x	x	0
1	0	x	0
1	1	0	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3_1	9.59040
sky130_fd_sc_hs__and3_2	11.18880
sky130_fd_sc_hs__and3_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__and3_1	0.00240	0.00218	0.00215	0.36850
sky130_fd_sc_hs__and3_2	0.00238	0.00215	0.00218	0.71284
sky130_fd_sc_hs__and3_4	0.00431	0.00413	0.00427	1.38535

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.00016	0.00021
sky130_fd_sc_hs__and3_2	0.00000	0.00025	0.00029
sky130_fd_sc_hs__and3_4	0.00000	0.00050	0.00059

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)	0.18319	1.18624	8.57220
	B->X (RR)	0.19313	1.20881	8.81282
	C->X (RR)	0.19818	1.19641	8.83891
sky130_fd_sc_hs__and3_2	A->X (RR)	0.20107	1.09643	8.82162
	B->X (RR)	0.21102	1.10834	8.99518
	C->X (RR)	0.21608	1.08722	8.97965
sky130_fd_sc_hs__and3_4	A->X (RR)	0.21447	1.00437	8.88343
	B->X (RR)	0.22856	1.02447	9.08159
	C->X (RR)	0.23424	0.98795	9.02496

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.22164	0.99564	5.91362
	B->X (FF)	0.25058	1.02980	6.04602
	C->X (FF)	0.26145	1.04436	6.13089
sky130_fd_sc_hs__and3_2	A->X (FF)	0.28185	1.05406	6.24840
	B->X (FF)	0.31031	1.08400	6.35858
	C->X (FF)	0.32696	1.10211	6.43212
sky130_fd_sc_hs__and3_4	A->X (FF)	0.26492	1.01364	6.22655
	B->X (FF)	0.29461	1.04506	6.35064
	C->X (FF)	0.31988	1.07269	6.44585

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00554	0.00543	0.00538
	A	0.00281	0.00270	0.00266
	B	0.00574	0.00567	0.00564
	B	0.00282	0.00275	0.00273
	C	0.00624	0.00619	0.00615
	C	0.00280	0.00275	0.00272
sky130_fd_sc_hs__and3_2	A	0.00730	0.00731	0.00734
	A	0.00457	0.00459	0.00466
	B	0.00748	0.00759	0.00759
	B	0.00459	0.00469	0.00475
	C	0.00801	0.00811	0.00811
	C	0.00458	0.00468	0.00473
sky130_fd_sc_hs__and3_4	A	0.01360	0.01364	0.01386
	A	0.00860	0.00865	0.00896
	B	0.01458	0.01480	0.01500
	B	0.00863	0.00885	0.00908
	C	0.01570	0.01603	0.01616
	C	0.00862	0.00894	0.00917

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00181	0.00170	0.00181
	A	0.00453	0.00442	0.00440
	B	0.00243	0.00231	0.00232
	B	0.00532	0.00523	0.00518
	C	0.00266	0.00257	0.00258
	C	0.00601	0.00596	0.00590
sky130_fd_sc_hs__and3_2	A	0.00338	0.00348	0.00371
	A	0.00611	0.00619	0.00620
	B	0.00402	0.00404	0.00447
	B	0.00687	0.00699	0.00700
	C	0.00419	0.00431	0.00435
	C	0.00753	0.00765	0.00763
sky130_fd_sc_hs__and3_4	A	0.00726	0.00725	0.00921
	A	0.01225	0.01242	0.01250
	B	0.00813	0.00837	0.00845
	B	0.01399	0.01422	0.01426
	C	0.00860	0.00892	0.00902
	C	0.01546	0.01577	0.01577

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00060	0.00060	0.00057
	(B * !C * !X)	-0.00111	-0.00111	-0.00115
	(!B * !X)	0.00060	0.00060	0.00059
	(!B * !X)	-0.00114	-0.00114	-0.00115
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00060	0.00061	0.00058
	(B * !C * !X)	-0.00108	-0.00109	-0.00113
	(!B * !X)	0.00061	0.00062	0.00060
	(!B * !X)	-0.00111	-0.00112	-0.00114
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00072	0.00072	0.00065
	(B * !C * !X)	-0.00225	-0.00226	-0.00236
	(!B * !X)	0.00073	0.00073	0.00069
	(!B * !X)	-0.00232	-0.00233	-0.00238

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00057	-0.00057	-0.00057
	(B * !C * !X)	0.00115	0.00116	0.00115
	(!B * !X)	-0.00058	-0.00058	-0.00058
	(!B * !X)	0.00115	0.00116	0.00116
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00058	-0.00059	-0.00058
	(B * !C * !X)	0.00113	0.00114	0.00114
	(!B * !X)	-0.00061	-0.00059	-0.00059
	(!B * !X)	0.00115	0.00114	0.00114
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00066	-0.00066	-0.00065
	(B * !C * !X)	0.00240	0.00239	0.00238
	(!B * !X)	-0.00069	-0.00068	-0.00067
	(!B * !X)	0.00240	0.00239	0.00238

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00039	0.00039	0.00039
	(A * !C * !X)	-0.00099	-0.00099	-0.00099
	(!A * C * !X)	0.00075	0.00075	0.00075
	(!A * C * !X)	-0.00099	-0.00100	-0.00099
	(!A * !C * !X)	0.00042	0.00043	0.00042
	(!A * !C * !X)	-0.00099	-0.00100	-0.00100
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00038	0.00038	0.00038
	(A * !C * !X)	-0.00097	-0.00098	-0.00097
	(!A * C * !X)	0.00075	0.00075	0.00074
	(!A * C * !X)	-0.00098	-0.00098	-0.00097
	(!A * !C * !X)	0.00041	0.00041	0.00041
	(!A * !C * !X)	-0.00097	-0.00098	-0.00098
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00087	0.00089	0.00089
	(A * !C * !X)	-0.00192	-0.00194	-0.00193
	(!A * C * !X)	0.00164	0.00165	0.00164
	(!A * C * !X)	-0.00193	-0.00194	-0.00193
	(!A * !C * !X)	0.00097	0.00097	0.00096
	(!A * !C * !X)	-0.00194	-0.00195	-0.00194

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00037	-0.00037	-0.00038
	(A * !C * !X)	0.00103	0.00102	0.00100
	(!A * C * !X)	-0.00073	-0.00075	-0.00075
	(!A * C * !X)	0.00100	0.00100	0.00100
	(!A * !C * !X)	-0.00042	-0.00043	-0.00042
	(!A * !C * !X)	0.00099	0.00100	0.00100
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00036	-0.00036	-0.00037
	(A * !C * !X)	0.00101	0.00100	0.00098
	(!A * C * !X)	-0.00073	-0.00075	-0.00074
	(!A * C * !X)	0.00098	0.00098	0.00098
	(!A * !C * !X)	-0.00041	-0.00041	-0.00041
	(!A * !C * !X)	0.00097	0.00098	0.00098
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00083	-0.00084	-0.00086
	(A * !C * !X)	0.00198	0.00199	0.00195
	(!A * C * !X)	-0.00160	-0.00165	-0.00164
	(!A * C * !X)	0.00195	0.00195	0.00194
	(!A * !C * !X)	-0.00097	-0.00097	-0.00096
	(!A * !C * !X)	0.00194	0.00195	0.00195

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00077	0.00078	0.00077
	(A * !B * !X)	-0.00102	-0.00103	-0.00102
	(!A * B * !X)	0.00076	0.00076	0.00076
	(!A * B * !X)	-0.00102	-0.00103	-0.00102
	(!A * !B * !X)	0.00077	0.00078	0.00078
	(!A * !B * !X)	-0.00102	-0.00103	-0.00102
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00075	0.00076	0.00076
	(A * !B * !X)	-0.00102	-0.00103	-0.00103
	(!A * B * !X)	0.00074	0.00075	0.00074
	(!A * B * !X)	-0.00103	-0.00103	-0.00103
	(!A * !B * !X)	0.00076	0.00076	0.00076
	(!A * !B * !X)	-0.00103	-0.00104	-0.00103
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00161	0.00162	0.00161
	(A * !B * !X)	-0.00204	-0.00205	-0.00204
	(!A * B * !X)	0.00158	0.00160	0.00158
	(!A * B * !X)	-0.00204	-0.00205	-0.00204
	(!A * !B * !X)	0.00161	0.00162	0.00161
	(!A * !B * !X)	-0.00204	-0.00205	-0.00204

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00076	-0.00078	-0.00077
	(A * !B * !X)	0.00103	0.00103	0.00103
	(!A * B * !X)	-0.00073	-0.00076	-0.00076
	(!A * B * !X)	0.00103	0.00103	0.00103
	(!A * !B * !X)	-0.00076	-0.00078	-0.00078
	(!A * !B * !X)	0.00103	0.00103	0.00103
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00074	-0.00076	-0.00076
	(A * !B * !X)	0.00103	0.00104	0.00103
	(!A * B * !X)	-0.00071	-0.00075	-0.00074
	(!A * B * !X)	0.00103	0.00103	0.00103
	(!A * !B * !X)	-0.00074	-0.00076	-0.00076
	(!A * !B * !X)	0.00103	0.00104	0.00103
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00157	-0.00162	-0.00161
	(A * !B * !X)	0.00204	0.00206	0.00205
	(!A * B * !X)	-0.00153	-0.00160	-0.00158
	(!A * B * !X)	0.00206	0.00205	0.00205
	(!A * !B * !X)	-0.00157	-0.00162	-0.00161
	(!A * !B * !X)	0.00204	0.00206	0.00205

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A_N	B_N	C	D	X
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4bb_1	15.98400
sky130_fd_sc_hs__and4bb_2	17.58240
sky130_fd_sc_hs__and4bb_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	X
sky130_fd_sc_hs__and4bb_1	0.00216	0.00219	0.00229	0.00223	0.33899
sky130_fd_sc_hs__and4bb_2	0.00219	0.00207	0.00252	0.00257	0.70257
sky130_fd_sc_hs__and4bb_4	0.00237	0.00253	0.00465	0.00448	1.37306

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4bb_1	0.00000	0.00026	0.00035
sky130_fd_sc_hs__and4bb_2	0.00000	0.00037	0.00061
sky130_fd_sc_hs__and4bb_4	0.00000	0.00069	0.00115

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)	0.41494	1.71245	11.39620
	B_N->X (FR)	0.42545	1.72530	11.40250
	C->X (RR)	0.27132	1.30358	8.97077
	D->X (RR)	0.27612	1.29002	8.96541
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.40627	1.54502	11.37920
	B_N->X (FR)	0.43807	1.57878	11.48280
	C->X (RR)	0.27259	1.15364	9.06767
	D->X (RR)	0.28002	1.13729	9.03955
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.49788	1.56344	11.94430
	B_N->X (FR)	0.54230	1.60937	12.03910
	C->X (RR)	0.32975	1.10486	9.23507
	D->X (RR)	0.33569	1.08265	9.16977

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)	0.29115	0.76223	3.04805
	B_N->X (RF)	0.30683	0.77748	3.06442
	C->X (FF)	0.28802	1.07229	6.16296
	D->X (FF)	0.30852	1.09471	6.25042
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.31329	0.77809	3.17798
	B_N->X (RF)	0.34588	0.82463	3.27250
	C->X (FF)	0.32082	1.11293	6.64205
	D->X (FF)	0.34526	1.13710	6.72825
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.31748	0.77193	3.23243
	B_N->X (RF)	0.33505	0.79895	3.29056
	C->X (FF)	0.29751	1.06169	6.54837
	D->X (FF)	0.32087	1.08664	6.63405

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	0.00568	0.00563	0.00548
	A_N	0.00764	0.00756	0.00743
	B_N	0.00604	0.00604	0.00600
	B_N	0.00827	0.00826	0.00822
	C	0.00657	0.00660	0.00660
	C	0.00420	0.00423	0.00424
	D	0.00700	0.00708	0.00706
	D	0.00429	0.00435	0.00436
sky130_fd_sc_hs__and4bb_2	A_N	0.00766	0.00768	0.00757
	A_N	0.00952	0.00951	0.00942
	B_N	0.00852	0.00850	0.00838
	B_N	0.01044	0.01043	0.01032
	C	0.00893	0.00900	0.00895
	C	0.00617	0.00624	0.00623
	D	0.00957	0.00961	0.00956
	D	0.00628	0.00631	0.00632
sky130_fd_sc_hs__and4bb_4	A_N	0.01515	0.01552	0.01560
	A_N	0.01680	0.01716	0.01735
	B_N	0.01635	0.01669	0.01689
	B_N	0.01833	0.01866	0.01898
	C	0.01741	0.01762	0.01785
	C	0.01228	0.01248	0.01284
	D	0.01833	0.01861	0.01877
	D	0.01234	0.01261	0.01289

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00731	0.00697	0.00676
	A_N	0.00537	0.00502	0.00480
	B_N	0.00746	0.00730	0.00715
	B_N	0.00524	0.00507	0.00492
	C	0.00313	0.00310	0.00307
	C	0.00549	0.00544	0.00540
	D	0.00339	0.00330	0.00339
	D	0.00604	0.00606	0.00600
sky130_fd_sc_hs__and4bb_2	A_N	0.00856	0.00859	0.00836
	A_N	0.00671	0.00669	0.00650
	B_N	0.00894	0.00898	0.00872
	B_N	0.00700	0.00698	0.00679
	C	0.00440	0.00441	0.00503
	C	0.00715	0.00727	0.00725
	D	0.00467	0.00467	0.00476
	D	0.00788	0.00797	0.00793
sky130_fd_sc_hs__and4bb_4	A_N	0.01432	0.01477	0.01447
	A_N	0.01269	0.01306	0.01281
	B_N	0.01528	0.01588	0.01541
	B_N	0.01331	0.01372	0.01342
	C	0.00835	0.00865	0.00867
	C	0.01347	0.01374	0.01375
	D	0.00909	0.00924	0.01116
	D	0.01491	0.01526	0.01524

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)	0.00345	0.00327	0.00320
	(B_N * !X)	0.00121	0.00103	0.00096
	(!B_N * C * !D * !X)	0.00361	0.00343	0.00336
	(!B_N * C * !D * !X)	0.00136	0.00118	0.00112
	(!B_N * !C * !X)	0.00361	0.00343	0.00336
	(!B_N * !C * !X)	0.00137	0.00118	0.00112
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00352	0.00334	0.00327
	(B_N * !X)	0.00126	0.00107	0.00101
	(!B_N * C * !D * !X)	0.00367	0.00349	0.00342
	(!B_N * C * !D * !X)	0.00140	0.00121	0.00115
	(!B_N * !C * !X)	0.00367	0.00349	0.00342
	(!B_N * !C * !X)	0.00141	0.00121	0.00115
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00487	0.00469	0.00462
	(B_N * !X)	0.00251	0.00233	0.00226
	(!B_N * C * !D * !X)	0.00517	0.00499	0.00492
	(!B_N * C * !D * !X)	0.00280	0.00261	0.00255
	(!B_N * !C * !X)	0.00516	0.00499	0.00491
	(!B_N * !C * !X)	0.00280	0.00261	0.00255

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)	0.00040	0.00026	0.00023
	(B_N * !X)	0.00263	0.00249	0.00247
	(!B_N * C * !D * !X)	0.00027	0.00012	0.00008
	(!B_N * C * !D * !X)	0.00256	0.00242	0.00237
	(!B_N * !C * !X)	0.00025	0.00011	0.00008
	(!B_N * !C * !X)	0.00250	0.00236	0.00233
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00032	0.00017	0.00015
	(B_N * !X)	0.00260	0.00244	0.00242
	(!B_N * C * !D * !X)	0.00020	0.00005	0.00001
	(!B_N * C * !D * !X)	0.00255	0.00239	0.00233
	(!B_N * !C * !X)	0.00019	0.00004	0.00001
	(!B_N * !C * !X)	0.00248	0.00233	0.00229
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00100	0.00087	0.00083
	(B_N * !X)	0.00335	0.00323	0.00318
	(!B_N * C * !D * !X)	0.00075	0.00061	0.00054
	(!B_N * C * !D * !X)	0.00323	0.00310	0.00298
	(!B_N * !C * !X)	0.00072	0.00058	0.00053
	(!B_N * !C * !X)	0.00310	0.00297	0.00291

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)	0.00343	0.00326	0.00318
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00092	0.00074	0.00067
	(!C * !X)	0.00348	0.00329	0.00323
	(!C * !X)	0.00092	0.00074	0.00067
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00346	0.00329	0.00322
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00112	0.00094	0.00088
	(!C * !X)	0.00352	0.00335	0.00328
	(!C * !X)	0.00112	0.00094	0.00087
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00473	0.00454	0.00444
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00205	0.00184	0.00176
	(!C * !X)	0.00485	0.00465	0.00456
	(!C * !X)	0.00206	0.00185	0.00177

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)	0.00075	0.00060	0.00059
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00325	0.00312	0.00310
	(!C * !X)	0.00045	0.00030	0.00029
	(!C * !X)	0.00299	0.00285	0.00283
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00106	0.00092	0.00091
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00341	0.00326	0.00325
	(!C * !X)	0.00071	0.00056	0.00054
	(!C * !X)	0.00308	0.00295	0.00293
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00208	0.00191	0.00188
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00478	0.00460	0.00457
	(!C * !X)	0.00144	0.00127	0.00124
	(!C * !X)	0.00422	0.00404	0.00402

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)**	0.00100	0.00101	0.00100
	(A_N * B_N * D * !X)	-0.00097	-0.00097	-0.00097
	(A_N * B_N * !D * !X)	0.00074	0.00074	0.00073
	(A_N * B_N * !D * !X)	-0.00097	-0.00097	-0.00097
	(A_N * !B_N * D * !X)	0.00076	0.00076	0.00076
	(A_N * !B_N * D * !X)	-0.00122	-0.00123	-0.00121
	(A_N * !B_N * !D * !X)	0.00047	0.00047	0.00047
	(A_N * !B_N * !D * !X)	-0.00127	-0.00128	-0.00127
	(!A_N * B_N * D * !X)	0.00100	0.00101	0.00100
	(!A_N * B_N * D * !X)	-0.00096	-0.00097	-0.00097
	(!A_N * B_N * !D * !X)	0.00071	0.00072	0.00071
	(!A_N * B_N * !D * !X)	-0.00097	-0.00097	-0.00097
	(!A_N * !B_N * !D * !X)	0.00042	0.00042	0.00042
	(!A_N * !B_N * !D * !X)	-0.00121	-0.00122	-0.00122
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00106	0.00107	0.00107
	(A_N * B_N * D * !X)	-0.00115	-0.00116	-0.00115
	(A_N * B_N * !D * !X)	0.00075	0.00075	0.00075
	(A_N * B_N * !D * !X)	-0.00115	-0.00116	-0.00115
	(A_N * !B_N * D * !X)	0.00087	0.00088	0.00087
	(A_N * !B_N * D * !X)	-0.00136	-0.00137	-0.00135
	(A_N * !B_N * !D * !X)	0.00053	0.00053	0.00053
	(A_N * !B_N * !D * !X)	-0.00143	-0.00143	-0.00143
	(!A_N * B_N * D * !X)	0.00106	0.00107	0.00107
	(!A_N * B_N * D * !X)	-0.00115	-0.00116	-0.00115
	(!A_N * B_N * !D * !X)	0.00072	0.00073	0.00072
	(!A_N * B_N * !D * !X)	-0.00115	-0.00115	-0.00115
	(!A_N * !B_N * !D * !X)	0.00046	0.00047	0.00046
	(!A_N * !B_N * !D * !X)	-0.00135	-0.00136	-0.00136

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00178	0.00179	0.00177
	(A_N * B_N * D * !X)	-0.00240	-0.00240	-0.00239
	(A_N * B_N * !D * !X)	0.00118	0.00119	0.00119
	(A_N * B_N * !D * !X)	-0.00239	-0.00240	-0.00240
	(A_N * !B_N * D * !X)	0.00165	0.00166	0.00165
	(A_N * !B_N * D * !X)	-0.00253	-0.00254	-0.00251
	(A_N * !B_N * !D * !X)	0.00103	0.00104	0.00104
	(A_N * !B_N * !D * !X)	-0.00265	-0.00266	-0.00266
	(!A_N * B_N * D * !X)	0.00178	0.00177	0.00177
	(!A_N * B_N * D * !X)	-0.00240	-0.00239	-0.00239
	(!A_N * B_N * !D * !X)	0.00114	0.00115	0.00115
	(!A_N * B_N * !D * !X)	-0.00240	-0.00241	-0.00240
	(!A_N * !B_N * !D * !X)	0.00091	0.00092	0.00092
	(!A_N * !B_N * !D * !X)	-0.00251	-0.00253	-0.00253

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)**	-0.00099	-0.00101	-0.00100
	(A_N * B_N * D * !X)	0.00098	0.00098	0.00097
	(A_N * B_N * !D * !X)	-0.00074	-0.00074	-0.00073
	(A_N * B_N * !D * !X)	0.00097	0.00097	0.00097
	(A_N * !B_N * D * !X)	-0.00073	-0.00076	-0.00076
	(A_N * !B_N * D * !X)	0.00125	0.00123	0.00121
	(A_N * !B_N * !D * !X)	-0.00047	-0.00047	-0.00047
	(A_N * !B_N * !D * !X)	0.00130	0.00132	0.00131
	(!A_N * B_N * D * !X)	-0.00099	-0.00101	-0.00100
	(!A_N * B_N * D * !X)	0.00098	0.00098	0.00097
	(!A_N * B_N * !D * !X)	-0.00071	-0.00072	-0.00071
	(!A_N * B_N * !D * !X)	0.00097	0.00097	0.00097
	(!A_N * !B_N * !D * !X)	-0.00041	-0.00041	-0.00041
	(!A_N * !B_N * !D * !X)	0.00124	0.00123	0.00122
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00105	-0.00107	-0.00107
	(A_N * B_N * D * !X)	0.00115	0.00116	0.00116
	(A_N * B_N * !D * !X)	-0.00075	-0.00075	-0.00075
	(A_N * B_N * !D * !X)	0.00115	0.00116	0.00116
	(A_N * !B_N * D * !X)	-0.00084	-0.00088	-0.00087
	(A_N * !B_N * D * !X)	0.00140	0.00137	0.00135
	(A_N * !B_N * !D * !X)	-0.00053	-0.00053	-0.00053
	(A_N * !B_N * !D * !X)	0.00145	0.00147	0.00147
	(!A_N * B_N * D * !X)	-0.00105	-0.00107	-0.00107
	(!A_N * B_N * D * !X)	0.00115	0.00116	0.00116
	(!A_N * B_N * !D * !X)	-0.00072	-0.00073	-0.00072
	(!A_N * B_N * !D * !X)	0.00115	0.00115	0.00116
	(!A_N * !B_N * !D * !X)	-0.00046	-0.00045	-0.00045
	(!A_N * !B_N * !D * !X)	0.00138	0.00137	0.00136

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00176	-0.00179	-0.00177
	(A_N * B_N * D * !X)	0.00241	0.00241	0.00240
	(A_N * B_N * !D * !X)	-0.00118	-0.00119	-0.00119
	(A_N * B_N * !D * !X)	0.00240	0.00241	0.00241
	(A_N * !B_N * D * !X)	-0.00159	-0.00166	-0.00165
	(A_N * !B_N * D * !X)	0.00262	0.00254	0.00251
	(A_N * !B_N * !D * !X)	-0.00103	-0.00104	-0.00104
	(A_N * !B_N * !D * !X)	0.00270	0.00274	0.00274
	(!A_N * B_N * D * !X)	-0.00176	-0.00177	-0.00177
	(!A_N * B_N * D * !X)	0.00241	0.00242	0.00240
	(!A_N * B_N * !D * !X)	-0.00114	-0.00115	-0.00115
	(!A_N * B_N * !D * !X)	0.00240	0.00241	0.00241
	(!A_N * !B_N * !D * !X)	-0.00089	-0.00089	-0.00089
	(!A_N * !B_N * !D * !X)	0.00255	0.00256	0.00255

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)	0.00089	0.00089	0.00089
	(A_N * B_N * C * !X)	-0.00094	-0.00095	-0.00094
	(A_N * !C * !X)	0.00090	0.00091	0.00090
	(A_N * !C * !X)	-0.00094	-0.00095	-0.00094
	(A_N * !B_N * C * !X)	0.00076	0.00077	0.00076
	(A_N * !B_N * C * !X)	-0.00109	-0.00109	-0.00108
	(!A_N * B_N * C * !X)	0.00089	0.00090	0.00089
	(!A_N * B_N * C * !X)	-0.00094	-0.00095	-0.00094
	(!A_N * B_N * !C * !X)	0.00090	0.00091	0.00090
	(!A_N * B_N * !C * !X)	-0.00094	-0.00095	-0.00094
	(!A_N * !B_N * !C * !X)	0.00079	0.00079	0.00078
	(!A_N * !B_N * !C * !X)	-0.00106	-0.00107	-0.00106

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00094	0.00095	0.00094
	(A_N * B_N * C * !X)	-0.00123	-0.00123	-0.00123
	(A_N * !C * !X)	0.00095	0.00096	0.00095
	(A_N * !C * !X)	-0.00123	-0.00123	-0.00123
	(A_N * !B_N * C * !X)	0.00089	0.00089	0.00089
	(A_N * !B_N * C * !X)	-0.00130	-0.00130	-0.00130
	(!A_N * B_N * C * !X)	0.00094	0.00095	0.00094
	(!A_N * B_N * C * !X)	-0.00123	-0.00123	-0.00123
	(!A_N * B_N * !C * !X)	0.00095	0.00096	0.00095
	(!A_N * B_N * !C * !X)	-0.00123	-0.00123	-0.00123
	(!A_N * !B_N * !C * !X)	0.00091	0.00091	0.00091
	(!A_N * !B_N * !C * !X)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00155	0.00157	0.00156
	(A_N * B_N * C * !X)	-0.00236	-0.00238	-0.00237
	(A_N * !C * !X)	0.00159	0.00159	0.00158
	(A_N * !C * !X)	-0.00237	-0.00238	-0.00237
	(A_N * !B_N * C * !X)	0.00153	0.00155	0.00153
	(A_N * !B_N * C * !X)	-0.00243	-0.00244	-0.00242
	(!A_N * B_N * C * !X)	0.00155	0.00156	0.00156
	(!A_N * B_N * C * !X)	-0.00236	-0.00237	-0.00237
	(!A_N * B_N * !C * !X)	0.00159	0.00159	0.00158
	(!A_N * B_N * !C * !X)	-0.00237	-0.00238	-0.00237
	(!A_N * !B_N * !C * !X)	0.00159	0.00159	0.00158
	(!A_N * !B_N * !C * !X)	-0.00237	-0.00238	-0.00237

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)**	-0.00087	-0.00089	-0.00089
	(A_N * B_N * C * !X)	0.00095	0.00095	0.00095
	(A_N * !C * !X)	-0.00089	-0.00091	-0.00090
	(A_N * !C * !X)	0.00094	0.00095	0.00095
	(A_N * !B_N * C * !X)	-0.00073	-0.00077	-0.00076
	(A_N * !B_N * C * !X)	0.00110	0.00109	0.00108
	(!A_N * B_N * C * !X)	-0.00087	-0.00090	-0.00089
	(!A_N * B_N * C * !X)	0.00095	0.00095	0.00095
	(!A_N * B_N * !C * !X)	-0.00089	-0.00091	-0.00090
	(!A_N * B_N * !C * !X)	0.00094	0.00095	0.00095
	(!A_N * !B_N * !C * !X)	-0.00077	-0.00079	-0.00078
	(!A_N * !B_N * !C * !X)	0.00106	0.00107	0.00106
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00091	-0.00095	-0.00094
	(A_N * B_N * C * !X)	0.00123	0.00123	0.00123
	(A_N * !C * !X)	-0.00093	-0.00096	-0.00095
	(A_N * !C * !X)	0.00123	0.00124	0.00123
	(A_N * !B_N * C * !X)	-0.00084	-0.00089	-0.00089
	(A_N * !B_N * C * !X)	0.00132	0.00130	0.00130
	(!A_N * B_N * C * !X)	-0.00091	-0.00095	-0.00094
	(!A_N * B_N * C * !X)	0.00123	0.00123	0.00123
	(!A_N * B_N * !C * !X)	-0.00093	-0.00096	-0.00095
	(!A_N * B_N * !C * !X)	0.00123	0.00124	0.00123
	(!A_N * !B_N * !C * !X)	-0.00089	-0.00091	-0.00091
	(!A_N * !B_N * !C * !X)	0.00127	0.00128	0.00127

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00151	-0.00157	-0.00156
	(A_N * B_N * C * !X)	0.00237	0.00238	0.00237
	(A_N * !C * !X)	-0.00155	-0.00159	-0.00158
	(A_N * !C * !X)	0.00237	0.00238	0.00237
	(A_N * !B_N * C * !X)	-0.00147	-0.00155	-0.00153
	(A_N * !B_N * C * !X)	0.00247	0.00244	0.00242
	(!A_N * B_N * C * !X)	-0.00151	-0.00156	-0.00156
	(!A_N * B_N * C * !X)	0.00237	0.00238	0.00237
	(!A_N * B_N * !C * !X)	-0.00155	-0.00159	-0.00158
	(!A_N * B_N * !C * !X)	0.00237	0.00238	0.00237
	(!A_N * !B_N * !C * !X)	-0.00154	-0.00159	-0.00158
	(!A_N * !B_N * !C * !X)	0.00237	0.00238	0.00238

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A_N	B	C	D	X
x	0	x	x	0
x	1	0	x	0
x	1	1	0	0
0	1	1	1	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4b_1	14.38560
sky130_fd_sc_hs__and4b_2	14.38560
sky130_fd_sc_hs__and4b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	X
sky130_fd_sc_hs__and4b_1	0.00229	0.00240	0.00230	0.00222	0.35419
sky130_fd_sc_hs__and4b_2	0.00212	0.00257	0.00256	0.00264	0.67155
sky130_fd_sc_hs__and4b_4	0.00233	0.00472	0.00509	0.00468	1.29022

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4b_1	0.00000	0.00021	0.00031
sky130_fd_sc_hs__and4b_2	0.00000	0.00032	0.00057
sky130_fd_sc_hs__and4b_4	0.00000	0.00062	0.00110

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)	0.38812	1.66848	11.29860
	B->X (RR)	0.24920	1.28761	8.93153
	C->X (RR)	0.25671	1.27627	8.95231
	D->X (RR)	0.26422	1.26500	8.95328
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.42525	1.57541	11.51010
	B->X (RR)	0.25453	1.16745	9.06390
	C->X (RR)	0.26465	1.15526	9.06630
	D->X (RR)	0.27089	1.13854	9.03651
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.52308	1.59383	12.12150
	B->X (RR)	0.28935	1.10831	9.25507
	C->X (RR)	0.31051	1.10279	9.26451
	D->X (RR)	0.31286	1.08396	9.22698

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)	0.27348	0.74398	3.05503
	B->X (FF)	0.26211	1.04745	6.11677
	C->X (FF)	0.28280	1.07123	6.20850
	D->X (FF)	0.30910	1.09918	6.30704
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.32639	0.79575	3.13822
	B->X (FF)	0.30408	1.08471	6.43297
	C->X (FF)	0.33082	1.11297	6.53087
	D->X (FF)	0.35224	1.13513	6.61028
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.34657	0.81189	3.24977
	B->X (FF)	0.29019	1.04724	6.38670
	C->X (FF)	0.32027	1.07537	6.49193
	D->X (FF)	0.36468	1.11892	6.60503

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	0.00547	0.00533	0.00519
	A_N	0.00731	0.00717	0.00704
	B	0.00623	0.00615	0.00608
	B	0.00343	0.00335	0.00330
	C	0.00674	0.00664	0.00661
	C	0.00356	0.00345	0.00344
	D	0.00711	0.00700	0.00693
	D	0.00355	0.00344	0.00338
sky130_fd_sc_hs__and4b_2	A_N	0.00759	0.00761	0.00750
	A_N	0.00931	0.00933	0.00926
	B	0.00815	0.00825	0.00824
	B	0.00517	0.00527	0.00530
	C	0.00868	0.00876	0.00878
	C	0.00529	0.00536	0.00542
	D	0.00933	0.00943	0.00940
	D	0.00528	0.00537	0.00539
sky130_fd_sc_hs__and4b_4	A_N	0.01519	0.01552	0.01563
	A_N	0.01715	0.01748	0.01776
	B	0.01618	0.01648	0.01666
	B	0.01072	0.01102	0.01131
	C	0.01768	0.01800	0.01819
	C	0.01105	0.01137	0.01166
	D	0.01826	0.01856	0.01879
	D	0.01105	0.01135	0.01170

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00675	0.00655	0.00632
	A_N	0.00490	0.00467	0.00447
	B	0.00250	0.00237	0.00233
	B	0.00528	0.00515	0.00510
	C	0.00260	0.00255	0.00271
	C	0.00573	0.00566	0.00561
	D	0.00307	0.00291	0.00309
	D	0.00652	0.00643	0.00635
sky130_fd_sc_hs__and4b_2	A_N	0.00896	0.00888	0.00865
	A_N	0.00722	0.00716	0.00692
	B	0.00411	0.00419	0.00441
	B	0.00707	0.00715	0.00714
	C	0.00445	0.00446	0.00482
	C	0.00777	0.00789	0.00786
	D	0.00465	0.00462	0.00469
	D	0.00855	0.00861	0.00854
sky130_fd_sc_hs__and4b_4	A_N	0.01539	0.01568	0.01532
	A_N	0.01344	0.01371	0.01337
	B	0.00766	0.00793	0.00858
	B	0.01308	0.01335	0.01340
	C	0.00823	0.00820	0.00960
	C	0.01470	0.01487	0.01489
	D	0.00913	0.00931	0.00968
	D	0.01605	0.01638	0.01638

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)	0.00355	0.00336	0.00328
	(B * C * !D * !X)	0.00102	0.00081	0.00074
	(B * !C * !X)	0.00355	0.00336	0.00328
	(B * !C * !X)	0.00102	0.00081	0.00074
	(!B * !X)	0.00354	0.00335	0.00327
	(!B * !X)	0.00102	0.00081	0.00074
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00394	0.00376	0.00369
	(B * C * !D * !X)	0.00153	0.00135	0.00128
	(B * !C * !X)	0.00394	0.00376	0.00369
	(B * !C * !X)	0.00153	0.00135	0.00128
	(!B * !X)	0.00392	0.00375	0.00368
	(!B * !X)	0.00153	0.00135	0.00128
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00609	0.00591	0.00582
	(B * C * !D * !X)	0.00316	0.00297	0.00289
	(B * !C * !X)	0.00608	0.00590	0.00582
	(B * !C * !X)	0.00316	0.00297	0.00290
	(!B * !X)	0.00604	0.00586	0.00578
	(!B * !X)	0.00316	0.00297	0.00289

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)	0.00022	0.00006	0.00002
	(B * C * !D * !X)	0.00283	0.00267	0.00260
	(B * !C * !X)	0.00020	0.00004	0.00001
	(B * !C * !X)	0.00279	0.00263	0.00258
	(!B * !X)	0.00020	0.00005	0.00002
	(!B * !X)	0.00274	0.00259	0.00255
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00029	0.00014	0.00010
	(B * C * !D * !X)	0.00278	0.00264	0.00256
	(B * !C * !X)	0.00028	0.00014	0.00010
	(B * !C * !X)	0.00274	0.00260	0.00255
	(!B * !X)	0.00028	0.00014	0.00011
	(!B * !X)	0.00268	0.00254	0.00251
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00056	0.00041	0.00033
	(B * C * !D * !X)	0.00365	0.00349	0.00334
	(B * !C * !X)	0.00054	0.00040	0.00033
	(B * !C * !X)	0.00358	0.00342	0.00331
	(!B * !X)	0.00054	0.00040	0.00036
	(!B * !X)	0.00345	0.00330	0.00325

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)**	0.00092	0.00093	0.00092
	(A_N * C * D * !X)	-0.00111	-0.00111	-0.00111
	(A_N * C * !D * !X)	0.00063	0.00064	0.00063
	(A_N * C * !D * !X)	-0.00111	-0.00111	-0.00111
	(A_N * !C * !X)	0.00060	0.00060	0.00060
	(A_N * !C * !X)	-0.00111	-0.00111	-0.00111
	(!A_N * C * !D * !X)	0.00042	0.00042	0.00042
	(!A_N * C * !D * !X)	-0.00124	-0.00125	-0.00126
	(!A_N * !C * !X)	0.00042	0.00042	0.00042
	(!A_N * !C * !X)	-0.00126	-0.00126	-0.00126
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00106	0.00106	0.00106
	(A_N * C * D * !X)	-0.00116	-0.00117	-0.00116
	(A_N * C * !D * !X)	0.00070	0.00071	0.00070
	(A_N * C * !D * !X)	-0.00116	-0.00117	-0.00117
	(A_N * !C * !X)	0.00070	0.00070	0.00070
	(A_N * !C * !X)	-0.00117	-0.00117	-0.00117
	(!A_N * C * !D * !X)	0.00044	0.00045	0.00046
	(!A_N * C * !D * !X)	-0.00132	-0.00133	-0.00134
	(!A_N * !C * !X)	0.00048	0.00048	0.00048
	(!A_N * !C * !X)	-0.00135	-0.00135	-0.00135
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00216	0.00217	0.00217
	(A_N * C * D * !X)	-0.00219	-0.00220	-0.00220
	(A_N * C * !D * !X)	0.00155	0.00157	0.00156
	(A_N * C * !D * !X)	-0.00219	-0.00222	-0.00220
	(A_N * !C * !X)	0.00158	0.00159	0.00157
	(A_N * !C * !X)	-0.00221	-0.00222	-0.00221
	(!A_N * C * !D * !X)	0.00100	0.00100	0.00101
	(!A_N * C * !D * !X)	-0.00259	-0.00260	-0.00263
	(!A_N * !C * !X)	0.00104	0.00105	0.00104
	(!A_N * !C * !X)	-0.00263	-0.00263	-0.00264

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)	-0.00091	-0.00093	-0.00092
	(A_N * C * D * !X)	0.00111	0.00112	0.00111
	(A_N * C * !D * !X)	-0.00063	-0.00064	-0.00063
	(A_N * C * !D * !X)	0.00111	0.00111	0.00111
	(A_N * !C * !X)	-0.00060	-0.00060	-0.00060
	(A_N * !C * !X)	0.00111	0.00111	0.00111
	(!A_N * C * !D * !X)	-0.00040	-0.00040	-0.00040
	(!A_N * C * !D * !X)	0.00129	0.00128	0.00127
	(!A_N * !C * !X)	-0.00041	-0.00040	-0.00041
	(!A_N * !C * !X)	0.00129	0.00128	0.00127
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00104	-0.00106	-0.00106
	(A_N * C * D * !X)	0.00116	0.00117	0.00116
	(A_N * C * !D * !X)	-0.00070	-0.00071	-0.00070
	(A_N * C * !D * !X)	0.00117	0.00117	0.00117
	(A_N * !C * !X)	-0.00070	-0.00070	-0.00070
	(A_N * !C * !X)	0.00117	0.00117	0.00117
	(!A_N * C * !D * !X)	-0.00044	-0.00044	-0.00045
	(!A_N * C * !D * !X)	0.00138	0.00137	0.00136
	(!A_N * !C * !X)	-0.00044	-0.00045	-0.00046
	(!A_N * !C * !X)	0.00136	0.00137	0.00136

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00214	-0.00217	-0.00217
	(A_N * C * D * !X)	0.00219	0.00221	0.00220
	(A_N * C * !D * !X)	-0.00155	-0.00157	-0.00156
	(A_N * C * !D * !X)	0.00222	0.00224	0.00221
	(A_N * !C * !X)	-0.00158	-0.00159	-0.00157
	(A_N * !C * !X)	0.00222	0.00225	0.00221
	(!A_N * C * !D * !X)	-0.00098	-0.00099	-0.00099
	(!A_N * C * !D * !X)	0.00269	0.00272	0.00266
	(!A_N * !C * !X)	-0.00100	-0.00101	-0.00101
	(!A_N * !C * !X)	0.00269	0.00272	0.00266

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)**	0.00093	0.00093	0.00092
	(A_N * B * D * !X)	-0.00099	-0.00099	-0.00099
	(A_N * B * !D * !X)	0.00065	0.00065	0.00065
	(A_N * B * !D * !X)	-0.00099	-0.00100	-0.00099
	(A_N * !B * D * !X)	0.00093	0.00093	0.00093
	(A_N * !B * D * !X)	-0.00099	-0.00099	-0.00099
	(A_N * !B * !D * !X)	0.00065	0.00065	0.00065
	(A_N * !B * !D * !X)	-0.00099	-0.00100	-0.00099
	(!A_N * B * !D * !X)	0.00058	0.00058	0.00058
	(!A_N * B * !D * !X)	-0.00100	-0.00100	-0.00100
	(!A_N * !B * D * !X)	0.00092	0.00093	0.00092
	(!A_N * !B * D * !X)	-0.00099	-0.00100	-0.00100
	(!A_N * !B * !D * !X)	0.00062	0.00063	0.00063
	(!A_N * !B * !D * !X)	-0.00100	-0.00101	-0.00100

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00089	0.00090	0.00089
	(A_N * B * D * !X)	-0.00115	-0.00115	-0.00115
	(A_N * B * !D * !X)	0.00055	0.00054	0.00054
	(A_N * B * !D * !X)	-0.00116	-0.00115	-0.00115
	(A_N * !B * D * !X)	0.00090	0.00091	0.00091
	(A_N * !B * D * !X)	-0.00114	-0.00115	-0.00115
	(A_N * !B * !D * !X)	0.00055	0.00055	0.00054
	(A_N * !B * !D * !X)	-0.00115	-0.00115	-0.00115
	(!A_N * B * !D * !X)	0.00046	0.00046	0.00046
	(!A_N * B * !D * !X)	-0.00117	-0.00117	-0.00116
	(!A_N * !B * D * !X)	0.00090	0.00091	0.00090
	(!A_N * !B * D * !X)	-0.00116	-0.00117	-0.00116
	(!A_N * !B * !D * !X)	0.00051	0.00051	0.00051
	(!A_N * !B * !D * !X)	-0.00117	-0.00117	-0.00116
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00199	0.00200	0.00200
	(A_N * B * D * !X)	-0.00234	-0.00235	-0.00234
	(A_N * B * !D * !X)	0.00142	0.00143	0.00142
	(A_N * B * !D * !X)	-0.00235	-0.00236	-0.00235
	(A_N * !B * D * !X)	0.00202	0.00203	0.00202
	(A_N * !B * D * !X)	-0.00234	-0.00234	-0.00235
	(A_N * !B * !D * !X)	0.00144	0.00145	0.00145
	(A_N * !B * !D * !X)	-0.00234	-0.00235	-0.00235
	(!A_N * B * !D * !X)	0.00126	0.00127	0.00127
	(!A_N * B * !D * !X)	-0.00238	-0.00239	-0.00238
	(!A_N * !B * D * !X)	0.00199	0.00200	0.00199
	(!A_N * !B * D * !X)	-0.00238	-0.00238	-0.00238
	(!A_N * !B * !D * !X)	0.00136	0.00137	0.00137
	(!A_N * !B * !D * !X)	-0.00238	-0.00239	-0.00239

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)	-0.00089	-0.00093	-0.00092
	(A_N * B * D * !X)	0.00100	0.00100	0.00099
	(A_N * B * !D * !X)	-0.00065	-0.00065	-0.00065
	(A_N * B * !D * !X)	0.00099	0.00100	0.00100
	(A_N * !B * D * !X)	-0.00091	-0.00093	-0.00093
	(A_N * !B * D * !X)	0.00099	0.00100	0.00099
	(A_N * !B * !D * !X)	-0.00065	-0.00065	-0.00065
	(A_N * !B * !D * !X)	0.00099	0.00100	0.00100
	(!A_N * B * !D * !X)	-0.00056	-0.00057	-0.00056
	(!A_N * B * !D * !X)	0.00101	0.00102	0.00101
	(!A_N * !B * D * !X)	-0.00090	-0.00093	-0.00092
	(!A_N * !B * D * !X)	0.00100	0.00101	0.00100
	(!A_N * !B * !D * !X)	-0.00062	-0.00063	-0.00063
	(!A_N * !B * !D * !X)	0.00100	0.00101	0.00100
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00085	-0.00090	-0.00089
	(A_N * B * D * !X)	0.00115	0.00116	0.00115
	(A_N * B * !D * !X)	-0.00055	-0.00054	-0.00054
	(A_N * B * !D * !X)	0.00116	0.00115	0.00115
	(A_N * !B * D * !X)	-0.00088	-0.00091	-0.00091
	(A_N * !B * D * !X)	0.00114	0.00116	0.00115
	(A_N * !B * !D * !X)	-0.00055	-0.00055	-0.00054
	(A_N * !B * !D * !X)	0.00117	0.00115	0.00116
	(!A_N * B * !D * !X)	-0.00046	-0.00045	-0.00045
	(!A_N * B * !D * !X)	0.00119	0.00118	0.00117
	(!A_N * !B * D * !X)	-0.00087	-0.00090	-0.00090
	(!A_N * !B * D * !X)	0.00116	0.00117	0.00116
	(!A_N * !B * !D * !X)	-0.00051	-0.00051	-0.00051
	(!A_N * !B * !D * !X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00192	-0.00200	-0.00200
	(A_N * B * D * !X)	0.00234	0.00237	0.00235
	(A_N * B * !D * !X)	-0.00142	-0.00143	-0.00142
	(A_N * B * !D * !X)	0.00235	0.00239	0.00236
	(A_N * !B * D * !X)	-0.00197	-0.00203	-0.00202
	(A_N * !B * D * !X)	0.00234	0.00234	0.00235
	(A_N * !B * !D * !X)	-0.00144	-0.00145	-0.00145
	(A_N * !B * !D * !X)	0.00236	0.00239	0.00236
	(!A_N * B * !D * !X)	-0.00125	-0.00126	-0.00125
	(!A_N * B * !D * !X)	0.00241	0.00244	0.00239
	(!A_N * !B * D * !X)	-0.00194	-0.00200	-0.00199
	(!A_N * !B * D * !X)	0.00238	0.00238	0.00238
	(!A_N * !B * !D * !X)	-0.00136	-0.00137	-0.00137
	(!A_N * !B * !D * !X)	0.00240	0.00243	0.00240

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)	0.00075	0.00076	0.00075
	(A_N * B * C * !X)	-0.00108	-0.00109	-0.00108
	(A_N * !C * !X)	0.00078	0.00078	0.00078
	(A_N * !C * !X)	-0.00108	-0.00109	-0.00108
	(A_N * !B * C * !X)	0.00075	0.00076	0.00075
	(A_N * !B * C * !X)	-0.00108	-0.00109	-0.00108
	(!A_N * B * !C * !X)	0.00077	0.00079	0.00078
	(!A_N * B * !C * !X)	-0.00107	-0.00109	-0.00108
	(!A_N * !B * C * !X)	0.00076	0.00076	0.00076
	(!A_N * !B * C * !X)	-0.00108	-0.00109	-0.00108
	(!A_N * !B * !C * !X)	0.00078	0.00078	0.00078
	(!A_N * !B * !C * !X)	-0.00108	-0.00109	-0.00108

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00090	0.00090	0.00090
	(A_N * B * C * !X)	-0.00125	-0.00125	-0.00125
	(A_N * !C * !X)	0.00091	0.00092	0.00091
	(A_N * !C * !X)	-0.00124	-0.00125	-0.00125
	(A_N * !B * C * !X)	0.00090	0.00091	0.00090
	(A_N * !B * C * !X)	-0.00124	-0.00125	-0.00125
	(!A_N * B * !C * !X)	0.00090	0.00091	0.00090
	(!A_N * B * !C * !X)	-0.00126	-0.00127	-0.00126
	(!A_N * !B * C * !X)	0.00088	0.00089	0.00088
	(!A_N * !B * C * !X)	-0.00126	-0.00126	-0.00126
	(!A_N * !B * !C * !X)	0.00089	0.00091	0.00090
	(!A_N * !B * !C * !X)	-0.00125	-0.00127	-0.00126
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00161	0.00163	0.00161
	(A_N * B * C * !X)	-0.00233	-0.00234	-0.00233
	(A_N * !C * !X)	0.00162	0.00164	0.00163
	(A_N * !C * !X)	-0.00233	-0.00234	-0.00233
	(A_N * !B * C * !X)	0.00161	0.00162	0.00162
	(A_N * !B * C * !X)	-0.00233	-0.00233	-0.00233
	(!A_N * B * !C * !X)	0.00159	0.00160	0.00160
	(!A_N * B * !C * !X)	-0.00236	-0.00237	-0.00236
	(!A_N * !B * C * !X)	0.00158	0.00159	0.00158
	(!A_N * !B * C * !X)	-0.00236	-0.00237	-0.00236
	(!A_N * !B * !C * !X)	0.00160	0.00162	0.00160
	(!A_N * !B * !C * !X)	-0.00236	-0.00237	-0.00236

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)**	-0.00071	-0.00076	-0.00075
	(A_N * B * C * !X)	0.00108	0.00109	0.00108
	(A_N * !C * !X)	-0.00076	-0.00078	-0.00078
	(A_N * !C * !X)	0.00108	0.00109	0.00108
	(A_N * !B * C * !X)	-0.00072	-0.00076	-0.00075
	(A_N * !B * C * !X)	0.00108	0.00109	0.00108
	(!A_N * B * !C * !X)	-0.00076	-0.00078	-0.00078
	(!A_N * B * !C * !X)	0.00108	0.00109	0.00108
	(!A_N * !B * C * !X)	-0.00072	-0.00076	-0.00076
	(!A_N * !B * C * !X)	0.00108	0.00109	0.00108
	(!A_N * !B * !C * !X)	-0.00076	-0.00078	-0.00078
	(!A_N * !B * !C * !X)	0.00108	0.00109	0.00108
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00085	-0.00090	-0.00090
	(A_N * B * C * !X)	0.00125	0.00125	0.00125
	(A_N * !C * !X)	-0.00089	-0.00092	-0.00091
	(A_N * !C * !X)	0.00124	0.00126	0.00125
	(A_N * !B * C * !X)	-0.00086	-0.00090	-0.00090
	(A_N * !B * C * !X)	0.00125	0.00125	0.00125
	(!A_N * B * !C * !X)	-0.00088	-0.00091	-0.00090
	(!A_N * B * !C * !X)	0.00126	0.00127	0.00126
	(!A_N * !B * C * !X)	-0.00085	-0.00089	-0.00088
	(!A_N * !B * C * !X)	0.00126	0.00126	0.00126
	(!A_N * !B * !C * !X)	-0.00088	-0.00091	-0.00090
	(!A_N * !B * !C * !X)	0.00126	0.00127	0.00126

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00152	-0.00163	-0.00161
	(A_N * B * C * !X)	0.00233	0.00234	0.00234
	(A_N * !C * !X)	-0.00160	-0.00164	-0.00163
	(A_N * !C * !X)	0.00234	0.00235	0.00234
	(A_N * !B * C * !X)	-0.00154	-0.00162	-0.00162
	(A_N * !B * C * !X)	0.00233	0.00235	0.00234
	(!A_N * B * !C * !X)	-0.00156	-0.00160	-0.00160
	(!A_N * B * !C * !X)	0.00237	0.00238	0.00237
	(!A_N * !B * C * !X)	-0.00151	-0.00159	-0.00158
	(!A_N * !B * C * !X)	0.00237	0.00238	0.00237
	(!A_N * !B * !C * !X)	-0.00157	-0.00162	-0.00160
	(!A_N * !B * !C * !X)	0.00237	0.00238	0.00237

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D	X
0	x	x	x	0
1	0	x	x	0
1	1	0	x	0
1	1	1	0	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4_1	11.18880
sky130_fd_sc_hs__and4_2	12.78720
sky130_fd_sc_hs__and4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__and4_1	0.00244	0.00239	0.00229	0.00231	0.35565
sky130_fd_sc_hs__and4_2	0.00264	0.00269	0.00254	0.00250	0.67053
sky130_fd_sc_hs__and4_4	0.00453	0.00464	0.00510	0.00451	1.38060

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.00016	0.00026
sky130_fd_sc_hs__and4_2	0.00000	0.00027	0.00053
sky130_fd_sc_hs__and4_4	0.00000	0.00054	0.00106

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)	0.23096	1.26092	8.69499
	B->X (RR)	0.24253	1.28302	8.92007
	C->X (RR)	0.24961	1.27297	8.93965
	D->X (RR)	0.25783	1.26063	8.94039
sky130_fd_sc_hs__and4_2	A->X (RR)	0.24006	1.16093	8.93430
	B->X (RR)	0.25373	1.17756	9.10023
	C->X (RR)	0.26190	1.16358	9.09870
	D->X (RR)	0.26794	1.14452	9.06908
sky130_fd_sc_hs__and4_4	A->X (RR)	0.25505	1.05753	8.95847
	B->X (RR)	0.27138	1.08276	9.19101
	C->X (RR)	0.28799	1.07494	9.20093
	D->X (RR)	0.28942	1.05355	9.16362

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.23711	1.01534	5.96653
	B->X (FF)	0.26178	1.04343	6.07922
	C->X (FF)	0.28295	1.06777	6.17031
	D->X (FF)	0.30833	1.09513	6.26722
sky130_fd_sc_hs__and4_2	A->X (FF)	0.26735	1.04784	6.31918
	B->X (FF)	0.29917	1.08137	6.42977
	C->X (FF)	0.32220	1.10670	6.52419
	D->X (FF)	0.35684	1.14222	6.62918
sky130_fd_sc_hs__and4_4	A->X (FF)	0.25954	1.01783	6.36605
	B->X (FF)	0.27112	1.03304	6.44205
	C->X (FF)	0.29846	1.05773	6.54529
	D->X (FF)	0.31550	1.07959	6.61648

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00593	0.00581	0.00577
	A	0.00307	0.00296	0.00292
	B	0.00630	0.00626	0.00623
	B	0.00308	0.00304	0.00302
	C	0.00677	0.00674	0.00670
	C	0.00308	0.00306	0.00303
	D	0.00732	0.00727	0.00722
	D	0.00309	0.00304	0.00300
sky130_fd_sc_hs__and4_2	A	0.00799	0.00799	0.00800
	A	0.00482	0.00485	0.00486
	B	0.00855	0.00864	0.00862
	B	0.00488	0.00497	0.00499
	C	0.00903	0.00912	0.00912
	C	0.00489	0.00502	0.00502
	D	0.00965	0.00972	0.00973
	D	0.00490	0.00497	0.00502
sky130_fd_sc_hs__and4_4	A	0.01474	0.01475	0.01499
	A	0.00933	0.00935	0.00965
	B	0.01590	0.01613	0.01635
	B	0.00929	0.00952	0.00985
	C	0.01733	0.01760	0.01779
	C	0.00933	0.00960	0.00991
	D	0.01776	0.01806	0.01830
	D	0.00931	0.00960	0.00997

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00221	0.00207	0.00204
	A	0.00506	0.00491	0.00488
	B	0.00251	0.00234	0.00248
	B	0.00570	0.00561	0.00556
	C	0.00272	0.00264	0.00268
	C	0.00631	0.00626	0.00620
	D	0.00300	0.00289	0.00288
	D	0.00708	0.00700	0.00691
sky130_fd_sc_hs__and4_2	A	0.00365	0.00369	0.00433
	A	0.00684	0.00686	0.00686
	B	0.00398	0.00405	0.00445
	B	0.00760	0.00767	0.00764
	C	0.00436	0.00438	0.00452
	C	0.00839	0.00852	0.00847
	D	0.00466	0.00466	0.00469
	D	0.00922	0.00930	0.00921
sky130_fd_sc_hs__and4_4	A	0.00730	0.00744	0.00765
	A	0.01273	0.01287	0.01292
	B	0.00762	0.00781	0.00810
	B	0.01414	0.01437	0.01440
	C	0.00810	0.00802	0.00957
	C	0.01590	0.01606	0.01608
	D	0.00906	0.00923	0.01211
	D	0.01717	0.01751	0.01749

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)	0.00037	0.00037	0.00034
	(B * C * !D * !X)	-0.00118	-0.00119	-0.00125
	(B * !C * !X)	0.00035	0.00035	0.00033
	(B * !C * !X)	-0.00122	-0.00122	-0.00126
	(!B * !X)	0.00035	0.00035	0.00034
	(!B * !X)	-0.00125	-0.00125	-0.00126
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00046	0.00046	0.00041
	(B * C * !D * !X)	-0.00135	-0.00135	-0.00144
	(B * !C * !X)	0.00044	0.00044	0.00041
	(B * !C * !X)	-0.00139	-0.00140	-0.00144
	(!B * !X)	0.00043	0.00043	0.00041
	(!B * !X)	-0.00143	-0.00143	-0.00145
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00065	0.00065	0.00057
	(B * C * !D * !X)	-0.00245	-0.00248	-0.00263
	(B * !C * !X)	0.00063	0.00063	0.00057
	(B * !C * !X)	-0.00252	-0.00255	-0.00264
	(!B * !X)	0.00060	0.00061	0.00058
	(!B * !X)	-0.00260	-0.00263	-0.00265

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)	-0.00034	-0.00033	-0.00033
	(B * C * !D * !X)	0.00127	0.00127	0.00126
	(B * !C * !X)	-0.00034	-0.00033	-0.00033
	(B * !C * !X)	0.00127	0.00127	0.00126
	(!B * !X)	-0.00034	-0.00034	-0.00034
	(!B * !X)	0.00127	0.00127	0.00126
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00041	-0.00040	-0.00040
	(B * C * !D * !X)	0.00146	0.00145	0.00145
	(B * !C * !X)	-0.00041	-0.00040	-0.00040
	(B * !C * !X)	0.00146	0.00145	0.00145
	(!B * !X)	-0.00041	-0.00041	-0.00041
	(!B * !X)	0.00146	0.00145	0.00145
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00055	-0.00055	-0.00055
	(B * C * !D * !X)	0.00265	0.00266	0.00266
	(B * !C * !X)	-0.00055	-0.00056	-0.00055
	(B * !C * !X)	0.00265	0.00266	0.00266
	(!B * !X)	-0.00057	-0.00057	-0.00057
	(!B * !X)	0.00265	0.00266	0.00266

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__and4_1	**(A * C * !D * !X)**	0.00040	0.00041	0.00040
	(A * C * !D * !X)	-0.00101	-0.00101	-0.00101
	(A * !C * !X)	0.00041	0.00041	0.00041
	(A * !C * !X)	-0.00101	-0.00101	-0.00101
	(!A * C * D * !X)	0.00078	0.00079	0.00078
	(!A * C * D * !X)	-0.00101	-0.00102	-0.00101
	(!A * C * !D * !X)	0.00046	0.00047	0.00046
	(!A * C * !D * !X)	-0.00101	-0.00102	-0.00101
	(!A * !C * !X)	0.00044	0.00044	0.00044
	(!A * !C * !X)	-0.00101	-0.00101	-0.00101
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00048	0.00048	0.00048
	(A * C * !D * !X)	-0.00122	-0.00122	-0.00121
	(A * !C * !X)	0.00049	0.00049	0.00049
	(A * !C * !X)	-0.00122	-0.00122	-0.00121
	(!A * C * D * !X)	0.00092	0.00093	0.00092
	(!A * C * D * !X)	-0.00122	-0.00123	-0.00122
	(!A * C * !D * !X)	0.00055	0.00055	0.00055
	(!A * C * !D * !X)	-0.00122	-0.00122	-0.00122
	(!A * !C * !X)	0.00053	0.00053	0.00053
	(!A * !C * !X)	-0.00122	-0.00122	-0.00122
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00099	0.00098	0.00099
	(A * C * !D * !X)	-0.00228	-0.00228	-0.00228
	(A * !C * !X)	0.00103	0.00103	0.00103
	(A * !C * !X)	-0.00229	-0.00229	-0.00229
	(!A * C * D * !X)	0.00177	0.00177	0.00177
	(!A * C * D * !X)	-0.00228	-0.00228	-0.00228
	(!A * C * !D * !X)	0.00110	0.00110	0.00110
	(!A * C * !D * !X)	-0.00229	-0.00230	-0.00230
	(!A * !C * !X)	0.00111	0.00112	0.00111
	(!A * !C * !X)	-0.00231	-0.00232	-0.00231

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)	-0.00039	-0.00039	-0.00039
	(A * C * !D * !X)	0.00104	0.00103	0.00102
	(A * !C * !X)	-0.00040	-0.00039	-0.00040
	(A * !C * !X)	0.00105	0.00103	0.00102
	(!A * C * D * !X)	-0.00076	-0.00079	-0.00078
	(!A * C * D * !X)	0.00102	0.00102	0.00102
	(!A * C * !D * !X)	-0.00046	-0.00047	-0.00046
	(!A * C * !D * !X)	0.00102	0.00102	0.00102
	(!A * !C * !X)	-0.00044	-0.00044	-0.00044
	(!A * !C * !X)	0.00101	0.00101	0.00101
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00047	-0.00046	-0.00047
	(A * C * !D * !X)	0.00126	0.00124	0.00122
	(A * !C * !X)	-0.00048	-0.00047	-0.00048
	(A * !C * !X)	0.00126	0.00124	0.00122
	(!A * C * D * !X)	-0.00089	-0.00093	-0.00092
	(!A * C * D * !X)	0.00122	0.00123	0.00122
	(!A * C * !D * !X)	-0.00055	-0.00055	-0.00055
	(!A * C * !D * !X)	0.00122	0.00122	0.00122
	(!A * !C * !X)	-0.00053	-0.00053	-0.00053
	(!A * !C * !X)	0.00122	0.00122	0.00122

sky130_fd_sc_hs__and4_4	(A * C * !D * !X)	-0.00096	-0.00098	-0.00098
	(A * C * !D * !X)	0.00234	0.00237	0.00231
	(A * !C * !X)	-0.00098	-0.00100	-0.00100
	(A * !C * !X)	0.00234	0.00237	0.00231
	(!A * C * D * !X)	-0.00172	-0.00177	-0.00177
	(!A * C * D * !X)	0.00228	0.00230	0.00229
	(!A * C * !D * !X)	-0.00110	-0.00110	-0.00110
	(!A * C * !D * !X)	0.00231	0.00234	0.00230
	(!A * !C * !X)	-0.00111	-0.00112	-0.00111
	(!A * !C * !X)	0.00232	0.00235	0.00232

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)	0.00046	0.00046	0.00046
	(A * B * !D * !X)	-0.00097	-0.00098	-0.00097
	(A * !B * D * !X)	0.00082	0.00083	0.00082
	(A * !B * D * !X)	-0.00097	-0.00098	-0.00097
	(A * !B * !D * !X)	0.00050	0.00051	0.00050
	(A * !B * !D * !X)	-0.00097	-0.00098	-0.00097
	(!A * B * D * !X)	0.00080	0.00080	0.00080
	(!A * B * D * !X)	-0.00097	-0.00098	-0.00097
	(!A * B * !D * !X)	0.00049	0.00050	0.00049
	(!A * B * !D * !X)	-0.00097	-0.00098	-0.00097
	(!A * !B * D * !X)	0.00082	0.00083	0.00082
	(!A * !B * D * !X)	-0.00097	-0.00098	-0.00097
	(!A * !B * !D * !X)	0.00052	0.00052	0.00052
	(!A * !B * !D * !X)	-0.00097	-0.00098	-0.00097

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00050	0.00051	0.00050
	(A * B * !D * !X)	-0.00114	-0.00115	-0.00114
	(A * !B * D * !X)	0.00092	0.00093	0.00093
	(A * !B * D * !X)	-0.00114	-0.00115	-0.00114
	(A * !B * !D * !X)	0.00057	0.00056	0.00056
	(A * !B * !D * !X)	-0.00114	-0.00114	-0.00114
	(!A * B * D * !X)	0.00089	0.00091	0.00090
	(!A * B * D * !X)	-0.00113	-0.00115	-0.00114
	(!A * B * !D * !X)	0.00055	0.00055	0.00054
	(!A * B * !D * !X)	-0.00114	-0.00114	-0.00114
	(!A * !B * D * !X)	0.00092	0.00093	0.00092
	(!A * !B * D * !X)	-0.00114	-0.00115	-0.00114
	(!A * !B * !D * !X)	0.00059	0.00059	0.00058
	(!A * !B * !D * !X)	-0.00114	-0.00114	-0.00114
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00126	0.00127	0.00126
	(A * B * !D * !X)	-0.00237	-0.00238	-0.00238
	(A * !B * D * !X)	0.00199	0.00201	0.00200
	(A * !B * D * !X)	-0.00236	-0.00238	-0.00237
	(A * !B * !D * !X)	0.00136	0.00136	0.00136
	(A * !B * !D * !X)	-0.00238	-0.00238	-0.00238
	(!A * B * D * !X)	0.00195	0.00195	0.00195
	(!A * B * D * !X)	-0.00237	-0.00238	-0.00237
	(!A * B * !D * !X)	0.00133	0.00134	0.00133
	(!A * B * !D * !X)	-0.00238	-0.00239	-0.00238
	(!A * !B * D * !X)	0.00199	0.00202	0.00201
	(!A * !B * D * !X)	-0.00236	-0.00238	-0.00237
	(!A * !B * !D * !X)	0.00139	0.00139	0.00140
	(!A * !B * !D * !X)	-0.00238	-0.00238	-0.00238

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)	-0.00045	-0.00045	-0.00045
	(A * B * !D * !X)	0.00100	0.00099	0.00098
	(A * !B * D * !X)	-0.00080	-0.00083	-0.00082
	(A * !B * D * !X)	0.00097	0.00098	0.00098
	(A * !B * !D * !X)	-0.00050	-0.00051	-0.00050
	(A * !B * !D * !X)	0.00099	0.00098	0.00098
	(!A * B * D * !X)	-0.00075	-0.00080	-0.00080
	(!A * B * D * !X)	0.00098	0.00098	0.00098
	(!A * B * !D * !X)	-0.00049	-0.00050	-0.00049
	(!A * B * !D * !X)	0.00097	0.00098	0.00098
	(!A * !B * D * !X)	-0.00080	-0.00082	-0.00082
	(!A * !B * D * !X)	0.00097	0.00098	0.00098
	(!A * !B * !D * !X)	-0.00052	-0.00052	-0.00052
	(!A * !B * !D * !X)	0.00099	0.00098	0.00098
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00050	-0.00049	-0.00049
	(A * B * !D * !X)	0.00116	0.00115	0.00115
	(A * !B * D * !X)	-0.00090	-0.00093	-0.00093
	(A * !B * D * !X)	0.00114	0.00115	0.00114
	(A * !B * !D * !X)	-0.00057	-0.00056	-0.00056
	(A * !B * !D * !X)	0.00114	0.00114	0.00114
	(!A * B * D * !X)	-0.00085	-0.00091	-0.00090
	(!A * B * D * !X)	0.00114	0.00115	0.00114
	(!A * B * !D * !X)	-0.00055	-0.00055	-0.00054
	(!A * B * !D * !X)	0.00114	0.00114	0.00114
	(!A * !B * D * !X)	-0.00090	-0.00093	-0.00092
	(!A * !B * D * !X)	0.00114	0.00115	0.00114
	(!A * !B * !D * !X)	-0.00059	-0.00059	-0.00058
	(!A * !B * !D * !X)	0.00116	0.00114	0.00114

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00125	-0.00126	-0.00124
	(A * B * !D * !X)	0.00240	0.00242	0.00239
	(A * !B * D * !X)	-0.00195	-0.00201	-0.00200
	(A * !B * D * !X)	0.00238	0.00238	0.00238
	(A * !B * !D * !X)	-0.00136	-0.00136	-0.00136
	(A * !B * !D * !X)	0.00239	0.00243	0.00239
	(!A * B * D * !X)	-0.00186	-0.00195	-0.00195
	(!A * B * D * !X)	0.00237	0.00241	0.00238
	(!A * B * !D * !X)	-0.00133	-0.00134	-0.00133
	(!A * B * !D * !X)	0.00238	0.00242	0.00239
	(!A * !B * D * !X)	-0.00195	-0.00201	-0.00201
	(!A * !B * D * !X)	0.00238	0.00238	0.00238
	(!A * !B * !D * !X)	-0.00139	-0.00139	-0.00140
	(!A * !B * !D * !X)	0.00240	0.00243	0.00239

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)	0.00080	0.00081	0.00080
	(A * B * !C * !X)	-0.00108	-0.00109	-0.00109
	(A * !B * C * !X)	0.00078	0.00078	0.00077
	(A * !B * C * !X)	-0.00109	-0.00109	-0.00109
	(A * !B * !C * !X)	0.00080	0.00081	0.00080
	(A * !B * !C * !X)	-0.00109	-0.00109	-0.00109
	(!A * B * C * !X)	0.00077	0.00078	0.00077
	(!A * B * C * !X)	-0.00109	-0.00109	-0.00109
	(!A * !C * !X)	0.00080	0.00081	0.00080
	(!A * !C * !X)	-0.00108	-0.00109	-0.00109
	(!A * !B * C * !X)	0.00078	0.00078	0.00078
	(!A * !B * C * !X)	-0.00109	-0.00109	-0.00109

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00095	0.00095	0.00095
	(A * B * !C * !X)	-0.00118	-0.00119	-0.00118
	(A * !B * C * !X)	0.00093	0.00094	0.00093
	(A * !B * C * !X)	-0.00118	-0.00119	-0.00118
	(A * !B * !C * !X)	0.00095	0.00095	0.00095
	(A * !B * !C * !X)	-0.00118	-0.00119	-0.00118
	(!A * B * C * !X)	0.00091	0.00092	0.00092
	(!A * B * C * !X)	-0.00118	-0.00119	-0.00118
	(!A * !C * !X)	0.00095	0.00095	0.00095
	(!A * !C * !X)	-0.00118	-0.00119	-0.00118
	(!A * !B * C * !X)	0.00093	0.00093	0.00093
	(!A * !B * C * !X)	-0.00118	-0.00119	-0.00118
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00154	0.00155	0.00154
	(A * B * !C * !X)	-0.00231	-0.00232	-0.00231
	(A * !B * C * !X)	0.00152	0.00152	0.00151
	(A * !B * C * !X)	-0.00232	-0.00232	-0.00231
	(A * !B * !C * !X)	0.00154	0.00156	0.00155
	(A * !B * !C * !X)	-0.00231	-0.00232	-0.00231
	(!A * B * C * !X)	0.00148	0.00151	0.00149
	(!A * B * C * !X)	-0.00230	-0.00233	-0.00232
	(!A * !C * !X)	0.00154	0.00155	0.00154
	(!A * !C * !X)	-0.00231	-0.00232	-0.00231
	(!A * !B * C * !X)	0.00152	0.00152	0.00151
	(!A * !B * C * !X)	-0.00232	-0.00232	-0.00232

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)**	-0.00078	-0.00080	-0.00080
	(A * B * !C * !X)	0.00109	0.00109	0.00109
	(A * !B * C * !X)	-0.00075	-0.00078	-0.00077
	(A * !B * C * !X)	0.00109	0.00109	0.00109
	(A * !B * !C * !X)	-0.00078	-0.00080	-0.00080
	(A * !B * !C * !X)	0.00109	0.00109	0.00109
	(!A * B * C * !X)	-0.00073	-0.00078	-0.00077
	(!A * B * C * !X)	0.00109	0.00109	0.00109
	(!A * !C * !X)	-0.00079	-0.00080	-0.00080
	(!A * !C * !X)	0.00109	0.00109	0.00109
	(!A * !B * C * !X)	-0.00075	-0.00078	-0.00078
	(!A * !B * C * !X)	0.00109	0.00109	0.00109
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00093	-0.00095	-0.00095
	(A * B * !C * !X)	0.00118	0.00119	0.00119
	(A * !B * C * !X)	-0.00089	-0.00093	-0.00093
	(A * !B * C * !X)	0.00118	0.00119	0.00119
	(A * !B * !C * !X)	-0.00093	-0.00095	-0.00095
	(A * !B * !C * !X)	0.00118	0.00119	0.00119
	(!A * B * C * !X)	-0.00087	-0.00092	-0.00092
	(!A * B * C * !X)	0.00118	0.00119	0.00119
	(!A * !C * !X)	-0.00093	-0.00095	-0.00095
	(!A * !C * !X)	0.00118	0.00119	0.00119
	(!A * !B * C * !X)	-0.00089	-0.00093	-0.00093
	(!A * !B * C * !X)	0.00118	0.00119	0.00119

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00151	-0.00155	-0.00154
	(A * B * !C * !X)	0.00232	0.00233	0.00232
	(A * !B * C * !X)	-0.00145	-0.00152	-0.00151
	(A * !B * C * !X)	0.00232	0.00233	0.00232
	(A * !B * !C * !X)	-0.00151	-0.00156	-0.00155
	(A * !B * !C * !X)	0.00232	0.00233	0.00232
	(!A * B * C * !X)	-0.00141	-0.00151	-0.00149
	(!A * B * C * !X)	0.00232	0.00233	0.00232
	(!A * !C * !X)	-0.00151	-0.00155	-0.00154
	(!A * !C * !X)	0.00232	0.00233	0.00232
	(!A * !B * C * !X)	-0.00145	-0.00152	-0.00151
	(!A * !B * C * !X)	0.00232	0.00233	0.00232

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__buf_1	6.39360
sky130_fd_sc_hs__buf_16	35.16480
sky130_fd_sc_hs__buf_2	7.99200
sky130_fd_sc_hs__buf_4	11.18880
sky130_fd_sc_hs__buf_8	19.18080
sky130_fd_sc_hs__bufbuf_16	43.15680
sky130_fd_sc_hs__bufbuf_8	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__buf_1	0.00234	0.35597
sky130_fd_sc_hs__buf_16	0.01521	5.56104
sky130_fd_sc_hs__buf_2	0.00252	0.69880
sky130_fd_sc_hs__buf_4	0.00343	1.39464
sky130_fd_sc_hs__buf_8	0.00780	2.74695
sky130_fd_sc_hs__bufbuf_16	0.00281	5.51961
sky130_fd_sc_hs__bufbuf_8	0.00218	2.73589

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.00012	0.00014
sky130_fd_sc_hs__buf_16	0.00000	0.00154	0.00180
sky130_fd_sc_hs__buf_2	0.00000	0.00022	0.00024
sky130_fd_sc_hs__buf_4	0.00000	0.00036	0.00043
sky130_fd_sc_hs__buf_8	0.00000	0.00077	0.00090
sky130_fd_sc_hs__bufbuf_16	0.00000	0.00182	0.00214
sky130_fd_sc_hs__bufbuf_8	0.00000	0.00089	0.00104

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)	0.13261	1.12393	8.53459
sky130_fd_sc_hs__buf_16	A->X (RR)	0.12361	0.69689	8.62253
sky130_fd_sc_hs__buf_2	A->X (RR)	0.12589	0.99030	8.65642
sky130_fd_sc_hs__buf_4	A->X (RR)	0.14401	0.92415	8.88368
sky130_fd_sc_hs__buf_8	A->X (RR)	0.12307	0.77655	8.70733
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.41663	1.00830	9.03747
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.48689	1.11577	8.93309

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.19412	0.95174	5.71061
sky130_fd_sc_hs__buf_16	A->X (FF)	0.25658	0.98573	6.50754
sky130_fd_sc_hs__buf_2	A->X (FF)	0.24331	1.01877	6.22273
sky130_fd_sc_hs__buf_4	A->X (FF)	0.23102	0.97158	6.08351
sky130_fd_sc_hs__buf_8	A->X (FF)	0.26034	1.01281	6.60168
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.61054	1.34342	6.84258
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.50419	1.21958	5.96249

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00457	0.00442	0.00436
	A	0.00216	0.00200	0.00195
sky130_fd_sc_hs__buf_16	A	0.04576	0.04563	0.04684
	A	0.02998	0.02998	0.03120
sky130_fd_sc_hs__buf_2	A	0.00672	0.00665	0.00663
	A	0.00413	0.00405	0.00404
sky130_fd_sc_hs__buf_4	A	0.01082	0.01085	0.01092
	A	0.00727	0.00730	0.00748
sky130_fd_sc_hs__buf_8	A	0.02328	0.02335	0.02356
	A	0.01519	0.01528	0.01556
sky130_fd_sc_hs__bufbuf_16	A	0.05451	0.05678	0.05780
	A	0.05160	0.05392	0.05496
sky130_fd_sc_hs__bufbuf_8	A	0.02717	0.02833	0.02882
	A	0.02492	0.02610	0.02684

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00222	0.00213	0.00226
	A	0.00464	0.00454	0.00452
sky130_fd_sc_hs__buf_16	A	0.02938	0.03024	0.03192
	A	0.04515	0.04634	0.04725
sky130_fd_sc_hs__buf_2	A	0.00376	0.00375	0.00383
	A	0.00638	0.00644	0.00642
sky130_fd_sc_hs__buf_4	A	0.00761	0.00788	0.00921
	A	0.01116	0.01142	0.01157
sky130_fd_sc_hs__buf_8	A	0.01463	0.01524	0.01577
	A	0.02269	0.02331	0.02358
sky130_fd_sc_hs__bufbuf_16	A	0.05119	0.05414	0.05534
	A	0.05411	0.05704	0.05683
sky130_fd_sc_hs__bufbuf_8	A	0.02426	0.02567	0.02693
	A	0.02652	0.02792	0.02776

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkbuf_1	6.39360
sky130_fd_sc_hs__clkbuf_16	31.96800
sky130_fd_sc_hs__clkbuf_2	6.39360
sky130_fd_sc_hs__clkbuf_4	9.59040
sky130_fd_sc_hs__clkbuf_8	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__clkbuf_1	0.00248	0.35997
sky130_fd_sc_hs__clkbuf_16	0.00826	5.58486
sky130_fd_sc_hs__clkbuf_2	0.00248	0.67469
sky130_fd_sc_hs__clkbuf_4	0.00227	1.40018
sky130_fd_sc_hs__clkbuf_8	0.00424	2.76211

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	0.00014	0.00014
sky130_fd_sc_hs__clkbuf_16	0.00000	0.00138	0.00171
sky130_fd_sc_hs__clkbuf_2	0.00000	0.00021	0.00023
sky130_fd_sc_hs__clkbuf_4	0.00000	0.00035	0.00043
sky130_fd_sc_hs__clkbuf_8	0.00000	0.00069	0.00086

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)**	0.13215	1.12861	8.54154
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.15897	0.80923	9.05782
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.13399	1.02696	8.77402
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.16657	0.98883	9.16140
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.15821	0.87972	9.06717

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.17429	1.02559	6.79094
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.29186	1.06793	7.64923
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.21900	1.05127	7.04571
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.29872	1.13336	7.65823
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.28458	1.08433	7.60573

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00439	0.00419	0.00412
	A	0.00183	0.00163	0.00156
sky130_fd_sc_hs__clkbuf_16	A	0.03417	0.03455	0.03526
	A	0.02559	0.02601	0.02713
sky130_fd_sc_hs__clkbuf_2	A	0.00592	0.00577	0.00569
	A	0.00342	0.00328	0.00320
sky130_fd_sc_hs__clkbuf_4	A	0.00915	0.00920	0.00926
	A	0.00680	0.00686	0.00707
sky130_fd_sc_hs__clkbuf_8	A	0.01745	0.01765	0.01786
	A	0.01306	0.01328	0.01367

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00178	0.00168	0.00165
	A	0.00434	0.00424	0.00421
sky130_fd_sc_hs__clkbuf_16	A	0.02201	0.02367	0.02675
	A	0.03062	0.03221	0.03315
sky130_fd_sc_hs__clkbuf_2	A	0.00276	0.00274	0.00341
	A	0.00525	0.00525	0.00524
sky130_fd_sc_hs__clkbuf_4	A	0.00570	0.00611	0.00670
	A	0.00806	0.00845	0.00856
sky130_fd_sc_hs__clkbuf_8	A	0.01103	0.01077	0.01330
	A	0.01546	0.01619	0.01657

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkdlyinv3sd1_1	9.59040
sky130_fd_sc_hs__clkdlyinv3sd2_1	9.59040
sky130_fd_sc_hs__clkdlyinv3sd3_1	9.59040
sky130_fd_sc_hs__clkdlyinv5sd1_1	17.58240
sky130_fd_sc_hs__clkdlyinv5sd2_1	17.58240
sky130_fd_sc_hs__clkdlyinv5sd3_1	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00234	0.36624
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00237	0.36684
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00240	0.36630
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00233	0.36460
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00236	0.36126
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00240	0.36609

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.00021	0.00023
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.00018	0.00023
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.00019	0.00023
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.00037	0.00039
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.00026	0.00032
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.00031	0.00035

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)**	0.26020	1.55408	11.45650
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.27543	1.57378	11.52450
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.30663	1.61276	11.66740
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.44853	1.73912	11.62150
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.61947	1.91123	11.77480
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	1.05300	2.35993	12.44390

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.21140	0.75494	3.91768
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.33174	0.90387	4.12397
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.58158	1.20834	4.54403
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.41073	0.95702	4.10890
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.70546	1.28295	4.46624
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	1.37613	2.01654	5.34380

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00364	0.00351	0.00338
	A	0.00607	0.00594	0.00582
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00379	0.00364	0.00348
	A	0.00625	0.00610	0.00595
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00403	0.00385	0.00362
	A	0.00653	0.00633	0.00612
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.00798	0.00777	0.00756
	A	0.01040	0.01018	0.00996
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.00846	0.00824	0.00797
	A	0.01091	0.01069	0.01044
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.00945	0.00924	0.00891
	A	0.01195	0.01172	0.01140

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00597	0.00575	0.00575
	A	0.00353	0.00333	0.00322
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00620	0.00603	0.00591
	A	0.00373	0.00357	0.00343
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.00701	0.00659	0.00676
	A	0.00451	0.00440	0.00427
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01020	0.00995	0.00981
	A	0.00777	0.00753	0.00735
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01076	0.01056	0.01037
	A	0.00830	0.00812	0.00791
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.01256	0.01243	0.01241
	A	0.01006	0.00994	0.00976

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__clkinv_1	4.79520
sky130_fd_sc_hs__clkinv_16	38.36160
sky130_fd_sc_hs__clkinv_2	6.39360
sky130_fd_sc_hs__clkinv_4	11.18880
sky130_fd_sc_hs__clkinv_8	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkinv_1	0.00298	0.57181
sky130_fd_sc_hs__clkinv_16	0.04414	8.47952
sky130_fd_sc_hs__clkinv_2	0.00569	1.03892
sky130_fd_sc_hs__clkinv_4	0.01127	2.07077
sky130_fd_sc_hs__clkinv_8	0.02257	4.01759

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	0.00008	0.00011
sky130_fd_sc_hs__clkinv_16	0.00000	0.00149	0.00232
sky130_fd_sc_hs__clkinv_2	0.00000	0.00019	0.00029
sky130_fd_sc_hs__clkinv_4	0.00000	0.00037	0.00058
sky130_fd_sc_hs__clkinv_8	0.00000	0.00075	0.00116

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)	0.06590	1.23448	12.66760
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.05084	0.89881	13.17410
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.06421	1.16006	13.16470
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.05703	1.04850	13.16000
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.05684	0.96573	13.04650

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.04479	0.84377	8.47598
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.03572	0.55470	8.35676
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.04110	0.74200	8.14058
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.03801	0.67153	8.20189
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.03831	0.60823	8.18239

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00011	-0.00011	-0.00009
	A	0.00298	0.00299	0.00219
sky130_fd_sc_hs__clkinv_16	A	-0.00666	-0.00659	-0.00553
	A	0.03910	0.03922	0.04073
sky130_fd_sc_hs__clkinv_2	A	-0.00047	-0.00046	-0.00041
	A	0.00543	0.00545	0.00547
sky130_fd_sc_hs__clkinv_4	A	-0.00112	-0.00107	-0.00091
	A	0.01055	0.01063	0.01072
sky130_fd_sc_hs__clkinv_8	A	-0.00203	-0.00206	-0.00161
	A	0.02127	0.02133	0.02171

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00232	0.00224	0.00233
	A	-0.00076	-0.00079	-0.00074
sky130_fd_sc_hs__clkinv_16	A	0.03263	0.03208	0.01867
	A	-0.01288	-0.01378	-0.01138
sky130_fd_sc_hs__clkinv_2	A	0.00466	0.00487	0.00487
	A	-0.00121	-0.00126	-0.00116
sky130_fd_sc_hs__clkinv_4	A	0.00845	0.00855	0.00883
	A	-0.00317	-0.00325	-0.00293
sky130_fd_sc_hs__clkinv_8	A	0.01675	0.01657	0.01777
	A	-0.00653	-0.00685	-0.00602

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__conb_1	4.79520

Pin Capacitance Information

Cell Name	Max Cap(pf)	
	HI	LO
sky130_fd_sc_hs__conb_1	-	-

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__conb_1	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DELAYx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlymetal6s2s_1	15.98400
sky130_fd_sc_hs__dlymetal6s4s_1	15.98400
sky130_fd_sc_hs__dlymetal6s6s_1	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlymetal6s2s_1	0.00146	0.36009
sky130_fd_sc_hs__dlymetal6s4s_1	0.00146	0.36090
sky130_fd_sc_hs__dlymetal6s6s_1	0.00146	0.35952

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.00042	0.00042
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.00042	0.00042
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.00042	0.00042

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)**	0.16146	1.14772	8.49865
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.32946	1.31582	8.71288
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.47606	1.46107	8.83223

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.31603	1.14016	6.75025
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.63809	1.46510	6.95506
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.94924	1.78037	7.26535

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01170	0.01143	0.01114
	A	0.01020	0.00993	0.00965
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01171	0.01139	0.01112
	A	0.01021	0.00988	0.00963
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01173	0.01159	0.01139
	A	0.01023	0.01009	0.00992

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.00984	0.00964	0.00957
	A	0.01135	0.01123	0.01106
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.00986	0.00969	0.00941
	A	0.01137	0.01119	0.01091
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.00988	0.00980	0.01028
	A	0.01139	0.01130	0.01110

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT	
D	RESET_B	SET_B	CLK_N	Q	Q_N
0	1	1	F	0	1
1	1	1	F	1	0
x	x	0	x	1	0
x	0	1	x	0	1
x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbn_1	44.75520
sky130_fd_sc_hs__dfbbn_2	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RESET_B	SET_B	CLK_N	Q	Q_N
sky130_fd_sc_hs__dfbbn_1	0.00160	0.00157	0.00507	0.00281	0.35993	0.33712
sky130_fd_sc_hs__dfbbn_2	0.00160	0.00159	0.00502	0.00281	0.71132	0.68877

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	0.00099	0.00119
sky130_fd_sc_hs__dfbbn_2	0.00000	0.00117	0.00133

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)	1.21717	2.50124	12.90510
	SET_B->Q (FR)	0.54326	1.82837	12.34470
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	1.41519	2.52137	13.10260
	SET_B->Q (FR)	0.64062	1.75912	12.59080

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)	1.15883	1.95583	7.23467
	RESET_B->Q (FF)	0.62435	1.41054	6.59709
	SET_B->Q (RF)	0.31219	0.82527	3.51691
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	1.25216	2.02230	7.30644
	RESET_B->Q (FF)	0.71864	1.47808	6.70537
	SET_B->Q (RF)	0.40225	0.90715	3.74158

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)	1.07507	2.40699	12.65900
	RESET_B->Q_N (FR)	0.54295	1.86731	12.04620
	SET_B->Q_N (RR)	0.22985	1.28626	9.00133
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	1.08154	2.26568	12.70970
	RESET_B->Q_N (FR)	0.55087	1.72731	12.12630
	SET_B->Q_N (RR)	0.23439	1.15622	9.19062

Delay(ns) to Q_N falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbn_1	CLK_N->Q_N (FF)	1.01687	1.93249	7.30481
	SET_B->Q_N (FF)	0.37889	1.23061	6.90021
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	1.14651	2.07803	7.51123
	SET_B->Q_N (FF)	0.44436	1.28372	7.12564

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)	0.13878	0.26529	3.07347
	setup	CLK_N (F)	0.28066	0.10842	-2.98608
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.13991	0.27054	3.08115
	setup	CLK_N (F)	0.25466	0.07293	-2.99557

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)	-0.55575	-0.63450	-2.49837
	setup	CLK_N (F)	0.64685	0.71354	2.63643
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.55775	-0.63662	-2.49606
	setup	CLK_N (F)	0.64061	0.70973	2.63159

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)	0.13878	0.26529	3.07347
	setup	CLK_N (F)	0.28066	0.10842	-2.98608
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.13991	0.27054	3.08115
	setup	CLK_N (F)	0.25466	0.07293	-2.99557

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)	-0.55575	-0.63450	-2.49837
	setup	CLK_N (F)	0.64685	0.71354	2.63643
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.55775	-0.63662	-2.49606
	setup	CLK_N (F)	0.64061	0.70973	2.63159

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)	0.27796	0.11207	-3.09012
	removal	CLK_N (F)	0.17011	0.29762	3.19798
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.25063	0.08598	-3.09589
	removal	CLK_N (F)	0.17002	0.29643	3.20019

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)	0.27796	0.11207	-3.09012
	removal	CLK_N (F)	0.17011	0.29762	3.19798
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.25063	0.08598	-3.09589
	removal	CLK_N (F)	0.17002	0.29643	3.20019

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 ()	0.61721	1.09127	16.50020
	min_pulse_width	RESET_B ()	0.51720	1.09127	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.62343	1.10286	16.50020
	min_pulse_width	RESET_B ()	0.51586	1.10672	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)	-0.15595	-0.32054	-3.20936
	removal	CLK_N (F)	0.18362	0.35615	3.30166
	hold	RESET_B (R)	-0.11158	-0.20998	-1.08332
	setup	RESET_B (R)	0.36033	0.37082	1.35874
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.15837	-0.32111	-3.19944
	removal	CLK_N (F)	0.18633	0.35615	3.30770
	hold	RESET_B (R)	-0.15298	-0.26334	-1.31191
	setup	RESET_B (R)	0.36070	0.39470	1.54541

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)	-0.15595	-0.32054	-3.20936
	removal	CLK_N (F)	0.18362	0.35615	3.30166
	hold	RESET_B (R)	-0.11158	-0.21149	-1.08433
	hold	RESET_B (R)	-0.11214	-0.20998	-1.08332
	setup	RESET_B (R)	0.36033	0.37082	1.30610
	setup	RESET_B (R)	0.22688	0.28708	1.35874
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.15837	-0.32111	-3.19944
	removal	CLK_N (F)	0.18633	0.35615	3.30770
	hold	RESET_B (R)	-0.16428	-0.27914	-1.35339
	hold	RESET_B (R)	-0.15298	-0.26334	-1.31191
	setup	RESET_B (R)	0.36070	0.39470	1.54541
	setup	RESET_B (R)	0.22372	0.33460	1.53289

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 ()	0.40838	1.12603	16.50020
	min_pulse_width	SET_B ()	0.39421	1.13376	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.49899	1.21873	16.50020
	min_pulse_width	SET_B ()	0.46196	1.18397	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 ()	0.49874	1.04492	16.50020
	min_pulse_width	CLK_N ()	0.46818	1.04492	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.47582	1.04492	16.50020
	min_pulse_width	CLK_N ()	0.46818	1.04492	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 ()	0.59040	1.04492	16.50020
	min_pulse_width	CLK_N ()	0.70499	1.04492	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.71119	1.06037	16.50020
	min_pulse_width	CLK_N ()	0.72027	1.04492	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	0.00889	0.00889	0.00873
	CLK_N	0.01033	0.01032	0.01016
	SET_B	0.00898	0.00887	0.00915
	SET_B	0.01161	0.01150	0.01131
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01070	0.01089	0.01170
	CLK_N	0.01215	0.01234	0.01231
	SET_B	0.01078	0.01086	0.01072
	SET_B	0.01341	0.01348	0.01334

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00991	0.00990	0.00964
	CLK_N	0.01121	0.01120	0.01093
	RESET_B	0.01146	0.01152	0.01106
	RESET_B	0.01219	0.01225	0.01177
	SET_B	0.01187	0.01171	0.01133
	SET_B	0.00922	0.00907	0.00867
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01176	0.01194	0.01176
	CLK_N	0.01305	0.01323	0.01294
	RESET_B	0.01336	0.01362	0.01370
	RESET_B	0.01409	0.01435	0.01382
	SET_B	0.01376	0.01378	0.01334
	SET_B	0.01112	0.01114	0.01068

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00991	0.00991	0.00983
	CLK_N	0.01122	0.01121	0.01112
	RESET_B	0.01146	0.01152	0.01159
	RESET_B	0.01219	0.01226	0.01202
	SET_B	0.01188	0.01177	0.01155
	SET_B	0.00923	0.00908	0.00889
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01177	0.01195	0.01198
	CLK_N	0.01306	0.01323	0.01324
	RESET_B	0.01337	0.01362	0.01422
	RESET_B	0.01410	0.01435	0.01418
	SET_B	0.01377	0.01379	0.01366
	SET_B	0.01112	0.01115	0.01103

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.00888	0.00888	0.00884
	CLK_N	0.01032	0.01032	0.00999
	SET_B	0.00894	0.00884	0.00848
	SET_B	0.01158	0.01146	0.01106
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01069	0.01088	0.01053
	CLK_N	0.01214	0.01233	0.01198
	SET_B	0.01075	0.01082	0.01060
	SET_B	0.01337	0.01344	0.01300

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)	0.00684	0.00666	0.00652
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00553	0.00535	0.00522
	(CLK_N * !SET_B * Q * !Q_N)	0.00441	0.00433	0.00427
	(CLK_N * !SET_B * Q * !Q_N)	0.00273	0.00265	0.00259
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00386	0.00380	0.00372
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00221	0.00213	0.00206
	!CLK_N	0.00240	0.00230	0.00224
	!CLK_N	0.00074	0.00063	0.00058
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00686	0.00669	0.00654
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00555	0.00537	0.00523
	(CLK_N * !SET_B * Q * !Q_N)	0.00442	0.00435	0.00428
	(CLK_N * !SET_B * Q * !Q_N)	0.00274	0.00266	0.00260
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00384	0.00378	0.00370
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00219	0.00211	0.00203
	!CLK_N	0.00239	0.00230	0.00224
	!CLK_N	0.00073	0.00062	0.00058

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)	0.00668	0.00654	0.00638
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00799	0.00785	0.00769
	(CLK_N * !SET_B * Q * !Q_N)	0.00193	0.00181	0.00178
	(CLK_N * !SET_B * Q * !Q_N)	0.00362	0.00350	0.00345
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00245	0.00234	0.00232
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00412	0.00400	0.00398
	!CLK_N	0.00108	0.00098	0.00096
	!CLK_N	0.00275	0.00264	0.00262
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00666	0.00652	0.00637
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00798	0.00784	0.00768
	(CLK_N * !SET_B * Q * !Q_N)	0.00188	0.00176	0.00172
	(CLK_N * !SET_B * Q * !Q_N)	0.00357	0.00345	0.00341
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00243	0.00232	0.00230
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00410	0.00398	0.00396
	!CLK_N	0.00106	0.00096	0.00094
	!CLK_N	0.00272	0.00262	0.00260

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)	0.00741	0.00720	0.00708
	(CLK_N * D * SET_B * !Q * Q_N)	0.00581	0.00560	0.00548
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00443	0.00433	0.00426
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00248	0.00237	0.00231
	(!SET_B * Q * !Q_N)	0.00444	0.00433	0.00427
	(!SET_B * Q * !Q_N)	0.00245	0.00233	0.00227
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00743	0.00722	0.00710
	(CLK_N * D * SET_B * !Q * Q_N)	0.00580	0.00559	0.00548
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00442	0.00431	0.00425
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00245	0.00234	0.00227
	(!SET_B * Q * !Q_N)	0.00445	0.00433	0.00427
	(!SET_B * Q * !Q_N)	0.00243	0.00231	0.00226

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)	0.00655	0.00638	0.00628
	(CLK_N * D * SET_B * !Q * Q_N)	0.00816	0.00798	0.00788
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00214	0.00203	0.00201
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00410	0.00399	0.00396
	(!SET_B * Q * !Q_N)	0.00164	0.00153	0.00147
	(!SET_B * Q * !Q_N)	0.00365	0.00354	0.00347
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00658	0.00640	0.00630
	(CLK_N * D * SET_B * !Q * Q_N)	0.00821	0.00803	0.00793
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00216	0.00205	0.00203
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00414	0.00404	0.00401
	(!SET_B * Q * !Q_N)	0.00165	0.00154	0.00147
	(!SET_B * Q * !Q_N)	0.00368	0.00357	0.00350

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)	0.00216	0.00217	0.00216
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00243	-0.00244	-0.00243
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00689	0.00678	0.00670
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00191	0.00174	0.00168
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00213	0.00214	0.00213
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00241	-0.00242	-0.00241
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00690	0.00679	0.00670
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00195	0.00179	0.00172

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)	-0.00214	-0.00216	-0.00216
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00243	0.00245	0.00243
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00059	0.00042	0.00035
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00563	0.00545	0.00536
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00211	-0.00214	-0.00213
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00242	0.00243	0.00242
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00057	0.00039	0.00033
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00553	0.00538	0.00529

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)**	0.01300	0.01270	0.01264
	(D * RESET_B * SET_B * !Q * Q_N)	0.01062	0.01030	0.01026
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00849	0.00816	0.00800
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00574	0.00542	0.00526
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01004	0.00973	0.00968
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00731	0.00699	0.00693
	(!D * SET_B * !Q * Q_N)	0.00794	0.00760	0.00747
	(!D * SET_B * !Q * Q_N)	0.00521	0.00485	0.00472
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01386	0.01344	0.01321
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01075	0.01035	0.01012
	(!D * !SET_B * Q * !Q_N)	0.00897	0.00855	0.00835
	(!D * !SET_B * Q * !Q_N)	0.00623	0.00582	0.00562

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01303	0.01273	0.01269
	(D * RESET_B * SET_B * !Q * Q_N)	0.01065	0.01033	0.01028
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00848	0.00815	0.00799
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00573	0.00541	0.00525
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01005	0.00974	0.00968
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00731	0.00700	0.00694
	(!D * SET_B * !Q * Q_N)	0.00795	0.00761	0.00748
	(!D * SET_B * !Q * Q_N)	0.00522	0.00486	0.00473
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01386	0.01345	0.01323
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01077	0.01036	0.01014
	(!D * !SET_B * Q * !Q_N)	0.00893	0.00852	0.00831
	(!D * !SET_B * Q * !Q_N)	0.00620	0.00579	0.00558

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)	0.00656	0.00627	0.00609
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00930	0.00901	0.00884
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00902	0.00872	0.00844
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01176	0.01146	0.01118
	(!D * SET_B * !Q * Q_N)	0.00699	0.00670	0.00653
	(!D * SET_B * !Q * Q_N)	0.00973	0.00943	0.00928
	(!D * !SET_B * Q * !Q_N)	0.00891	0.00859	0.00836
	(!D * !SET_B * Q * !Q_N)	0.01163	0.01131	0.01110
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00656	0.00627	0.00610
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00930	0.00901	0.00885
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00899	0.00869	0.00841
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01173	0.01143	0.01115
	(!D * SET_B * !Q * Q_N)	0.00697	0.00668	0.00652
	(!D * SET_B * !Q * Q_N)	0.00971	0.00942	0.00927
	(!D * !SET_B * Q * !Q_N)	0.00894	0.00862	0.00839
	(!D * !SET_B * Q * !Q_N)	0.01167	0.01134	0.01113

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT	
D	RESET_B	SET_B	CLK	Q	Q_N
0	1	1	R	0	1
1	1	1	R	1	0
x	x	0	x	1	0
x	0	1	x	0	1
x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RESET_B	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfbbp_1	0.00139	0.00173	0.00593	0.00277	0.36164	0.34035

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	0.00099	0.00119

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)	1.11221	2.10232	9.65009
	SET_B->Q (FR)	0.50423	1.79677	12.28630

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.77809	1.26173	3.72872
	RESET_B->Q (FF)	0.60094	1.38653	6.53826
	SET_B->Q (RF)	0.32041	0.81456	3.48999

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)	0.69767	1.71933	9.23553
	RESET_B->Q_N (FR)	0.52173	1.85147	12.06150
	SET_B->Q_N (RR)	0.23784	1.28418	9.04481

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)	0.91781	1.52755	3.99930
	SET_B->Q_N (FF)	0.34910	1.19187	6.80289

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)	-0.06149	-0.12595	-0.61614
	setup	CLK (R)	0.25513	0.25216	0.75003

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)	-0.42927	-0.56768	-4.19972
	setup	CLK (R)	0.64133	0.75998	4.35701

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)	-0.06149	-0.12595	-0.61614
	setup	CLK (R)	0.25513	0.25216	0.75003

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)	-0.42927	-0.56768	-4.19972
	setup	CLK (R)	0.64133	0.75998	4.35701

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)	0.27192	0.28478	0.42985
	removal	CLK (R)	-0.07849	-0.10852	-0.19164

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)	0.27192	0.28478	0.42985
	removal	CLK (R)	-0.07849	-0.10852	-0.19164

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 ()	0.52814	1.07582	16.50020
	min_pulse_width	RESET_B ()	0.53996	1.07582	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)	0.03178	0.00400	0.39532
	removal	CLK (R)	0.18611	0.22201	0.40423
	hold	RESET_B (R)	-0.11774	-0.23278	-1.18248
	setup	RESET_B (R)	0.28588	0.34353	1.48968

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)	0.03178	0.00400	0.39532
	removal	CLK (R)	0.18611	0.22201	0.40423
	hold	RESET_B (R)	-0.12078	-0.23540	-1.18248
	hold	RESET_B (R)	-0.11774	-0.23278	-1.18258
	setup	RESET_B (R)	0.27446	0.33775	1.48968
	setup	RESET_B (R)	0.28588	0.34353	1.42803

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 ()	0.35533	1.09900	16.50020
	min_pulse_width	SET_B ()	0.36743	1.09900	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 ()	0.22374	1.04492	16.50020
	min_pulse_width	CLK ()	0.38033	1.04492	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 ()	0.54457	1.04492	16.50020
	min_pulse_width	CLK ()	0.84612	1.06423	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	0.01041	0.01044	0.01043
	CLK	0.00903	0.00907	0.00906
	SET_B	0.00891	0.00880	0.00905
	SET_B	0.01180	0.01169	0.01148

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01056	0.01050	0.01019
	CLK	0.00903	0.00898	0.00866
	RESET_B	0.01046	0.01050	0.01002
	RESET_B	0.01121	0.01126	0.01076
	SET_B	0.01123	0.01106	0.01064
	SET_B	0.00833	0.00815	0.00772

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01057	0.01051	0.01043
	CLK	0.00904	0.00898	0.00891
	RESET_B	0.01047	0.01051	0.01040
	RESET_B	0.01122	0.01127	0.01101
	SET_B	0.01124	0.01111	0.01086
	SET_B	0.00834	0.00815	0.00796

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01039	0.01043	0.01022
	CLK	0.00902	0.00905	0.00885
	SET_B	0.00887	0.00876	0.00855
	SET_B	0.01176	0.01165	0.01122

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00156	0.00148	0.00144
	CLK	0.00013	0.00003	0.00001
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00647	0.00629	0.00616
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00520	0.00503	0.00490
	(!CLK * !SET_B * Q * !Q_N)	0.00370	0.00364	0.00359
	(!CLK * !SET_B * Q * !Q_N)	0.00208	0.00201	0.00197
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00307	0.00302	0.00295
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00146	0.00140	0.00135

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00003	-0.00008	-0.00010
	CLK	0.00140	0.00135	0.00134
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00492	0.00479	0.00466
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00619	0.00606	0.00593
	(!CLK * !SET_B * Q * !Q_N)	0.00125	0.00117	0.00112
	(!CLK * !SET_B * Q * !Q_N)	0.00288	0.00279	0.00274
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00182	0.00174	0.00172
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00343	0.00334	0.00333

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)	0.00402	0.00391	0.00383
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00219	0.00206	0.00199
	(!SET_B * Q * !Q_N)	0.00435	0.00422	0.00416
	(!SET_B * Q * !Q_N)	0.00249	0.00235	0.00228
	(!CLK * D * SET_B * !Q * Q_N)	0.00746	0.00720	0.00708
	(!CLK * D * SET_B * !Q * Q_N)	0.00597	0.00571	0.00559

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)	0.00206	0.00193	0.00191
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00389	0.00376	0.00374
	(!SET_B * Q * !Q_N)	0.00123	0.00110	0.00104
	(!SET_B * Q * !Q_N)	0.00312	0.00298	0.00292
	(!CLK * D * SET_B * !Q * Q_N)	0.00549	0.00529	0.00516
	(!CLK * D * SET_B * !Q * Q_N)	0.00698	0.00678	0.00665

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)	0.00217	0.00219	0.00217
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00310	-0.00312	-0.00310
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00571	0.00554	0.00548
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00002	-0.00014	-0.00022

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)	-0.00215	-0.00218	-0.00217
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00311	0.00313	0.00310
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00121	0.00101	0.00092
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00688	0.00670	0.00661

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)	0.00977	0.00945	0.00925
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00687	0.00654	0.00634
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01165	0.01127	0.01101
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00891	0.00854	0.00827
	(!D * SET_B * !Q * Q_N)	0.00979	0.00946	0.00928
	(!D * SET_B * !Q * Q_N)	0.00688	0.00655	0.00638
	(!D * !SET_B * Q * !Q_N)	0.01219	0.01192	0.01174
	(!D * !SET_B * Q * !Q_N)	0.00910	0.00884	0.00866

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)	0.01012	0.00981	0.00947
	(D * RESET_B * SET_B * !Q * Q_N)	0.01319	0.01288	0.01256
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00522	0.00494	0.00478
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00811	0.00783	0.00768
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00656	0.00625	0.00604
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00928	0.00898	0.00878
	(!D * SET_B * !Q * Q_N)	0.00507	0.00480	0.00465
	(!D * SET_B * !Q * Q_N)	0.00796	0.00770	0.00756
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01069	0.01040	0.01047
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01342	0.01313	0.01322
	(!D * !SET_B * Q * !Q_N)	0.00698	0.00670	0.00676
	(!D * !SET_B * Q * !Q_N)	0.01005	0.00978	0.00985

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	RESET_B	CLK	Q	Q_N
0	1	R	0	1
1	1	R	1	0
x	0	x	0	1
x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrbp_1	38.36160
sky130_fd_sc_hs__dfrbp_2	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	RESET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfrbp_1	0.00167	0.00505	0.00284	0.36762	0.35571
sky130_fd_sc_hs__dfrbp_2	0.00152	0.00487	0.00284	0.71874	0.72095

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.00092	0.00115
sky130_fd_sc_hs__dfrbp_2	0.00000	0.00108	0.00135

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)	0.73382	1.72295	9.31340
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.92539	1.73601	9.65995

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.55076	1.03946	3.46614
	RESET_B->Q (FF)	0.83625	1.63697	7.56471
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.62444	1.09287	3.52380
	RESET_B->Q (FF)	0.96885	1.75286	7.78060

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)	0.46927	1.49318	8.98580
	RESET_B->Q_N (FR)	0.75454	2.08199	13.07140
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.44934	1.32993	9.01656
	RESET_B->Q_N (FR)	0.79477	1.98622	13.26050

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)	0.54850	1.17270	3.60970
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.64416	1.27427	3.80768

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)	-0.09220	-0.19395	-0.94496
	setup	CLK (R)	0.27639	0.32076	1.19156
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.09111	-0.20045	-1.02847
	setup	CLK (R)	0.28651	0.33130	1.26494

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)	-0.12798	-0.36903	-4.37101
	setup	CLK (R)	0.75950	0.85619	4.80023
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.20514	-0.46856	-4.61799
	setup	CLK (R)	0.82250	0.92799	4.94950

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)	-0.09220	-0.19395	-0.94496
	setup	CLK (R)	0.27639	0.32076	1.19156
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.09111	-0.20045	-1.02847
	setup	CLK (R)	0.28651	0.33130	1.26494

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)	-0.12798	-0.36903	-4.37101
	setup	CLK (R)	0.75950	0.85619	4.80023
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.20514	-0.46856	-4.61799
	setup	CLK (R)	0.82250	0.92799	4.94950

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)	0.29225	0.31885	1.27018
	removal	CLK (R)	-0.17384	-0.25933	-1.22342
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.29977	0.32684	1.33248
	removal	CLK (R)	-0.18468	-0.26646	-1.29116

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)	0.29225	0.31885	1.27018
	removal	CLK (R)	-0.17384	-0.25933	-1.22342
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.29977	0.32684	1.33248
	removal	CLK (R)	-0.18468	-0.26646	-1.29116

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 ()	0.49620	1.24190	16.50020
	min_pulse_width	RESET_B ()	0.35318	1.09127	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.53751	1.25349	16.50020
	min_pulse_width	RESET_B ()	0.35587	1.07968	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 ()	0.46818	1.04492	16.50020
	min_pulse_width	CLK ()	0.19700	1.04492	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.66297	1.04492	16.50020
	min_pulse_width	CLK ()	0.21610	1.04492	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 ()	0.51402	1.04492	16.50020
	min_pulse_width	CLK ()	0.84237	1.07968	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.51402	1.04492	16.50020
	min_pulse_width	CLK ()	0.84335	1.07582	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	0.00978	0.00972	0.00963
	CLK	0.00832	0.00827	0.00817
sky130_fd_sc_hs__dfrbp_2	CLK	0.01068	0.01084	0.01090
	CLK	0.00925	0.00942	0.00947

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00998	0.00993	0.00980
	CLK	0.00849	0.00845	0.00831
	RESET_B	0.00758	0.00751	0.00712
	RESET_B	0.01039	0.01030	0.00991
sky130_fd_sc_hs__dfrbp_2	CLK	0.01103	0.01120	0.01106
	CLK	0.00960	0.00978	0.00962
	RESET_B	0.00956	0.00976	0.00933
	RESET_B	0.01216	0.01234	0.01191

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00999	0.00994	0.01002
	CLK	0.00849	0.00845	0.00854
	RESET_B	0.00759	0.00751	0.00781
	RESET_B	0.01040	0.01031	0.01014
sky130_fd_sc_hs__dfrbp_2	CLK	0.01104	0.01121	0.01139
	CLK	0.00961	0.00979	0.00997
	RESET_B	0.00957	0.00977	0.00965
	RESET_B	0.01218	0.01236	0.01222

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.00978	0.00972	0.00944
	CLK	0.00832	0.00826	0.00798
sky130_fd_sc_hs__dfrbp_2	CLK	0.01068	0.01083	0.01057
	CLK	0.00924	0.00941	0.00913

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00255	0.00244	0.00239
	(CLK * RESET_B)	0.00064	0.00052	0.00047
	(CLK * !RESET_B)	0.00030	0.00030	0.00029
	(CLK * !RESET_B)	-0.00081	-0.00081	-0.00082
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00728	0.00717	0.00706
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00527	0.00517	0.00505
	(!CLK * !RESET_B)	0.00030	0.00030	0.00029
	(!CLK * !RESET_B)	-0.00081	-0.00081	-0.00082
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00295	0.00285	0.00280
	(CLK * RESET_B)	0.00129	0.00119	0.00114
	(CLK * !RESET_B)	0.00033	0.00033	0.00033
	(CLK * !RESET_B)	-0.00068	-0.00069	-0.00069
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00902	0.00896	0.00885
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00747	0.00741	0.00730
	(!CLK * !RESET_B)	0.00033	0.00033	0.00033
	(!CLK * !RESET_B)	-0.00068	-0.00069	-0.00069

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00043	0.00030	0.00027
	(CLK * RESET_B)	0.00234	0.00222	0.00218
	(CLK * !RESET_B)	-0.00028	-0.00029	-0.00028
	(CLK * !RESET_B)	0.00082	0.00082	0.00082
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00439	0.00423	0.00412
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00641	0.00624	0.00613
	(!CLK * !RESET_B)	-0.00028	-0.00029	-0.00028
	(!CLK * !RESET_B)	0.00082	0.00082	0.00082
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00066	0.00054	0.00051
	(CLK * RESET_B)	0.00233	0.00220	0.00217
	(CLK * !RESET_B)	-0.00032	-0.00032	-0.00032
	(CLK * !RESET_B)	0.00069	0.00070	0.00069
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00547	0.00530	0.00517
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00702	0.00685	0.00671
	(!CLK * !RESET_B)	-0.00032	-0.00032	-0.00032
	(!CLK * !RESET_B)	0.00069	0.00070	0.00069

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)	0.00465	0.00457	0.00451
	(CLK * D * !Q * Q_N)	-0.00083	-0.00094	-0.00098
	(CLK * !D * !Q * Q_N)	0.00217	0.00219	0.00217
	(CLK * !D * !Q * Q_N)	-0.00243	-0.00244	-0.00243
	(!CLK * D * !Q * Q_N)	0.00955	0.00928	0.00910
	(!CLK * D * !Q * Q_N)	0.00401	0.00374	0.00354
	(!CLK * !D * !Q * Q_N)	0.00211	0.00212	0.00211
	(!CLK * !D * !Q * Q_N)	-0.00248	-0.00249	-0.00248
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00521	0.00515	0.00510
	(CLK * D * !Q * Q_N)	0.00001	-0.00008	-0.00012
	(CLK * !D * !Q * Q_N)	0.00238	0.00240	0.00238
	(CLK * !D * !Q * Q_N)	-0.00211	-0.00213	-0.00211
	(!CLK * D * !Q * Q_N)	0.01146	0.01121	0.01101
	(!CLK * D * !Q * Q_N)	0.00638	0.00611	0.00592
	(!CLK * !D * !Q * Q_N)	0.00234	0.00237	0.00235
	(!CLK * !D * !Q * Q_N)	-0.00215	-0.00216	-0.00215

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)	-0.00118	-0.00133	-0.00137
	(CLK * D * !Q * Q_N)	0.00429	0.00417	0.00412
	(CLK * !D * !Q * Q_N)	-0.00215	-0.00219	-0.00217
	(CLK * !D * !Q * Q_N)	0.00243	0.00245	0.00243
	(!CLK * D * !Q * Q_N)	0.00337	0.00304	0.00276
	(!CLK * D * !Q * Q_N)	0.00895	0.00860	0.00832
	(!CLK * !D * !Q * Q_N)	-0.00209	-0.00212	-0.00211
	(!CLK * !D * !Q * Q_N)	0.00249	0.00252	0.00249
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00119	-0.00131	-0.00135
	(CLK * D * !Q * Q_N)	0.00401	0.00392	0.00387
	(CLK * !D * !Q * Q_N)	-0.00236	-0.00240	-0.00238
	(CLK * !D * !Q * Q_N)	0.00212	0.00213	0.00212
	(!CLK * D * !Q * Q_N)	0.00423	0.00394	0.00370
	(!CLK * D * !Q * Q_N)	0.00933	0.00902	0.00878
	(!CLK * !D * !Q * Q_N)	-0.00232	-0.00237	-0.00235
	(!CLK * !D * !Q * Q_N)	0.00215	0.00218	0.00215

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)	0.00937	0.00904	0.00890
	(D * RESET_B * Q * !Q_N)	0.00640	0.00608	0.00594
	(D * !RESET_B * !Q * Q_N)	0.00967	0.00933	0.00919
	(D * !RESET_B * !Q * Q_N)	0.00670	0.00638	0.00624
	(!D * !Q * Q_N)	0.00967	0.00932	0.00919
	(!D * !Q * Q_N)	0.00670	0.00637	0.00623
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00850	0.00818	0.00805
	(D * RESET_B * Q * !Q_N)	0.00563	0.00529	0.00516
	(D * !RESET_B * !Q * Q_N)	0.00855	0.00823	0.00810
	(D * !RESET_B * !Q * Q_N)	0.00568	0.00535	0.00521
	(!D * !Q * Q_N)	0.00855	0.00823	0.00809
	(!D * !Q * Q_N)	0.00567	0.00535	0.00521

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)	0.00531	0.00505	0.00490
	(D * RESET_B * Q * !Q_N)	0.00827	0.00800	0.00787
	(D * RESET_B * !Q * Q_N)	0.00966	0.00936	0.00908
	(D * RESET_B * !Q * Q_N)	0.01252	0.01222	0.01195
	(D * !RESET_B * !Q * Q_N)	0.00497	0.00470	0.00455
	(D * !RESET_B * !Q * Q_N)	0.00793	0.00766	0.00752
	(!D * RESET_B * Q * !Q_N)	0.00992	0.00966	0.00980
	(!D * RESET_B * Q * !Q_N)	0.01297	0.01271	0.01286
	(!D * !Q * Q_N)	0.00497	0.00470	0.00455
	(!D * !Q * Q_N)	0.00793	0.00766	0.00752
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00534	0.00507	0.00493
	(D * RESET_B * Q * !Q_N)	0.00824	0.00795	0.00780
	(D * RESET_B * !Q * Q_N)	0.01175	0.01144	0.01110
	(D * RESET_B * !Q * Q_N)	0.01472	0.01441	0.01409
	(D * !RESET_B * !Q * Q_N)	0.00532	0.00503	0.00489
	(D * !RESET_B * !Q * Q_N)	0.00819	0.00791	0.00777
	(!D * RESET_B * Q * !Q_N)	0.01091	0.01063	0.01075
	(!D * RESET_B * Q * !Q_N)	0.01370	0.01340	0.01352
	(!D * !Q * Q_N)	0.00532	0.00503	0.00489
	(!D * !Q * Q_N)	0.00819	0.00791	0.00777

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK_N	Q
0	1	F	0
1	1	F	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtn_1	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK_N	Q
sky130_fd_sc_hs__dfrtn_1	0.00164	0.00487	0.00271	0.35697

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.00086	0.00105

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)	0.81584	2.13777	12.56650

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)	0.55416	1.34399	6.68259
	RESET_B->Q (FF)	0.78448	1.58280	7.46245

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)	0.17279	0.29117	3.04560
	setup	CLK_N (F)	0.04489	-0.09840	-2.80526

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)	-0.09509	-0.18114	-1.88779
	setup	CLK_N (F)	0.87552	0.87685	2.88628

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)	0.17279	0.29117	3.04560
	setup	CLK_N (F)	0.04489	-0.09840	-2.80526

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)	-0.09509	-0.18114	-1.88779
	setup	CLK_N (F)	0.87552	0.87685	2.88628

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)	0.05666	-0.10280	-2.77965
	removal	CLK_N (F)	0.06262	0.19651	2.82403

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)	0.05666	-0.10280	-2.77965
	removal	CLK_N (F)	0.06262	0.19651	2.82403

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 ()	0.34213	1.08741	16.50020
	min_pulse_width	RESET_B ()	0.48702	1.24190	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 ()	0.27339	1.04492	16.50020
	min_pulse_width	CLK_N ()	0.79284	1.04492	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 ()	0.54075	1.04492	16.50020
	min_pulse_width	CLK_N ()	0.37484	1.06423	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	0.01533	0.01516	0.01550
	CLK_N	0.01809	0.01792	0.01829

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01422	0.01397	0.01363
	CLK_N	0.01690	0.01666	0.01631
	RESET_B	0.01353	0.01324	0.01280
	RESET_B	0.01873	0.01841	0.01795

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)	0.00718	0.00708	0.00696
	(CLK_N * RESET_B)	0.00544	0.00534	0.00521
	(CLK_N * !RESET_B)	0.00030	0.00030	0.00029
	(CLK_N * !RESET_B)	-0.00080	-0.00080	-0.00081
	(!CLK_N * RESET_B)	0.00247	0.00237	0.00232
	(!CLK_N * RESET_B)	0.00068	0.00056	0.00051
	(!CLK_N * !RESET_B)	0.00030	0.00030	0.00029
	(!CLK_N * !RESET_B)	-0.00080	-0.00080	-0.00081

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)	0.00508	0.00492	0.00482
	(CLK_N * RESET_B)	0.00684	0.00667	0.00657
	(CLK_N * !RESET_B)	-0.00029	-0.00029	-0.00029
	(CLK_N * !RESET_B)	0.00082	0.00081	0.00081
	(!CLK_N * RESET_B)	0.00049	0.00037	0.00034
	(!CLK_N * RESET_B)	0.00229	0.00217	0.00214
	(!CLK_N * !RESET_B)	-0.00029	-0.00029	-0.00029
	(!CLK_N * !RESET_B)	0.00082	0.00082	0.00081

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)	0.00944	0.00919	0.00900
	(CLK_N * D * !Q)	0.00430	0.00406	0.00387
	(CLK_N * !D * !Q)	0.00229	0.00231	0.00229
	(CLK_N * !D * !Q)	-0.00213	-0.00215	-0.00213
	(!CLK_N * D * !Q)	0.00443	0.00436	0.00431
	(!CLK_N * D * !Q)	-0.00077	-0.00087	-0.00090
	(!CLK_N * !D * !Q)	0.00223	0.00225	0.00223
	(!CLK_N * !D * !Q)	-0.00219	-0.00221	-0.00219

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)	0.00400	0.00371	0.00344
	(CLK_N * D * !Q)	0.00914	0.00884	0.00859
	(CLK_N * !D * !Q)	-0.00227	-0.00231	-0.00229
	(CLK_N * !D * !Q)	0.00214	0.00216	0.00214
	(!CLK_N * D * !Q)	-0.00105	-0.00116	-0.00120
	(!CLK_N * D * !Q)	0.00416	0.00406	0.00402
	(!CLK_N * !D * !Q)	-0.00221	-0.00225	-0.00223
	(!CLK_N * !D * !Q)	0.00219	0.00221	0.00220

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)	0.00889	0.00850	0.00831
	(D * RESET_B * Q)	0.00615	0.00578	0.00559
	(D * RESET_B * !Q)	0.01369	0.01329	0.01320
	(D * RESET_B * !Q)	0.01101	0.01063	0.01053
	(D * !RESET_B * !Q)	0.00877	0.00836	0.00820
	(D * !RESET_B * !Q)	0.00603	0.00563	0.00547
	(!D * RESET_B * Q)	0.01338	0.01290	0.01266
	(!D * RESET_B * Q)	0.01058	0.01012	0.00987
	(!D * !Q)	0.00876	0.00836	0.00819
	(!D * !Q)	0.00603	0.00563	0.00546

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)	0.00642	0.00614	0.00597
	(D * RESET_B * Q)	0.00914	0.00886	0.00869
	(D * !RESET_B * !Q)	0.00654	0.00625	0.00608
	(D * !RESET_B * !Q)	0.00926	0.00897	0.00881
	(!D * !Q)	0.00654	0.00624	0.00607
	(!D * !Q)	0.00925	0.00896	0.00881

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtp_1	36.76320
sky130_fd_sc_hs__dfrtp_2	38.36160
sky130_fd_sc_hs__dfrtp_4	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK	Q
sky130_fd_sc_hs__dfrtp_1	0.00165	0.00502	0.00286	0.36196
sky130_fd_sc_hs__dfrtp_2	0.00164	0.00494	0.00284	0.71703
sky130_fd_sc_hs__dfrtp_4	0.00165	0.00511	0.00284	1.43418

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	0.00086	0.00105
sky130_fd_sc_hs__dfrtp_2	0.00000	0.00094	0.00110
sky130_fd_sc_hs__dfrtp_4	0.00000	0.00112	0.00129

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)	0.56568	1.57429	9.05472
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.55563	1.41106	9.05457
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.72563	1.47235	9.34986

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.53910	1.02341	3.42893
	RESET_B->Q (FF)	0.80709	1.60425	7.51948
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.60898	1.09450	3.52889
	RESET_B->Q (FF)	0.87549	1.67199	7.61932
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.60640	1.07386	3.64566
	RESET_B->Q (FF)	0.89568	1.66621	7.75209

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)	-0.09711	-0.20041	-0.98204
	setup	CLK (R)	0.32807	0.36075	1.23865
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.09424	-0.19910	-0.96965
	setup	CLK (R)	0.31880	0.35794	1.22691
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.09795	-0.19795	-0.94865
	setup	CLK (R)	0.34930	0.37674	1.21881

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)	-0.10084	-0.33770	-4.17485
	setup	CLK (R)	0.75696	0.85454	4.80649
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.09702	-0.33411	-4.16363
	setup	CLK (R)	0.75438	0.85492	4.79894
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.12484	-0.36211	-4.27075
	setup	CLK (R)	0.81359	0.91476	4.84729

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)	-0.09711	-0.20041	-0.98204
	setup	CLK (R)	0.32807	0.36075	1.23865
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.09424	-0.19910	-0.96965
	setup	CLK (R)	0.31880	0.35794	1.22691
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.09795	-0.19795	-0.94865
	setup	CLK (R)	0.34930	0.37674	1.21881

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)	-0.10084	-0.33770	-4.17485
	setup	CLK (R)	0.75696	0.85454	4.80649
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.09702	-0.33411	-4.16363
	setup	CLK (R)	0.75438	0.85492	4.79894
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.12484	-0.36211	-4.27075
	setup	CLK (R)	0.81359	0.91476	4.84729

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)	0.33933	0.36012	1.31042
	removal	CLK (R)	-0.17291	-0.25554	-1.23001
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.33035	0.35401	1.30075
	removal	CLK (R)	-0.16973	-0.25324	-1.22236
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.36267	0.37241	1.28531
	removal	CLK (R)	-0.18045	-0.26003	-1.22208

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)	0.33933	0.36012	1.31042
	removal	CLK (R)	-0.17291	-0.25554	-1.23001
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.33035	0.35401	1.30075
	removal	CLK (R)	-0.16973	-0.25324	-1.22236
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.36267	0.37241	1.28531
	removal	CLK (R)	-0.18045	-0.26003	-1.22208

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 ()	0.49251	1.23804	16.50020
	min_pulse_width	RESET_B ()	0.34317	1.09127	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.49620	1.24190	16.50020
	min_pulse_width	RESET_B ()	0.35641	1.10286	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.51958	1.26122	16.50020
	min_pulse_width	RESET_B ()	0.34918	1.09127	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 ()	0.30777	1.04492	16.50020
	min_pulse_width	CLK ()	0.19318	1.04492	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.31922	1.04492	16.50020
	min_pulse_width	CLK ()	0.19700	1.04492	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.44527	1.04492	16.50020
	min_pulse_width	CLK ()	0.21228	1.04492	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 ()	0.56367	1.04492	16.50020
	min_pulse_width	CLK ()	0.84237	1.07968	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.55985	1.04492	16.50020
	min_pulse_width	CLK ()	0.84930	1.08355	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.61031	1.06037	16.50020
	min_pulse_width	CLK ()	0.91405	1.12217	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	0.01759	0.01738	0.01719
	CLK	0.01468	0.01448	0.01428
sky130_fd_sc_hs__dfrtp_2	CLK	0.01928	0.01925	0.01913
	CLK	0.01638	0.01635	0.01627
sky130_fd_sc_hs__dfrtp_4	CLK	0.02432	0.02457	0.02470
	CLK	0.02130	0.02157	0.02184

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.01875	0.01855	0.01859
	CLK	0.01566	0.01548	0.01549
	RESET_B	0.01367	0.01338	0.01292
	RESET_B	0.01924	0.01893	0.01846
sky130_fd_sc_hs__dfrtp_2	CLK	0.02004	0.02007	0.02016
	CLK	0.01698	0.01702	0.01708
	RESET_B	0.01510	0.01503	0.01483
	RESET_B	0.02055	0.02050	0.02005
sky130_fd_sc_hs__dfrtp_4	CLK	0.02586	0.02628	0.02645
	CLK	0.02268	0.02314	0.02323
	RESET_B	0.01978	0.02014	0.02191
	RESET_B	0.02617	0.02648	0.02605

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00252	0.00242	0.00236
	(CLK * RESET_B)	0.00063	0.00051	0.00046
	(CLK * !RESET_B)	0.00029	0.00029	0.00028
	(CLK * !RESET_B)	-0.00079	-0.00080	-0.00080
	(!CLK * RESET_B)	0.00749	0.00739	0.00725
	(!CLK * RESET_B)	0.00547	0.00537	0.00524
	(!CLK * !RESET_B)	0.00029	0.00029	0.00028
	(!CLK * !RESET_B)	-0.00079	-0.00080	-0.00080
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00245	0.00235	0.00230
	(CLK * RESET_B)	0.00058	0.00047	0.00042
	(CLK * !RESET_B)	0.00029	0.00029	0.00028
	(CLK * !RESET_B)	-0.00080	-0.00080	-0.00081
	(!CLK * RESET_B)	0.00717	0.00706	0.00694
	(!CLK * RESET_B)	0.00519	0.00509	0.00496
	(!CLK * !RESET_B)	0.00029	0.00029	0.00028
	(!CLK * !RESET_B)	-0.00080	-0.00080	-0.00081
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00254	0.00243	0.00238
	(CLK * RESET_B)	0.00065	0.00053	0.00048
	(CLK * !RESET_B)	0.00030	0.00030	0.00029
	(CLK * !RESET_B)	-0.00080	-0.00080	-0.00081
	(!CLK * RESET_B)	0.00825	0.00815	0.00801
	(!CLK * RESET_B)	0.00624	0.00613	0.00600
	(!CLK * !RESET_B)	0.00030	0.00030	0.00029
	(!CLK * !RESET_B)	-0.00080	-0.00080	-0.00081

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00042	0.00029	0.00026
	(CLK * RESET_B)	0.00231	0.00219	0.00216
	(CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B)	0.00080	0.00081	0.00080
	(!CLK * RESET_B)	0.00462	0.00447	0.00435
	(!CLK * RESET_B)	0.00665	0.00648	0.00637
	(!CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B)	0.00080	0.00081	0.00080
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00042	0.00030	0.00027
	(CLK * RESET_B)	0.00229	0.00217	0.00214
	(CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B)	0.00080	0.00081	0.00081
	(!CLK * RESET_B)	0.00462	0.00446	0.00435
	(!CLK * RESET_B)	0.00660	0.00643	0.00632
	(!CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B)	0.00081	0.00081	0.00081
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00042	0.00030	0.00027
	(CLK * RESET_B)	0.00232	0.00219	0.00216
	(CLK * !RESET_B)	-0.00028	-0.00029	-0.00028
	(CLK * !RESET_B)	0.00081	0.00081	0.00081
	(!CLK * RESET_B)	0.00473	0.00456	0.00444
	(!CLK * RESET_B)	0.00675	0.00658	0.00646
	(!CLK * !RESET_B)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B)	0.00081	0.00081	0.00081

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)	0.00464	0.00455	0.00449
	(CLK * D * !Q)	-0.00083	-0.00095	-0.00099
	(CLK * !D * !Q)	0.00216	0.00218	0.00216
	(CLK * !D * !Q)	-0.00241	-0.00243	-0.00241
	(!CLK * D * !Q)	0.00980	0.00954	0.00935
	(!CLK * D * !Q)	0.00425	0.00399	0.00378
	(!CLK * !D * !Q)	0.00208	0.00211	0.00208
	(!CLK * !D * !Q)	-0.00249	-0.00251	-0.00249
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00454	0.00442	0.00439
	(CLK * D * !Q)	-0.00085	-0.00095	-0.00100
	(CLK * !D * !Q)	0.00214	0.00216	0.00214
	(CLK * !D * !Q)	-0.00237	-0.00239	-0.00238
	(!CLK * D * !Q)	0.00943	0.00917	0.00899
	(!CLK * D * !Q)	0.00397	0.00372	0.00352
	(!CLK * !D * !Q)	0.00207	0.00209	0.00207
	(!CLK * !D * !Q)	-0.00245	-0.00246	-0.00245
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00477	0.00467	0.00462
	(CLK * D * !Q)	-0.00078	-0.00089	-0.00093
	(CLK * !D * !Q)	0.00229	0.00231	0.00229
	(CLK * !D * !Q)	-0.00237	-0.00239	-0.00237
	(!CLK * D * !Q)	0.01050	0.01024	0.01002
	(!CLK * D * !Q)	0.00486	0.00459	0.00437
	(!CLK * !D * !Q)	0.00209	0.00212	0.00210
	(!CLK * !D * !Q)	-0.00257	-0.00259	-0.00257

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)	-0.00119	-0.00134	-0.00138
	(CLK * D * !Q)	0.00427	0.00415	0.00409
	(CLK * !D * !Q)	-0.00214	-0.00218	-0.00216
	(CLK * !D * !Q)	0.00242	0.00243	0.00242
	(!CLK * D * !Q)	0.00354	0.00321	0.00293
	(!CLK * D * !Q)	0.00912	0.00877	0.00849
	(!CLK * !D * !Q)	-0.00206	-0.00211	-0.00208
	(!CLK * !D * !Q)	0.00250	0.00253	0.00250
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00117	-0.00131	-0.00134
	(CLK * D * !Q)	0.00421	0.00409	0.00403
	(CLK * !D * !Q)	-0.00212	-0.00216	-0.00214
	(CLK * !D * !Q)	0.00238	0.00240	0.00238
	(!CLK * D * !Q)	0.00355	0.00323	0.00296
	(!CLK * D * !Q)	0.00903	0.00869	0.00843
	(!CLK * !D * !Q)	-0.00205	-0.00209	-0.00207
	(!CLK * !D * !Q)	0.00245	0.00247	0.00245
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00131	-0.00145	-0.00150
	(CLK * D * !Q)	0.00423	0.00411	0.00406
	(CLK * !D * !Q)	-0.00227	-0.00231	-0.00229
	(CLK * !D * !Q)	0.00238	0.00240	0.00238
	(!CLK * D * !Q)	0.00374	0.00340	0.00311
	(!CLK * D * !Q)	0.00940	0.00905	0.00876
	(!CLK * !D * !Q)	-0.00208	-0.00212	-0.00210
	(!CLK * !D * !Q)	0.00257	0.00261	0.00258

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)	0.00970	0.00936	0.00920
	(D * RESET_B * Q)	0.00669	0.00635	0.00620
	(D * !RESET_B * !Q)	0.01012	0.00977	0.00962
	(D * !RESET_B * !Q)	0.00711	0.00676	0.00662
	(!D * !Q)	0.01012	0.00977	0.00963
	(!D * !Q)	0.00711	0.00676	0.00662
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.00964	0.00930	0.00914
	(D * RESET_B * Q)	0.00664	0.00631	0.00616
	(D * !RESET_B * !Q)	0.01005	0.00969	0.00955
	(D * !RESET_B * !Q)	0.00706	0.00672	0.00657
	(!D * !Q)	0.01005	0.00969	0.00955
	(!D * !Q)	0.00706	0.00671	0.00657
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01017	0.00986	0.00968
	(D * RESET_B * Q)	0.00706	0.00675	0.00657
	(D * !RESET_B * !Q)	0.01051	0.01018	0.01001
	(D * !RESET_B * !Q)	0.00740	0.00709	0.00690
	(!D * !Q)	0.01051	0.01018	0.01000
	(!D * !Q)	0.00740	0.00708	0.00690

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)**	0.00535	0.00508	0.00493
	(D * RESET_B * Q)	0.00835	0.00808	0.00794
	(D * RESET_B * !Q)	0.00994	0.00964	0.00937
	(D * RESET_B * !Q)	0.01282	0.01252	0.01225
	(D * !RESET_B * !Q)	0.00495	0.00468	0.00453
	(D * !RESET_B * !Q)	0.00795	0.00768	0.00753
	(!D * RESET_B * Q)	0.01021	0.00995	0.01008
	(!D * RESET_B * Q)	0.01334	0.01306	0.01321
	(!D * !Q)	0.00495	0.00468	0.00451
	(!D * !Q)	0.00795	0.00767	0.00751
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00537	0.00510	0.00494
	(D * RESET_B * Q)	0.00835	0.00808	0.00794
	(D * RESET_B * !Q)	0.00969	0.00938	0.00911
	(D * RESET_B * !Q)	0.01257	0.01226	0.01200
	(D * !RESET_B * !Q)	0.00497	0.00470	0.00455
	(D * !RESET_B * !Q)	0.00795	0.00768	0.00754
	(!D * RESET_B * Q)	0.01023	0.00996	0.01009
	(!D * RESET_B * Q)	0.01331	0.01304	0.01318
	(!D * !Q)	0.00497	0.00469	0.00453
	(!D * !Q)	0.00795	0.00767	0.00751
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00557	0.00530	0.00515
	(D * RESET_B * Q)	0.00867	0.00840	0.00826
	(D * RESET_B * !Q)	0.01099	0.01069	0.01037
	(D * RESET_B * !Q)	0.01397	0.01366	0.01336
	(D * !RESET_B * !Q)	0.00525	0.00498	0.00481
	(D * !RESET_B * !Q)	0.00835	0.00807	0.00792
	(!D * RESET_B * Q)	0.01049	0.01022	0.01037
	(!D * RESET_B * Q)	0.01371	0.01344	0.01359
	(!D * !Q)	0.00525	0.00497	0.00482
	(!D * !Q)	0.00835	0.00807	0.00793

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	SET_B	CLK	Q	Q_N
0	1	R	0	1
1	1	R	1	0
x	0	x	1	0
x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfsbp_1	39.96000
sky130_fd_sc_hs__dfsbp_2	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfsbp_1	0.00162	0.00308	0.00280	0.35584	0.34144
sky130_fd_sc_hs__dfsbp_2	0.00162	0.00310	0.00281	0.72202	0.70142

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.00088	0.00111
sky130_fd_sc_hs__dfsbp_2	0.00000	0.00105	0.00125

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)	0.84264	1.82822	9.33065
	SET_B->Q (FR)	0.92112	2.22159	13.58220
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	1.01859	1.81874	9.46250
	SET_B->Q (FR)	1.11942	2.23171	13.87590

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.61089	1.09611	3.49083
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.69253	1.15748	3.60237

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)	0.52443	1.56724	9.08249
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.52013	1.40355	9.07941

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)	0.63400	1.28439	3.71403
	SET_B->Q_N (FF)	0.69583	1.67572	8.02626
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.73028	1.38514	3.89255
	SET_B->Q_N (FF)	0.80849	1.79644	8.34948

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)	-0.08077	-0.18955	-1.09578
	setup	CLK (R)	0.18701	0.26920	1.19596
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07950	-0.18538	-1.08378
	setup	CLK (R)	0.17161	0.25682	1.17781

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)	-0.11483	-0.35914	-4.14583
	setup	CLK (R)	0.82892	0.92563	4.89913
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.13124	-0.37834	-4.20240
	setup	CLK (R)	0.80641	0.90851	4.87769

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)	-0.08077	-0.18955	-1.09578
	setup	CLK (R)	0.18701	0.26920	1.19596
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.07950	-0.18538	-1.08378
	setup	CLK (R)	0.17161	0.25682	1.17781

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)	-0.11483	-0.35914	-4.14583
	setup	CLK (R)	0.82892	0.92563	4.89913
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.13124	-0.37834	-4.20240
	setup	CLK (R)	0.80641	0.90851	4.87769

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)	-0.27105	-0.34634	-0.89981
	removal	CLK (R)	0.30533	0.37524	0.92173
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.27262	-0.34458	-0.90782
	removal	CLK (R)	0.30249	0.37604	0.94013

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)	-0.27105	-0.34634	-0.89981
	removal	CLK (R)	0.30533	0.37524	0.92173
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.27262	-0.34458	-0.90782
	removal	CLK (R)	0.30249	0.37604	0.94013

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 ()	0.66596	1.38867	16.50020
	min_pulse_width	SET_B ()	0.75384	1.51999	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.73550	1.45820	16.50020
	min_pulse_width	SET_B ()	0.93973	1.69766	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 ()	0.57131	1.04492	16.50020
	min_pulse_width	CLK ()	0.24283	1.04492	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.73937	1.04492	16.50020
	min_pulse_width	CLK ()	0.26193	1.04492	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 ()	0.45291	1.04492	16.50020
	min_pulse_width	CLK ()	0.97591	1.14921	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.43763	1.04492	16.50020
	min_pulse_width	CLK ()	0.94945	1.13762	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	0.01003	0.00996	0.00989
	CLK	0.00857	0.00851	0.00845
	SET_B	0.00910	0.00921	0.00946
	SET_B	0.01048	0.01058	0.01037
sky130_fd_sc_hs__dfsbp_2	CLK	0.01164	0.01176	0.01178
	CLK	0.01017	0.01030	0.01033
	SET_B	0.01064	0.01095	0.01170
	SET_B	0.01198	0.01228	0.01219

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01052	0.01047	0.01026
	CLK	0.00915	0.00911	0.00889
sky130_fd_sc_hs__dfsbp_2	CLK	0.01224	0.01240	0.01217
	CLK	0.01083	0.01100	0.01077

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01054	0.01046	0.01051
	CLK	0.00917	0.00913	0.00915
sky130_fd_sc_hs__dfsbp_2	CLK	0.01226	0.01241	0.01250
	CLK	0.01085	0.01101	0.01112

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01002	0.00995	0.00969
	CLK	0.00856	0.00850	0.00825
	SET_B	0.00908	0.00919	0.00880
	SET_B	0.01046	0.01056	0.01015
sky130_fd_sc_hs__dfsbp_2	CLK	0.01163	0.01175	0.01145
	CLK	0.01016	0.01029	0.00999
	SET_B	0.01062	0.01093	0.01053
	SET_B	0.01197	0.01226	0.01186

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00227	0.00216	0.00211
	CLK	0.00058	0.00047	0.00042
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00661	0.00650	0.00638
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00474	0.00463	0.00451
	(!CLK * !SET_B * Q * !Q_N)	0.00512	0.00505	0.00498
	(!CLK * !SET_B * Q * !Q_N)	0.00317	0.00310	0.00304
sky130_fd_sc_hs__dfsbp_2	CLK	0.00226	0.00215	0.00210
	CLK	0.00057	0.00046	0.00041
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00653	0.00642	0.00630
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00459	0.00449	0.00437
	(!CLK * !SET_B * Q * !Q_N)	0.00510	0.00503	0.00497
	(!CLK * !SET_B * Q * !Q_N)	0.00310	0.00304	0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00028	0.00018	0.00016
	CLK	0.00196	0.00187	0.00185
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00481	0.00469	0.00461
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00668	0.00656	0.00647
	(!CLK * !SET_B * Q * !Q_N)	0.00283	0.00271	0.00268
	(!CLK * !SET_B * Q * !Q_N)	0.00478	0.00466	0.00463
sky130_fd_sc_hs__dfsbp_2	CLK	0.00027	0.00018	0.00016
	CLK	0.00196	0.00187	0.00185
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00459	0.00447	0.00440
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00654	0.00641	0.00634
	(!CLK * !SET_B * Q * !Q_N)	0.00272	0.00260	0.00257
	(!CLK * !SET_B * Q * !Q_N)	0.00472	0.00460	0.00457

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)	0.00164	0.00165	0.00164
	(CLK * Q * !Q_N)	-0.00136	-0.00136	-0.00136
	(!CLK * D * Q * !Q_N)	0.00180	0.00182	0.00181
	(!CLK * D * Q * !Q_N)	-0.00119	-0.00120	-0.00119
	(!CLK * !D * Q * !Q_N)	0.00334	0.00330	0.00327
	(!CLK * !D * Q * !Q_N)	0.00024	0.00017	0.00015
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00165	0.00168	0.00166
	(CLK * Q * !Q_N)	-0.00131	-0.00132	-0.00131
	(!CLK * D * Q * !Q_N)	0.00178	0.00180	0.00179
	(!CLK * D * Q * !Q_N)	-0.00118	-0.00119	-0.00119
	(!CLK * !D * Q * !Q_N)	0.00320	0.00316	0.00312
	(!CLK * !D * Q * !Q_N)	0.00012	0.00006	0.00005

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	(CLK * Q * !Q_N)	-0.00163	-0.00165	-0.00164
	(CLK * Q * !Q_N)	0.00136	0.00137	0.00136
	(!CLK * D * Q * !Q_N)	-0.00179	-0.00182	-0.00181
	(!CLK * D * Q * !Q_N)	0.00119	0.00120	0.00119
	(!CLK * !D * Q * !Q_N)	-0.00015	-0.00023	-0.00025
	(!CLK * !D * Q * !Q_N)	0.00295	0.00289	0.00287
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00165	-0.00167	-0.00166
	(CLK * Q * !Q_N)	0.00132	0.00132	0.00132
	(!CLK * D * Q * !Q_N)	-0.00178	-0.00180	-0.00179
	(!CLK * D * Q * !Q_N)	0.00119	0.00120	0.00119
	(!CLK * !D * Q * !Q_N)	-0.00012	-0.00019	-0.00020
	(!CLK * !D * Q * !Q_N)	0.00295	0.00289	0.00287

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)	0.00998	0.00964	0.00949
	(D * Q * !Q_N)	0.00717	0.00681	0.00666
	(!D * SET_B * !Q * Q_N)	0.00984	0.00949	0.00934
	(!D * SET_B * !Q * Q_N)	0.00703	0.00666	0.00651
	(!D * !SET_B * Q * !Q_N)	0.01666	0.01642	0.01652
	(!D * !SET_B * Q * !Q_N)	0.01357	0.01334	0.01343
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.00986	0.00952	0.00937
	(D * Q * !Q_N)	0.00700	0.00664	0.00649
	(!D * SET_B * !Q * Q_N)	0.00980	0.00944	0.00929
	(!D * SET_B * !Q * Q_N)	0.00694	0.00656	0.00641
	(!D * !SET_B * Q * !Q_N)	0.01643	0.01619	0.01632
	(!D * !SET_B * Q * !Q_N)	0.01323	0.01301	0.01313

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)	0.01002	0.00973	0.00946
	(D * SET_B * !Q * Q_N)	0.01266	0.01237	0.01211
	(D * Q * !Q_N)	0.00588	0.00563	0.00549
	(D * Q * !Q_N)	0.00870	0.00845	0.00832
	(!D * SET_B * Q * !Q_N)	0.01145	0.01121	0.01132
	(!D * SET_B * Q * !Q_N)	0.01445	0.01420	0.01433
	(!D * SET_B * !Q * Q_N)	0.00601	0.00575	0.00561
	(!D * SET_B * !Q * Q_N)	0.00883	0.00857	0.00844
	(!D * !SET_B * Q * !Q_N)	0.00951	0.00925	0.00934
	(!D * !SET_B * Q * !Q_N)	0.01259	0.01233	0.01241
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.00984	0.00954	0.00928
	(D * SET_B * !Q * Q_N)	0.01247	0.01217	0.01192
	(D * Q * !Q_N)	0.00580	0.00554	0.00540
	(D * Q * !Q_N)	0.00867	0.00841	0.00828
	(!D * SET_B * Q * !Q_N)	0.01113	0.01089	0.01098
	(!D * SET_B * Q * !Q_N)	0.01425	0.01400	0.01411
	(!D * SET_B * !Q * Q_N)	0.00586	0.00560	0.00546
	(!D * SET_B * !Q * Q_N)	0.00873	0.00847	0.00833
	(!D * !SET_B * Q * !Q_N)	0.00927	0.00902	0.00910
	(!D * !SET_B * Q * !Q_N)	0.01245	0.01220	0.01228

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	SET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	1
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfstp_1	36.76320
sky130_fd_sc_hs__dfstp_2	39.96000
sky130_fd_sc_hs__dfstp_4	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	SET_B	CLK	Q
sky130_fd_sc_hs__dfstp_1	0.00162	0.00314	0.00279	0.36167
sky130_fd_sc_hs__dfstp_2	0.00162	0.00292	0.00281	0.71557
sky130_fd_sc_hs__dfstp_4	0.00161	0.00295	0.00282	1.38830

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfstp_1	0.00000	0.00080	0.00107
sky130_fd_sc_hs__dfstp_2	0.00000	0.00090	0.00116
sky130_fd_sc_hs__dfstp_4	0.00000	0.00102	0.00136

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)	0.64512	1.65109	9.12627
	SET_B->Q (FR)	0.72409	2.04577	13.18660
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.66575	1.51973	9.15054
	SET_B->Q (FR)	0.74916	1.92212	13.26360
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.77770	1.52152	9.30144
	SET_B->Q (FR)	0.85538	1.91646	13.48200

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.57580	1.05765	3.47380
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.62531	1.09756	3.54274
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.63732	1.09115	3.56739

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)	-0.08106	-0.18628	-1.08390
	setup	CLK (R)	0.18606	0.26364	1.17535
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08419	-0.18984	-1.09741
	setup	CLK (R)	0.18954	0.26816	1.19357
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07945	-0.18552	-1.07689
	setup	CLK (R)	0.17361	0.25731	1.16267

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)	-0.10155	-0.34463	-4.12095
	setup	CLK (R)	0.80540	0.89964	4.87631
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.10319	-0.34516	-4.12916
	setup	CLK (R)	0.81261	0.90727	4.89249
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.11260	-0.36045	-4.15604
	setup	CLK (R)	0.79157	0.89265	4.86241

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)	-0.08106	-0.18628	-1.08390
	setup	CLK (R)	0.18606	0.26364	1.17535
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.08419	-0.18984	-1.09741
	setup	CLK (R)	0.18954	0.26816	1.19357
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.07945	-0.18552	-1.07689
	setup	CLK (R)	0.17361	0.25731	1.16267

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)	-0.10155	-0.34463	-4.12095
	setup	CLK (R)	0.80540	0.89964	4.87631
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.10319	-0.34516	-4.12916
	setup	CLK (R)	0.81261	0.90727	4.89249
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.11260	-0.36045	-4.15604
	setup	CLK (R)	0.79157	0.89265	4.86241

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)	-0.26998	-0.34594	-0.90592
	removal	CLK (R)	0.29845	0.36826	0.93413
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.27746	-0.34946	-0.90906
	removal	CLK (R)	0.30274	0.37347	0.92875
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.27072	-0.34174	-0.88630
	removal	CLK (R)	0.29692	0.36495	0.90430

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)	-0.26998	-0.34594	-0.90592
	removal	CLK (R)	0.29845	0.36826	0.93413
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.27746	-0.34946	-0.90906
	removal	CLK (R)	0.30274	0.37347	0.92875
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.27072	-0.34174	-0.88630
	removal	CLK (R)	0.29692	0.36495	0.90430

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 ()	0.56875	1.29598	16.50020
	min_pulse_width	SET_B ()	0.55976	1.33460	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.59614	1.31529	16.50020
	min_pulse_width	SET_B ()	0.60474	1.36550	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.62672	1.34619	16.50020
	min_pulse_width	SET_B ()	0.67455	1.43116	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 ()	0.38797	1.04492	16.50020
	min_pulse_width	CLK ()	0.22374	1.04492	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.41471	1.04492	16.50020
	min_pulse_width	CLK ()	0.23138	1.04492	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.50256	1.04492	16.50020
	min_pulse_width	CLK ()	0.23519	1.04492	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 ()	0.45291	1.04492	16.50020
	min_pulse_width	CLK ()	0.94002	1.13376	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.45291	1.04492	16.50020
	min_pulse_width	CLK ()	0.94736	1.13762	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.44145	1.04492	16.50020
	min_pulse_width	CLK ()	0.92335	1.12603	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	0.01728	0.01696	0.01672
	CLK	0.01450	0.01418	0.01395
	SET_B	0.01520	0.01525	0.01473
	SET_B	0.01817	0.01821	0.01768
sky130_fd_sc_hs__dfstp_2	CLK	0.01954	0.01938	0.01923
	CLK	0.01663	0.01647	0.01640
	SET_B	0.01751	0.01775	0.01730
	SET_B	0.02021	0.02043	0.01998
sky130_fd_sc_hs__dfstp_4	CLK	0.02410	0.02419	0.02430
	CLK	0.02116	0.02125	0.02151
	SET_B	0.02198	0.02252	0.02230
	SET_B	0.02470	0.02523	0.02500

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.01883	0.01856	0.01844
	CLK	0.01591	0.01566	0.01552
sky130_fd_sc_hs__dfstp_2	CLK	0.02072	0.02067	0.02063
	CLK	0.01789	0.01786	0.01779
sky130_fd_sc_hs__dfstp_4	CLK	0.02553	0.02591	0.02596
	CLK	0.02269	0.02311	0.02311

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00227	0.00216	0.00211
	CLK	0.00059	0.00048	0.00043
	(!CLK * SET_B)	0.00652	0.00642	0.00630
	(!CLK * SET_B)	0.00466	0.00456	0.00444
	(!CLK * !SET_B * Q)	0.00508	0.00501	0.00495
	(!CLK * !SET_B * Q)	0.00313	0.00306	0.00300
sky130_fd_sc_hs__dfstp_2	CLK	0.00229	0.00218	0.00213
	CLK	0.00060	0.00049	0.00044
	(!CLK * SET_B)	0.00652	0.00641	0.00629
	(!CLK * SET_B)	0.00465	0.00455	0.00443
	(!CLK * !SET_B * Q)	0.00507	0.00501	0.00494
	(!CLK * !SET_B * Q)	0.00311	0.00304	0.00298
sky130_fd_sc_hs__dfstp_4	CLK	0.00228	0.00217	0.00212
	CLK	0.00060	0.00049	0.00044
	(!CLK * SET_B)	0.00649	0.00639	0.00626
	(!CLK * SET_B)	0.00461	0.00451	0.00439
	(!CLK * !SET_B * Q)	0.00502	0.00495	0.00488
	(!CLK * !SET_B * Q)	0.00307	0.00300	0.00293

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00034	0.00025	0.00023
	CLK	0.00202	0.00193	0.00191
	(!CLK * SET_B)	0.00461	0.00449	0.00441
	(!CLK * SET_B)	0.00647	0.00635	0.00627
	(!CLK * !SET_B * Q)	0.00273	0.00262	0.00259
	(!CLK * !SET_B * Q)	0.00469	0.00457	0.00454
sky130_fd_sc_hs__dfstp_2	CLK	0.00033	0.00024	0.00022
	CLK	0.00202	0.00193	0.00191
	(!CLK * SET_B)	0.00476	0.00464	0.00457
	(!CLK * SET_B)	0.00663	0.00651	0.00643
	(!CLK * !SET_B * Q)	0.00289	0.00277	0.00274
	(!CLK * !SET_B * Q)	0.00486	0.00474	0.00471
sky130_fd_sc_hs__dfstp_4	CLK	0.00034	0.00026	0.00023
	CLK	0.00203	0.00194	0.00191
	(!CLK * SET_B)	0.00454	0.00442	0.00434
	(!CLK * SET_B)	0.00642	0.00630	0.00622
	(!CLK * !SET_B * Q)	0.00272	0.00260	0.00258
	(!CLK * !SET_B * Q)	0.00468	0.00456	0.00453

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00156	0.00158	0.00156
	(CLK * Q)	-0.00149	-0.00150	-0.00149
	(!CLK * D * Q)	0.00170	0.00170	0.00170
	(!CLK * D * Q)	-0.00135	-0.00135	-0.00135
	(!CLK * !D * Q)	0.00317	0.00313	0.00309
	(!CLK * !D * Q)	-0.00001	-0.00008	-0.00010
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00152	0.00155	0.00153
	(CLK * Q)	-0.00135	-0.00137	-0.00136
	(!CLK * D * Q)	0.00166	0.00168	0.00167
	(!CLK * D * Q)	-0.00122	-0.00123	-0.00123
	(!CLK * !D * Q)	0.00314	0.00311	0.00306
	(!CLK * !D * Q)	0.00012	0.00005	0.00003
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00162	0.00164	0.00162
	(CLK * Q)	-0.00132	-0.00133	-0.00132
	(!CLK * D * Q)	0.00174	0.00176	0.00175
	(!CLK * D * Q)	-0.00120	-0.00121	-0.00120
	(!CLK * !D * Q)	0.00316	0.00311	0.00308
	(!CLK * !D * Q)	0.00010	0.00004	0.00002

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00155	-0.00157	-0.00156
	(CLK * Q)	0.00149	0.00150	0.00149
	(!CLK * D * Q)	-0.00169	-0.00170	-0.00170
	(!CLK * D * Q)	0.00135	0.00136	0.00136
	(!CLK * !D * Q)	-0.00006	-0.00014	-0.00015
	(!CLK * !D * Q)	0.00312	0.00305	0.00302
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00152	-0.00154	-0.00153
	(CLK * Q)	0.00136	0.00137	0.00136
	(!CLK * D * Q)	-0.00166	-0.00168	-0.00167
	(!CLK * D * Q)	0.00123	0.00124	0.00123
	(!CLK * !D * Q)	-0.00001	-0.00009	-0.00010
	(!CLK * !D * Q)	0.00302	0.00295	0.00292
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00161	-0.00163	-0.00162
	(CLK * Q)	0.00133	0.00133	0.00133
	(!CLK * D * Q)	-0.00173	-0.00175	-0.00175
	(!CLK * D * Q)	0.00120	0.00121	0.00121
	(!CLK * !D * Q)	-0.00004	-0.00011	-0.00013
	(!CLK * !D * Q)	0.00302	0.00295	0.00293

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.00987	0.00952	0.00937
	(D * Q)	0.00704	0.00668	0.00652
	(!D * SET_B * !Q)	0.00983	0.00947	0.00932
	(!D * SET_B * !Q)	0.00700	0.00663	0.00647
	(!D * !SET_B * Q)	0.01624	0.01601	0.01616
	(!D * !SET_B * Q)	0.01312	0.01289	0.01305
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01001	0.00966	0.00951
	(D * Q)	0.00716	0.00679	0.00664
	(!D * SET_B * !Q)	0.00988	0.00951	0.00936
	(!D * SET_B * !Q)	0.00702	0.00664	0.00649
	(!D * !SET_B * Q)	0.01647	0.01620	0.01634
	(!D * !SET_B * Q)	0.01332	0.01306	0.01320
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.00989	0.00955	0.00939
	(D * Q)	0.00702	0.00666	0.00650
	(!D * SET_B * !Q)	0.00988	0.00951	0.00936
	(!D * SET_B * !Q)	0.00700	0.00662	0.00647
	(!D * !SET_B * Q)	0.01614	0.01591	0.01603
	(!D * !SET_B * Q)	0.01296	0.01274	0.01288

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)**	0.00997	0.00968	0.00940
	(D * SET_B * !Q)	0.01264	0.01235	0.01208
	(D * Q)	0.00591	0.00566	0.00551
	(D * Q)	0.00875	0.00849	0.00835
	(!D * SET_B * Q)	0.01113	0.01089	0.01099
	(!D * SET_B * Q)	0.01415	0.01390	0.01402
	(!D * SET_B * !Q)	0.00594	0.00568	0.00553
	(!D * SET_B * !Q)	0.00878	0.00852	0.00837
	(!D * !SET_B * Q)	0.00930	0.00904	0.00912
	(!D * !SET_B * Q)	0.01241	0.01214	0.01223
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.00990	0.00961	0.00934
	(D * SET_B * !Q)	0.01259	0.01230	0.01204
	(D * Q)	0.00581	0.00556	0.00541
	(D * Q)	0.00868	0.00842	0.00828
	(!D * SET_B * Q)	0.01122	0.01098	0.01109
	(!D * SET_B * Q)	0.01427	0.01402	0.01414
	(!D * SET_B * !Q)	0.00594	0.00568	0.00553
	(!D * SET_B * !Q)	0.00881	0.00854	0.00840
	(!D * !SET_B * Q)	0.00940	0.00914	0.00922
	(!D * !SET_B * Q)	0.01254	0.01227	0.01237
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.00986	0.00957	0.00930
	(D * SET_B * !Q)	0.01255	0.01226	0.01200
	(D * Q)	0.00585	0.00560	0.00545
	(D * Q)	0.00873	0.00848	0.00834
	(!D * SET_B * Q)	0.01096	0.01072	0.01084
	(!D * SET_B * Q)	0.01405	0.01380	0.01393
	(!D * SET_B * !Q)	0.00586	0.00560	0.00545
	(!D * SET_B * !Q)	0.00875	0.00848	0.00834
	(!D * !SET_B * Q)	0.00920	0.00894	0.00902
	(!D * !SET_B * Q)	0.01236	0.01210	0.01219

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT	
D	CLK	Q	Q_N
0	R	0	1
1	R	1	0
x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxbp_1	31.96800
sky130_fd_sc_hs__dfxbp_2	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	CLK	Q	Q_N
sky130_fd_sc_hs__dfxbp_1	0.00165	0.00280	0.35668	0.35449
sky130_fd_sc_hs__dfxbp_2	0.00160	0.00281	0.67092	0.71787

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.00079	0.00087
sky130_fd_sc_hs__dfxbp_2	0.00000	0.00096	0.00107

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)	0.53511	1.54570	9.08302
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.66086	1.53631	9.21145

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.61750	1.14527	3.59818
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.58604	1.07763	3.47783

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)	0.73579	1.74360	9.25806
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.73089	1.57759	9.26925

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)	0.62398	1.10777	3.50289
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.82293	1.28975	3.75135

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)	-0.03701	-0.09762	-0.54059
	setup	CLK (R)	0.20733	0.21804	0.82141
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.03185	-0.08422	-0.47162
	setup	CLK (R)	0.18030	0.19470	0.73231

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)	-0.08555	-0.31039	-3.78905
	setup	CLK (R)	0.59036	0.69962	4.41346
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.09500	-0.30484	-3.80789
	setup	CLK (R)	0.57806	0.69161	4.36305

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 ()	0.27339	1.04492	16.50020
	min_pulse_width	CLK ()	0.20464	1.04492	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.38415	1.04492	16.50020
	min_pulse_width	CLK ()	0.20082	1.04492	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 ()	0.48728	1.04492	16.50020
	min_pulse_width	CLK ()	0.77270	1.04878	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.47200	1.04492	16.50020
	min_pulse_width	CLK ()	0.77547	1.05265	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	0.00976	0.00956	0.00944
	CLK	0.00842	0.00826	0.00810
sky130_fd_sc_hs__dfxbp_2	CLK	0.01193	0.01197	0.01188
	CLK	0.01057	0.01061	0.01055

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01003	0.01002	0.00985
	CLK	0.00869	0.00868	0.00851
sky130_fd_sc_hs__dfxbp_2	CLK	0.01242	0.01260	0.01237
	CLK	0.01106	0.01124	0.01102

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01003	0.01002	0.01007
	CLK	0.00869	0.00868	0.00874
sky130_fd_sc_hs__dfxbp_2	CLK	0.01243	0.01260	0.01268
	CLK	0.01106	0.01125	0.01135

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00976	0.00955	0.00922
	CLK	0.00841	0.00826	0.00788
sky130_fd_sc_hs__dfxbp_2	CLK	0.01192	0.01197	0.01154
	CLK	0.01056	0.01061	0.01018

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00164	0.00154	0.00150
	CLK	-0.00007	-0.00018	-0.00022
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00597	0.00584	0.00574
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00426	0.00413	0.00403
sky130_fd_sc_hs__dfxbp_2	CLK	0.00153	0.00143	0.00140
	CLK	-0.00013	-0.00024	-0.00027
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00587	0.00574	0.00565
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00420	0.00408	0.00398

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00004	-0.00010	-0.00012
	CLK	0.00168	0.00162	0.00160
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00342	0.00330	0.00320
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00514	0.00502	0.00492
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00004	-0.00010	-0.00012
	CLK	0.00162	0.00156	0.00155
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00315	0.00304	0.00295
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00482	0.00470	0.00461

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)	0.00890	0.00861	0.00842
	(D * Q * !Q_N)	0.00622	0.00593	0.00573
	(!D * !Q * Q_N)	0.00908	0.00879	0.00860
	(!D * !Q * Q_N)	0.00640	0.00610	0.00591
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00895	0.00868	0.00844
	(D * Q * !Q_N)	0.00623	0.00595	0.00572
	(!D * !Q * Q_N)	0.00904	0.00876	0.00854
	(!D * !Q * Q_N)	0.00632	0.00603	0.00582

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)	0.00678	0.00648	0.00632
	(D * Q * !Q_N)	0.00947	0.00916	0.00901
	(D * !Q * Q_N)	0.01082	0.01046	0.01011
	(D * !Q * Q_N)	0.01351	0.01314	0.01280
	(!D * Q * !Q_N)	0.01118	0.01086	0.01099
	(!D * Q * !Q_N)	0.01388	0.01354	0.01368
	(!D * !Q * Q_N)	0.00654	0.00623	0.00607
	(!D * !Q * Q_N)	0.00923	0.00891	0.00876
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00676	0.00646	0.00630
	(D * Q * !Q_N)	0.00950	0.00918	0.00903
	(D * !Q * Q_N)	0.01091	0.01054	0.01019
	(D * !Q * Q_N)	0.01364	0.01326	0.01293
	(!D * Q * !Q_N)	0.01085	0.01053	0.01064
	(!D * Q * !Q_N)	0.01358	0.01325	0.01337
	(!D * !Q * Q_N)	0.00662	0.00631	0.00615
	(!D * !Q * Q_N)	0.00936	0.00903	0.00888

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
D	CLK	Q
0	R	0
1	R	1
x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxtp_1	27.17280
sky130_fd_sc_hs__dfxtp_2	28.77120
sky130_fd_sc_hs__dfxtp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	CLK	Q
sky130_fd_sc_hs__dfxtp_1	0.00161	0.00281	0.35700
sky130_fd_sc_hs__dfxtp_2	0.00166	0.00280	0.72327
sky130_fd_sc_hs__dfxtp_4	0.00165	0.00281	1.38980

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.00064	0.00077
sky130_fd_sc_hs__dfxtp_2	0.00000	0.00074	0.00087
sky130_fd_sc_hs__dfxtp_4	0.00000	0.00088	0.00106

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)**	0.48899	1.50478	9.05972
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.51687	1.37735	9.12829
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.62073	1.37031	9.23442

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.57918	1.08952	3.56719
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.61108	1.10957	3.62229
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.61931	1.09438	3.65384

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)	-0.03790	-0.09662	-0.53583
	setup	CLK (R)	0.21247	0.22159	0.81724
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03660	-0.09440	-0.51488
	setup	CLK (R)	0.20984	0.22013	0.78825
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03261	-0.08951	-0.48454
	setup	CLK (R)	0.19660	0.20868	0.77051

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)	-0.09116	-0.31794	-3.83713
	setup	CLK (R)	0.61597	0.72752	4.44920
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.08414	-0.30049	-3.74331
	setup	CLK (R)	0.57473	0.68082	4.36831
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.08975	-0.29629	-3.73268
	setup	CLK (R)	0.57686	0.68159	4.35357

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 ()	0.24665	1.04492	16.50020
	min_pulse_width	CLK ()	0.20082	1.04492	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.27339	1.04492	16.50020
	min_pulse_width	CLK ()	0.20082	1.04492	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.35360	1.04492	16.50020
	min_pulse_width	CLK ()	0.21228	1.04492	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 ()	0.50638	1.04492	16.50020
	min_pulse_width	CLK ()	0.79548	1.06423	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.49874	1.04492	16.50020
	min_pulse_width	CLK ()	0.76777	1.05265	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.49110	1.04492	16.50020
	min_pulse_width	CLK ()	0.77825	1.05651	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	0.01510	0.01475	0.01442
	CLK	0.01237	0.01203	0.01174
sky130_fd_sc_hs__dfxtp_2	CLK	0.01704	0.01681	0.01654
	CLK	0.01429	0.01408	0.01386
sky130_fd_sc_hs__dfxtp_4	CLK	0.02130	0.02139	0.02131
	CLK	0.01859	0.01867	0.01877

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01576	0.01556	0.01567
	CLK	0.01303	0.01286	0.01294
sky130_fd_sc_hs__dfxtp_2	CLK	0.01750	0.01758	0.01769
	CLK	0.01476	0.01486	0.01493
sky130_fd_sc_hs__dfxtp_4	CLK	0.02229	0.02280	0.02296
	CLK	0.01958	0.02011	0.02020

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00151	0.00141	0.00137
	CLK	-0.00016	-0.00027	-0.00031
	!CLK	0.00587	0.00574	0.00564
	!CLK	0.00419	0.00407	0.00396
sky130_fd_sc_hs__dfxtp_2	CLK	0.00162	0.00152	0.00147
	CLK	-0.00010	-0.00021	-0.00024
	!CLK	0.00581	0.00568	0.00557
	!CLK	0.00409	0.00396	0.00385
sky130_fd_sc_hs__dfxtp_4	CLK	0.00152	0.00142	0.00138
	CLK	-0.00019	-0.00029	-0.00033
	!CLK	0.00580	0.00568	0.00557
	!CLK	0.00410	0.00396	0.00386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00023	0.00016	0.00014
	CLK	0.00190	0.00183	0.00182
	!CLK	0.00369	0.00357	0.00347
	!CLK	0.00537	0.00524	0.00515
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00007	-0.00013	-0.00015
	CLK	0.00164	0.00159	0.00157
	!CLK	0.00348	0.00336	0.00327
	!CLK	0.00521	0.00508	0.00498
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00003	-0.00009	-0.00011
	CLK	0.00167	0.00162	0.00160
	!CLK	0.00343	0.00331	0.00321
	!CLK	0.00514	0.00501	0.00492

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00894	0.00861	0.00841
	(D * Q)	0.00622	0.00589	0.00570
	(!D * !Q)	0.00926	0.00898	0.00874
	(!D * !Q)	0.00655	0.00625	0.00602
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00898	0.00869	0.00845
	(D * Q)	0.00624	0.00595	0.00572
	(!D * !Q)	0.00922	0.00893	0.00869
	(!D * !Q)	0.00649	0.00619	0.00597
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00891	0.00863	0.00840
	(D * Q)	0.00621	0.00592	0.00570
	(!D * !Q)	0.00916	0.00888	0.00866
	(!D * !Q)	0.00646	0.00618	0.00595

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00706	0.00677	0.00660
	(D * Q)	0.00979	0.00948	0.00932
	(D * !Q)	0.01105	0.01070	0.01034
	(D * !Q)	0.01378	0.01341	0.01306
	(!D * Q)	0.01144	0.01113	0.01125
	(!D * Q)	0.01417	0.01384	0.01398
	(!D * !Q)	0.00669	0.00639	0.00621
	(!D * !Q)	0.00942	0.00910	0.00894
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00692	0.00662	0.00645
	(D * Q)	0.00967	0.00935	0.00920
	(D * !Q)	0.01080	0.01044	0.01008
	(D * !Q)	0.01354	0.01317	0.01282
	(!D * Q)	0.01135	0.01103	0.01116
	(!D * Q)	0.01409	0.01376	0.01390
	(!D * !Q)	0.00662	0.00632	0.00615
	(!D * !Q)	0.00936	0.00905	0.00889
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00719	0.00689	0.00672
	(D * Q)	0.00990	0.00958	0.00942
	(D * !Q)	0.01109	0.01073	0.01037
	(D * !Q)	0.01381	0.01343	0.01307
	(!D * Q)	0.01161	0.01129	0.01144
	(!D * Q)	0.01432	0.01399	0.01414
	(!D * !Q)	0.00687	0.00657	0.00639
	(!D * !Q)	0.00958	0.00926	0.00910

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__diode_2	0.00000

Pin Capacitance Information
Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__diode_2	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DLCLKPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
GATE	CLK	GCLK
x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlclkp_1	22.37760
sky130_fd_sc_hs__dlclkp_2	25.57440
sky130_fd_sc_hs__dlclkp_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	GATE	CLK	GCLK
sky130_fd_sc_hs__dlclkp_1	0.00242	0.00414	0.36607
sky130_fd_sc_hs__dlclkp_2	0.00241	0.00448	0.73365
sky130_fd_sc_hs__dlclkp_4	0.00238	0.00468	1.41724

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.00045	0.00047
sky130_fd_sc_hs__dlclkp_2	0.00000	0.00057	0.00062
sky130_fd_sc_hs__dlclkp_4	0.00000	0.00071	0.00075

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)**	0.16097	1.14860	8.66188
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.15768	1.00873	8.79717
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.21156	0.99133	9.10046

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.22487	0.99282	5.87701
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.26387	1.04118	6.36102
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.37916	1.16864	7.02800

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)	-0.06193	-0.15123	-0.97535
	setup	CLK (R)	0.31136	0.31643	1.19928
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.06179	-0.15123	-0.96132
	setup	CLK (R)	0.33039	0.32352	1.14672
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.06092	-0.14801	-0.95253
	setup	CLK (R)	0.32482	0.30377	1.08527

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)	-0.26490	-0.41334	-3.85920
	setup	CLK (R)	0.39082	0.55519	4.04493
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.25881	-0.40660	-3.83752
	setup	CLK (R)	0.38524	0.53839	3.96177
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.26190	-0.40660	-3.84753
	setup	CLK (R)	0.35530	0.47770	3.92962

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 ()	0.11297	1.04492	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.12443	1.04492	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.17408	1.04492	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 ()	0.52548	1.04492	16.50020
	min_pulse_width	CLK ()	0.55985	1.04492	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.55985	1.04492	16.50020
	min_pulse_width	CLK ()	0.57131	1.04492	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.55221	1.04492	16.50020
	min_pulse_width	CLK ()	0.55193	1.11444	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	0.01095	0.01063	0.01046
	CLK	0.00664	0.00631	0.00615
sky130_fd_sc_hs__dlclkp_2	CLK	0.01315	0.01297	0.01285
	CLK	0.00852	0.00832	0.00823
sky130_fd_sc_hs__dlclkp_4	CLK	0.01713	0.01717	0.01726
	CLK	0.01237	0.01241	0.01260

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01237	0.01206	0.01202
	CLK	0.01677	0.01644	0.01623
sky130_fd_sc_hs__dlclkp_2	CLK	0.01449	0.01434	0.01514
	CLK	0.01918	0.01902	0.01885
sky130_fd_sc_hs__dlclkp_4	CLK	0.01876	0.01900	0.01904
	CLK	0.02348	0.02370	0.02369

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00104	0.00104	0.00103
	CLK	-0.00116	-0.00118	-0.00118
	(!CLK * !GCLK)	0.00772	0.00755	0.00739
	(!CLK * !GCLK)	0.00537	0.00519	0.00503
sky130_fd_sc_hs__dlclkp_2	CLK	0.00090	0.00091	0.00090
	CLK	-0.00130	-0.00132	-0.00131
	(!CLK * !GCLK)	0.00781	0.00766	0.00749
	(!CLK * !GCLK)	0.00548	0.00531	0.00515
sky130_fd_sc_hs__dlclkp_4	CLK	0.00087	0.00088	0.00087
	CLK	-0.00130	-0.00132	-0.00131
	(!CLK * !GCLK)	0.00763	0.00747	0.00731
	(!CLK * !GCLK)	0.00543	0.00527	0.00509

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00102	-0.00104	-0.00103
	CLK	0.00117	0.00119	0.00118
	(!CLK * !GCLK)	0.00511	0.00493	0.00482
	(!CLK * !GCLK)	0.00747	0.00730	0.00718
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00089	-0.00091	-0.00090
	CLK	0.00132	0.00133	0.00131
	(!CLK * !GCLK)	0.00536	0.00518	0.00506
	(!CLK * !GCLK)	0.00770	0.00753	0.00740
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00086	-0.00088	-0.00087
	CLK	0.00130	0.00132	0.00131
	(!CLK * !GCLK)	0.00576	0.00558	0.00548
	(!CLK * !GCLK)	0.00797	0.00780	0.00769

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00689	0.00659	0.00641
	(!GATE * !GCLK)	0.00279	0.00246	0.00229
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.00729	0.00694	0.00678
	(!GATE * !GCLK)	0.00285	0.00251	0.00236
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.00722	0.00687	0.00675
	(!GATE * !GCLK)	0.00265	0.00228	0.00216

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.00959	0.00925	0.00893
	(GATE * !GCLK)	0.01369	0.01334	0.01303
	(!GATE * !GCLK)	0.00328	0.00301	0.00289
	(!GATE * !GCLK)	0.00739	0.00713	0.00702
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.00988	0.00953	0.00920
	(GATE * !GCLK)	0.01433	0.01396	0.01366
	(!GATE * !GCLK)	0.00345	0.00317	0.00303
	(!GATE * !GCLK)	0.00787	0.00759	0.00748
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.00957	0.00923	0.00891
	(GATE * !GCLK)	0.01426	0.01391	0.01361
	(!GATE * !GCLK)	0.00322	0.00297	0.00284
	(!GATE * !GCLK)	0.00781	0.00754	0.00743

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	GATE_N	RESET_B	Q	Q_N
0	0	x	0	1
x	1	0	0	1
x	1	1	1	1
1	x	0	0	1
1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbn_1	28.77120
sky130_fd_sc_hs__dlrbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	GATE_N	RESET_B	Q	Q_N
sky130_fd_sc_hs__dlrbn_1	0.00218	0.00242	0.00265	0.35537	0.36122
sky130_fd_sc_hs__dlrbn_2	0.00219	0.00242	0.00275	0.67014	0.71621

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	0.00057	0.00064
sky130_fd_sc_hs__dlrbn_2	0.00000	0.00075	0.00078

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)	0.73239	1.72669	9.14659
	GATE_N->Q (-R)	0.91308	2.20634	12.12070
	RESET_B->Q (RR)	0.19726	1.21315	8.84925
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.73552	1.60643	9.17933
	GATE_N->Q (-R)	0.92139	2.09103	12.16450
	RESET_B->Q (RR)	0.20614	1.11803	9.05050

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.53970	1.32620	5.91640
	GATE_N->Q (-F)	0.62461	1.42468	6.42061
	RESET_B->Q (FF)	0.29207	1.11716	6.64486
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.60797	1.39218	5.95466
	GATE_N->Q (-F)	0.69387	1.49182	6.46214
	RESET_B->Q (FF)	0.35330	1.17356	6.88389

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)	0.67022	1.93863	11.62480
	GATE_N->Q_N (-R)	0.75532	2.03680	12.13100
	RESET_B->Q_N (FR)	0.42704	1.73258	12.15120
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.77850	1.89254	11.89690
	GATE_N->Q_N (-R)	0.86478	1.99205	12.40200
	RESET_B->Q_N (FR)	0.53027	1.68055	12.63730

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)	0.81907	1.28941	3.62500
	GATE_N->Q_N (-F)	0.99989	1.76926	6.59433
	RESET_B->Q_N (RF)	0.28488	0.77312	3.29572
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.91446	1.38156	3.79521
	GATE_N->Q_N (-F)	1.10052	1.86668	6.77962
	RESET_B->Q_N (RF)	0.38461	0.89224	3.64974

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 ()**	0.33450	1.04492	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.42856	1.10672	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	0.00809	0.00806	0.00801
	D	0.00690	0.00688	0.00686
	GATE_N	0.00850	0.00846	0.00864
	GATE_N	0.00962	0.00957	0.00943
	RESET_B	0.00536	0.00537	0.00528
	RESET_B	0.00399	0.00396	0.00391
sky130_fd_sc_hs__dlrbn_2	D	0.00971	0.00990	0.00989
	D	0.00855	0.00874	0.00874
	GATE_N	0.01013	0.01029	0.01075
	GATE_N	0.01124	0.01140	0.01133
	RESET_B	0.00716	0.00732	0.00728
	RESET_B	0.00575	0.00592	0.00587

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00630	0.00634	0.00615
	D	0.00748	0.00752	0.00724
	GATE_N	0.00781	0.00780	0.00763
	GATE_N	0.00908	0.00907	0.00870
	RESET_B	0.00558	0.00555	0.00527
	RESET_B	0.00687	0.00683	0.00649
sky130_fd_sc_hs__dlrbn_2	D	0.00810	0.00838	0.00807
	D	0.00926	0.00954	0.00923
	GATE_N	0.00960	0.00982	0.00950
	GATE_N	0.01085	0.01107	0.01067
	RESET_B	0.00734	0.00749	0.00758
	RESET_B	0.00866	0.00881	0.00842

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00631	0.00635	0.00633
	D	0.00749	0.00753	0.00744
	GATE_N	0.00782	0.00781	0.00799
	GATE_N	0.00909	0.00908	0.00892
	RESET_B	0.00559	0.00556	0.00582
	RESET_B	0.00687	0.00684	0.00669
sky130_fd_sc_hs__dlrbn_2	D	0.00811	0.00839	0.00878
	D	0.00927	0.00955	0.00956
	GATE_N	0.00961	0.00984	0.01004
	GATE_N	0.01086	0.01109	0.01098
	RESET_B	0.00734	0.00750	0.00742
	RESET_B	0.00867	0.00883	0.00870

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00808	0.00806	0.00780
	D	0.00690	0.00688	0.00663
	GATE_N	0.00850	0.00845	0.00814
	GATE_N	0.00961	0.00956	0.00921
	RESET_B	0.00536	0.00533	0.00507
	RESET_B	0.00399	0.00396	0.00370
sky130_fd_sc_hs__dlrbn_2	D	0.00971	0.00989	0.00956
	D	0.00854	0.00873	0.00840
	GATE_N	0.01012	0.01029	0.01013
	GATE_N	0.01124	0.01140	0.01099
	RESET_B	0.00716	0.00734	0.00698
	RESET_B	0.00574	0.00592	0.00556

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)	0.00347	0.00330	0.00323
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00127	0.00109	0.00102
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00645	0.00621	0.00613
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00439	0.00415	0.00406
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)	0.00344	0.00327	0.00319
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00126	0.00108	0.00101
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00606	0.00582	0.00573
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00402	0.00378	0.00369

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)	0.00106	0.00092	0.00091
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00327	0.00312	0.00311
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00458	0.00439	0.00429
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00665	0.00645	0.00636
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)	0.00101	0.00087	0.00085
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00319	0.00305	0.00303
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00472	0.00454	0.00443
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00677	0.00658	0.00648

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)	0.00639	0.00607	0.00592
	(D * RESET_B * Q * !Q_N)	0.00400	0.00367	0.00353
	(D * !RESET_B * !Q * Q_N)	0.00982	0.00952	0.00932
	(D * !RESET_B * !Q * Q_N)	0.00730	0.00701	0.00679
	(!D * !Q * Q_N)	0.00681	0.00646	0.00635
	(!D * !Q * Q_N)	0.00442	0.00408	0.00396
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00640	0.00606	0.00591
	(D * RESET_B * Q * !Q_N)	0.00403	0.00369	0.00354
	(D * !RESET_B * !Q * Q_N)	0.00995	0.00963	0.00942
	(D * !RESET_B * !Q * Q_N)	0.00744	0.00713	0.00691
	(!D * !Q * Q_N)	0.00674	0.00643	0.00628
	(!D * !Q * Q_N)	0.00437	0.00407	0.00391

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)	0.00502	0.00476	0.00462
	(D * RESET_B * Q * !Q_N)	0.00741	0.00714	0.00701
	(D * !RESET_B * !Q * Q_N)	0.00728	0.00697	0.00673
	(D * !RESET_B * !Q * Q_N)	0.00980	0.00949	0.00925
	(!D * !Q * Q_N)	0.00466	0.00439	0.00424
	(!D * !Q * Q_N)	0.00704	0.00677	0.00663
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00495	0.00468	0.00454
	(D * RESET_B * Q * !Q_N)	0.00730	0.00704	0.00691
	(D * !RESET_B * !Q * Q_N)	0.00692	0.00661	0.00637
	(D * !RESET_B * !Q * Q_N)	0.00942	0.00912	0.00888
	(!D * !Q * Q_N)	0.00466	0.00438	0.00424
	(!D * !Q * Q_N)	0.00702	0.00675	0.00661

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)	0.00102	0.00103	0.00102
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00133	-0.00134	-0.00133
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00109	0.00110	0.00109
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00135	-0.00136	-0.00135

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)	-0.00101	-0.00103	-0.00102
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00133	0.00134	0.00134
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00108	-0.00110	-0.00109
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00135	0.00136	0.00135

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	GATE	RESET_B	Q	Q_N
x	x	0	0	1
x	0	1	1	1
0	1	1	0	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbp_1	27.17280
sky130_fd_sc_hs__dlrbp_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	GATE	RESET_B	Q	Q_N
sky130_fd_sc_hs__dlrbp_1	0.00201	0.00232	0.00274	0.35450	0.35519
sky130_fd_sc_hs__dlrbp_2	0.00202	0.00231	0.00274	0.71307	0.71094

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	0.00057	0.00064
sky130_fd_sc_hs__dlrbp_2	0.00000	0.00075	0.00078

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)	0.70519	1.69101	9.06921
	GATE->Q (-R)	0.61406	1.58824	8.94102
	RESET_B->Q (RR)	0.20053	1.21807	8.86734
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.71867	1.55830	9.10353
	GATE->Q (-R)	0.62234	1.44676	8.95395
	RESET_B->Q (RR)	0.20598	1.09479	9.03646

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.53554	1.31876	5.85144
	GATE->Q (-F)	0.56335	1.04804	3.30103
	RESET_B->Q (FF)	0.29816	1.12446	6.67307
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.60473	1.39161	6.01755
	GATE->Q (-F)	0.63040	1.11726	3.44274
	RESET_B->Q (FF)	0.34359	1.16758	6.97571

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)	0.67110	1.93946	11.56500
	GATE->Q_N (-R)	0.69903	1.66783	9.01585
	RESET_B->Q_N (FR)	0.43845	1.74703	12.18560
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.77525	1.86443	11.56590
	GATE->Q_N (-R)	0.80123	1.58937	8.99560
	RESET_B->Q_N (FR)	0.51576	1.64686	12.33540

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)	0.79432	1.25441	3.52585
	GATE->Q_N (-F)	0.70342	1.15168	3.39924
	RESET_B->Q_N (RF)	0.29049	0.77842	3.29257
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.88136	1.32312	3.65195
	GATE->Q_N (-F)	0.78527	1.21179	3.50117
	RESET_B->Q_N (RF)	0.36809	0.85858	3.56240

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 ()**	0.33832	1.04492	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.41378	1.09900	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	0.00764	0.00761	0.00756
	D	0.00654	0.00651	0.00646
	GATE	0.00891	0.00881	0.00868
	GATE	0.00766	0.00756	0.00744
	RESET_B	0.00540	0.00539	0.00531
	RESET_B	0.00398	0.00393	0.00389
sky130_fd_sc_hs__dlrbp_2	D	0.00954	0.00973	0.00972
	D	0.00844	0.00862	0.00862
	GATE	0.01079	0.01088	0.01080
	GATE	0.00954	0.00963	0.00957
	RESET_B	0.00725	0.00745	0.00739
	RESET_B	0.00583	0.00598	0.00595

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00655	0.00662	0.00635
	D	0.00765	0.00772	0.00741
	GATE	0.00910	0.00910	0.00885
	GATE	0.00803	0.00804	0.00779
	RESET_B	0.00567	0.00561	0.00530
	RESET_B	0.00700	0.00695	0.00660
sky130_fd_sc_hs__dlrbp_2	D	0.00836	0.00863	0.00832
	D	0.00946	0.00973	0.00939
	GATE	0.01090	0.01110	0.01080
	GATE	0.00981	0.01003	0.00974
	RESET_B	0.00746	0.00761	0.00756
	RESET_B	0.00878	0.00894	0.00854

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00656	0.00662	0.00659
	D	0.00766	0.00772	0.00763
	GATE	0.00911	0.00911	0.00908
	GATE	0.00804	0.00805	0.00804
	RESET_B	0.00568	0.00561	0.00577
	RESET_B	0.00701	0.00695	0.00682
sky130_fd_sc_hs__dlrbp_2	D	0.00837	0.00865	0.00876
	D	0.00947	0.00975	0.00970
	GATE	0.01091	0.01112	0.01114
	GATE	0.00983	0.01005	0.01008
	RESET_B	0.00746	0.00762	0.00821
	RESET_B	0.00879	0.00895	0.00884

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00763	0.00760	0.00734
	D	0.00654	0.00650	0.00625
	GATE	0.00890	0.00880	0.00847
	GATE	0.00765	0.00756	0.00722
	RESET_B	0.00540	0.00535	0.00511
	RESET_B	0.00398	0.00393	0.00369
sky130_fd_sc_hs__dlrbp_2	D	0.00954	0.00972	0.00940
	D	0.00843	0.00862	0.00831
	GATE	0.01078	0.01088	0.01047
	GATE	0.00954	0.00963	0.00924
	RESET_B	0.00725	0.00741	0.00707
	RESET_B	0.00583	0.00598	0.00566

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)	0.00551	0.00527	0.00519
	(GATE * !RESET_B * !Q * Q_N)	0.00363	0.00339	0.00331
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00334	0.00317	0.00311
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00132	0.00115	0.00109
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00556	0.00532	0.00524
	(GATE * !RESET_B * !Q * Q_N)	0.00368	0.00345	0.00336
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00335	0.00317	0.00311
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00130	0.00114	0.00108

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)	0.00482	0.00464	0.00454
	(GATE * !RESET_B * !Q * Q_N)	0.00669	0.00653	0.00642
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00082	0.00069	0.00068
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00284	0.00271	0.00270
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00487	0.00469	0.00460
	(GATE * !RESET_B * !Q * Q_N)	0.00675	0.00657	0.00648
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00089	0.00076	0.00075
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00292	0.00279	0.00278

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)	0.00660	0.00630	0.00617
	(D * RESET_B * Q * !Q_N)	0.00431	0.00398	0.00385
	(D * !RESET_B * !Q * Q_N)	0.00786	0.00747	0.00726
	(D * !RESET_B * !Q * Q_N)	0.00569	0.00529	0.00509
	(!D * !Q * Q_N)	0.00669	0.00641	0.00626
	(!D * !Q * Q_N)	0.00438	0.00409	0.00394
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00661	0.00630	0.00617
	(D * RESET_B * Q * !Q_N)	0.00429	0.00397	0.00384
	(D * !RESET_B * !Q * Q_N)	0.00783	0.00744	0.00724
	(D * !RESET_B * !Q * Q_N)	0.00567	0.00527	0.00507
	(!D * !Q * Q_N)	0.00667	0.00638	0.00623
	(!D * !Q * Q_N)	0.00433	0.00405	0.00390

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)	0.00413	0.00388	0.00377
	(D * RESET_B * Q * !Q_N)	0.00643	0.00619	0.00608
	(D * !RESET_B * !Q * Q_N)	0.00692	0.00659	0.00637
	(D * !RESET_B * !Q * Q_N)	0.00909	0.00876	0.00854
	(!D * !Q * Q_N)	0.00412	0.00387	0.00374
	(!D * !Q * Q_N)	0.00643	0.00617	0.00605
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00409	0.00385	0.00373
	(D * RESET_B * Q * !Q_N)	0.00641	0.00616	0.00606
	(D * !RESET_B * !Q * Q_N)	0.00686	0.00653	0.00631
	(D * !RESET_B * !Q * Q_N)	0.00902	0.00870	0.00848
	(!D * !Q * Q_N)	0.00411	0.00386	0.00373
	(!D * !Q * Q_N)	0.00643	0.00617	0.00605

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)	0.00104	0.00105	0.00104
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00137	-0.00138	-0.00137
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00105	0.00107	0.00106
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00136	-0.00137	-0.00136

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)	-0.00103	-0.00105	-0.00104
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00137	0.00138	0.00137
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00104	-0.00106	-0.00106
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00137	0.00137	0.00137

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	GATE_N	RESET_B	Q
0	0	x	0
x	1	0	0
x	1	1	1
1	x	0	0
1	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtn_1	23.97600
sky130_fd_sc_hs__dlrtn_2	27.17280
sky130_fd_sc_hs__dlrtn_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	GATE_N	RESET_B	Q
sky130_fd_sc_hs__dlrtn_1	0.00200	0.00234	0.00261	0.36016
sky130_fd_sc_hs__dlrtn_2	0.00202	0.00232	0.00270	0.71059
sky130_fd_sc_hs__dlrtn_4	0.00202	0.00233	0.00434	1.37912

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtn_1	0.00000	0.00047	0.00053
sky130_fd_sc_hs__dlrtn_2	0.00000	0.00054	0.00056
sky130_fd_sc_hs__dlrtn_4	0.00000	0.00074	0.00080

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)	0.68556	1.67038	9.05521
	GATE_N->Q (-R)	0.83798	2.12439	11.93580
	RESET_B->Q (RR)	0.17695	1.16869	8.66963
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.69892	1.53908	9.10050
	GATE_N->Q (-R)	0.85136	1.99176	11.98180
	RESET_B->Q (RR)	0.18109	1.04989	8.86487
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.79738	1.52622	9.23856
	GATE_N->Q (-R)	0.95239	1.98389	12.13670
	RESET_B->Q (RR)	0.19469	0.95219	8.94712

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.49012	1.25837	5.83172
	GATE_N->Q (-F)	0.55605	1.33936	6.26394
	RESET_B->Q (FF)	0.25289	1.04941	6.25342
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.53566	1.29287	5.87794
	GATE_N->Q (-F)	0.60074	1.37368	6.30856
	RESET_B->Q (FF)	0.29711	1.09525	6.66162
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.54410	1.28353	5.96493
	GATE_N->Q (-F)	0.61793	1.37294	6.43155
	RESET_B->Q (FF)	0.30186	1.05206	6.38561

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 ()**	0.28485	1.04492	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.35857	1.04878	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.38797	1.04492	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	0.01117	0.01103	0.01095
	D	0.00900	0.00886	0.00880
	GATE_N	0.01185	0.01169	0.01143
	GATE_N	0.01401	0.01384	0.01362
	RESET_B	0.00672	0.00661	0.00655
	RESET_B	0.00402	0.00390	0.00385
sky130_fd_sc_hs__dlrtn_2	D	0.01281	0.01290	0.01294
	D	0.01065	0.01074	0.01085
	GATE_N	0.01352	0.01359	0.01346
	GATE_N	0.01569	0.01575	0.01567
	RESET_B	0.00832	0.00839	0.00839
	RESET_B	0.00554	0.00573	0.00563
sky130_fd_sc_hs__dlrtn_4	D	0.01835	0.01874	0.01922
	D	0.01603	0.01645	0.01707
	GATE_N	0.01914	0.01953	0.01981
	GATE_N	0.02115	0.02154	0.02188
	RESET_B	0.01458	0.01487	0.01504
	RESET_B	0.01010	0.01038	0.01063

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.00911	0.00906	0.00899
	D	0.01128	0.01122	0.01103
	GATE_N	0.01123	0.01104	0.01088
	GATE_N	0.01374	0.01354	0.01321
	RESET_B	0.00722	0.00705	0.00685
	RESET_B	0.00976	0.00958	0.00931
sky130_fd_sc_hs__dlrtn_2	D	0.01094	0.01116	0.01121
	D	0.01309	0.01331	0.01311
	GATE_N	0.01314	0.01323	0.01338
	GATE_N	0.01559	0.01567	0.01532
	RESET_B	0.00902	0.00907	0.00884
	RESET_B	0.01164	0.01169	0.01143
sky130_fd_sc_hs__dlrtn_4	D	0.01562	0.01628	0.01618
	D	0.01792	0.01858	0.01838
	GATE_N	0.01786	0.01838	0.01836
	GATE_N	0.02047	0.02099	0.02062
	RESET_B	0.01405	0.01419	0.01395
	RESET_B	0.01835	0.01848	0.01815

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)	0.00322	0.00306	0.00299
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00122	0.00106	0.00100
	(!GATE_N * !RESET_B * !Q)	0.00539	0.00516	0.00509
	(!GATE_N * !RESET_B * !Q)	0.00354	0.00330	0.00323
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00325	0.00309	0.00302
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00123	0.00107	0.00101
	(!GATE_N * !RESET_B * !Q)	0.00542	0.00519	0.00511
	(!GATE_N * !RESET_B * !Q)	0.00355	0.00331	0.00323
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00324	0.00307	0.00301
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00123	0.00106	0.00100
	(!GATE_N * !RESET_B * !Q)	0.00574	0.00550	0.00542
	(!GATE_N * !RESET_B * !Q)	0.00389	0.00365	0.00356

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)	0.00111	0.00097	0.00096
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00310	0.00297	0.00296
	(!GATE_N * !RESET_B * !Q)	0.00512	0.00495	0.00484
	(!GATE_N * !RESET_B * !Q)	0.00698	0.00681	0.00671
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00109	0.00096	0.00094
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00311	0.00298	0.00296
	(!GATE_N * !RESET_B * !Q)	0.00516	0.00497	0.00488
	(!GATE_N * !RESET_B * !Q)	0.00704	0.00685	0.00675
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00106	0.00093	0.00091
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00306	0.00294	0.00292
	(!GATE_N * !RESET_B * !Q)	0.00591	0.00573	0.00564
	(!GATE_N * !RESET_B * !Q)	0.00778	0.00759	0.00750

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)	0.00626	0.00591	0.00579
	(D * RESET_B * Q)	0.00392	0.00357	0.00346
	(D * !RESET_B * !Q)	0.00970	0.00938	0.00920
	(D * !RESET_B * !Q)	0.00723	0.00691	0.00672
	(!D * !Q)	0.00626	0.00596	0.00583
	(!D * !Q)	0.00392	0.00363	0.00349
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00624	0.00590	0.00577
	(D * RESET_B * Q)	0.00393	0.00358	0.00346
	(D * !RESET_B * !Q)	0.00972	0.00941	0.00921
	(D * !RESET_B * !Q)	0.00727	0.00696	0.00676
	(!D * !Q)	0.00622	0.00594	0.00579
	(!D * !Q)	0.00391	0.00362	0.00348
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00629	0.00594	0.00582
	(D * RESET_B * Q)	0.00397	0.00362	0.00350
	(D * !RESET_B * !Q)	0.01051	0.01020	0.01005
	(D * !RESET_B * !Q)	0.00805	0.00774	0.00758
	(!D * !Q)	0.00623	0.00594	0.00580
	(!D * !Q)	0.00392	0.00362	0.00348

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)	0.00421	0.00395	0.00382
	(D * RESET_B * Q)	0.00654	0.00628	0.00616
	(D * !RESET_B * !Q)	0.00608	0.00579	0.00556
	(D * !RESET_B * !Q)	0.00855	0.00826	0.00803
	(!D * !Q)	0.00425	0.00399	0.00385
	(!D * !Q)	0.00659	0.00632	0.00619
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00427	0.00401	0.00388
	(D * RESET_B * Q)	0.00657	0.00631	0.00620
	(D * !RESET_B * !Q)	0.00614	0.00586	0.00563
	(D * !RESET_B * !Q)	0.00860	0.00831	0.00809
	(!D * !Q)	0.00433	0.00407	0.00393
	(!D * !Q)	0.00664	0.00637	0.00624
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00430	0.00403	0.00391
	(D * RESET_B * Q)	0.00661	0.00634	0.00623
	(D * !RESET_B * !Q)	0.00651	0.00624	0.00601
	(D * !RESET_B * !Q)	0.00899	0.00870	0.00847
	(!D * !Q)	0.00439	0.00412	0.00399
	(!D * !Q)	0.00670	0.00643	0.00631

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)	0.00104	0.00105	0.00104
	(D * GATE_N * !Q) + (!D * !Q)	-0.00126	-0.00126	-0.00126
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00106	0.00107	0.00106
	(D * GATE_N * !Q) + (!D * !Q)	-0.00134	-0.00135	-0.00135
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00177	0.00179	0.00177
	(D * GATE_N * !Q) + (!D * !Q)	-0.00204	-0.00206	-0.00205

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)	-0.00103	-0.00104	-0.00104
	(D * GATE_N * !Q) + (!D * !Q)	0.00126	0.00127	0.00126
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00105	-0.00107	-0.00106
	(D * GATE_N * !Q) + (!D * !Q)	0.00135	0.00136	0.00135
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00175	-0.00178	-0.00177
	(D * GATE_N * !Q) + (!D * !Q)	0.00205	0.00206	0.00205

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	GATE	RESET_B	Q
x	x	0	0
x	0	1	1
0	1	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtp_1	22.37760
sky130_fd_sc_hs__dlrtp_2	23.97600
sky130_fd_sc_hs__dlrtp_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	GATE	RESET_B	Q
sky130_fd_sc_hs__dlrtp_1	0.00216	0.00236	0.00267	0.36032
sky130_fd_sc_hs__dlrtp_2	0.00213	0.00231	0.00276	0.71299
sky130_fd_sc_hs__dlrtp_4	0.00212	0.00230	0.00413	1.38016

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtp_1	0.00000	0.00047	0.00053
sky130_fd_sc_hs__dlrtp_2	0.00000	0.00054	0.00056
sky130_fd_sc_hs__dlrtp_4	0.00000	0.00074	0.00080

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)	0.67833	1.66103	9.04353
	GATE->Q (-R)	0.58898	1.55663	8.91286
	RESET_B->Q (RR)	0.17735	1.16976	8.67078
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.69929	1.53717	9.09153
	GATE->Q (-R)	0.60976	1.42840	8.94032
	RESET_B->Q (RR)	0.18059	1.04925	8.85630
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.78943	1.51772	9.21288
	GATE->Q (-R)	0.70668	1.41860	9.07833
	RESET_B->Q (RR)	0.19427	0.95049	8.92934

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.50424	1.27516	5.89651
	GATE->Q (-F)	0.53035	1.00684	3.33902
	RESET_B->Q (FF)	0.25204	1.04943	6.29132
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.55573	1.31596	5.94963
	GATE->Q (-F)	0.57620	1.03760	3.36181
	RESET_B->Q (FF)	0.29077	1.08965	6.68010
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.56019	1.29793	5.98612
	GATE->Q (-F)	0.57751	1.02078	3.39369
	RESET_B->Q (FF)	0.30026	1.05231	6.38671

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 ()**	0.28103	1.04492	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.34978	1.04492	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.38415	1.04492	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	0.01123	0.01106	0.01091
	D	0.00883	0.00865	0.00852
	GATE	0.01392	0.01357	0.01331
	GATE	0.01136	0.01101	0.01078
	RESET_B	0.00646	0.00634	0.00625
	RESET_B	0.00370	0.00357	0.00349
sky130_fd_sc_hs__dlrtp_2	D	0.01321	0.01327	0.01327
	D	0.01081	0.01085	0.01092
	GATE	0.01571	0.01558	0.01542
	GATE	0.01317	0.01305	0.01293
	RESET_B	0.00836	0.00841	0.00839
	RESET_B	0.00551	0.00568	0.00559
sky130_fd_sc_hs__dlrtp_4	D	0.01857	0.01899	0.01942
	D	0.01609	0.01653	0.01713
	GATE	0.02103	0.02131	0.02159
	GATE	0.01844	0.01871	0.01910
	RESET_B	0.01441	0.01470	0.01490
	RESET_B	0.01015	0.01043	0.01071

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.00885	0.00878	0.00862
	D	0.01126	0.01119	0.01100
	GATE	0.01419	0.01406	0.01395
	GATE	0.01198	0.01188	0.01173
	RESET_B	0.00720	0.00704	0.00724
	RESET_B	0.00977	0.00960	0.00934
sky130_fd_sc_hs__dlrtp_2	D	0.01053	0.01073	0.01066
	D	0.01294	0.01314	0.01295
	GATE	0.01564	0.01569	0.01571
	GATE	0.01347	0.01363	0.01355
	RESET_B	0.00882	0.00885	0.00884
	RESET_B	0.01150	0.01153	0.01130
sky130_fd_sc_hs__dlrtp_4	D	0.01543	0.01607	0.01623
	D	0.01789	0.01853	0.01836
	GATE	0.02039	0.02097	0.02097
	GATE	0.01829	0.01890	0.01886
	RESET_B	0.01406	0.01420	0.01398
	RESET_B	0.01815	0.01827	0.01801

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)	0.00575	0.00552	0.00543
	(GATE * !RESET_B * !Q)	0.00368	0.00343	0.00335
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00352	0.00335	0.00327
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00128	0.00110	0.00103
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00584	0.00560	0.00551
	(GATE * !RESET_B * !Q)	0.00376	0.00351	0.00342
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00355	0.00337	0.00330
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00132	0.00114	0.00107
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00605	0.00580	0.00570
	(GATE * !RESET_B * !Q)	0.00397	0.00372	0.00362
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00353	0.00336	0.00328
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00131	0.00113	0.00106

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)	0.00474	0.00454	0.00444
	(GATE * !RESET_B * !Q)	0.00682	0.00662	0.00653
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00081	0.00067	0.00065
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00305	0.00291	0.00289
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00487	0.00468	0.00457
	(GATE * !RESET_B * !Q)	0.00695	0.00676	0.00666
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00086	0.00071	0.00069
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00308	0.00294	0.00292
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00558	0.00539	0.00528
	(GATE * !RESET_B * !Q)	0.00766	0.00747	0.00738
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00082	0.00067	0.00065
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00304	0.00290	0.00287

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)	0.00693	0.00663	0.00649
	(D * RESET_B * Q)	0.00454	0.00424	0.00412
	(D * !RESET_B * !Q)	0.00824	0.00784	0.00763
	(D * !RESET_B * !Q)	0.00600	0.00561	0.00540
	(!D * !Q)	0.00692	0.00664	0.00650
	(!D * !Q)	0.00453	0.00425	0.00411
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00675	0.00645	0.00631
	(D * RESET_B * Q)	0.00441	0.00410	0.00397
	(D * !RESET_B * !Q)	0.00810	0.00770	0.00749
	(D * !RESET_B * !Q)	0.00591	0.00550	0.00529
	(!D * !Q)	0.00673	0.00644	0.00630
	(!D * !Q)	0.00437	0.00409	0.00395
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00665	0.00635	0.00622
	(D * RESET_B * Q)	0.00430	0.00400	0.00387
	(D * !RESET_B * !Q)	0.00830	0.00790	0.00767
	(D * !RESET_B * !Q)	0.00610	0.00570	0.00547
	(!D * !Q)	0.00666	0.00639	0.00625
	(!D * !Q)	0.00432	0.00404	0.00390

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)	0.00409	0.00385	0.00373
	(D * RESET_B * Q)	0.00647	0.00623	0.00612
	(D * !RESET_B * !Q)	0.00692	0.00659	0.00636
	(D * !RESET_B * !Q)	0.00915	0.00882	0.00859
	(!D * !Q)	0.00418	0.00393	0.00380
	(!D * !Q)	0.00657	0.00631	0.00619
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00412	0.00388	0.00376
	(D * RESET_B * Q)	0.00647	0.00621	0.00610
	(D * !RESET_B * !Q)	0.00705	0.00672	0.00649
	(D * !RESET_B * !Q)	0.00926	0.00892	0.00870
	(!D * !Q)	0.00423	0.00398	0.00385
	(!D * !Q)	0.00657	0.00631	0.00619
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00407	0.00382	0.00371
	(D * RESET_B * Q)	0.00640	0.00616	0.00604
	(D * !RESET_B * !Q)	0.00778	0.00744	0.00720
	(D * !RESET_B * !Q)	0.00998	0.00964	0.00941
	(!D * !Q)	0.00413	0.00387	0.00375
	(!D * !Q)	0.00647	0.00621	0.00609

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)	0.00103	0.00105	0.00104
	(D * !GATE * !Q) + (!D * !Q)	-0.00129	-0.00130	-0.00130
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00104	0.00106	0.00105
	(D * !GATE * !Q) + (!D * !Q)	-0.00137	-0.00138	-0.00138
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00172	0.00174	0.00172
	(D * !GATE * !Q) + (!D * !Q)	-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__dlrtp_1	(D * !GATE * !Q) + (!D * !Q)	-0.00103	-0.00104	-0.00104
	(D * !GATE * !Q) + (!D * !Q)	0.00130	0.00131	0.00130
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00104	-0.00105	-0.00105
	(D * !GATE * !Q) + (!D * !Q)	0.00138	0.00139	0.00138
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00170	-0.00173	-0.00172
	(D * !GATE * !Q) + (!D * !Q)	0.00195	0.00196	0.00195

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT	
D	GATE_N	Q	Q_N
0	0	0	1
x	1	1	1
1	0	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbn_1	27.17280
sky130_fd_sc_hs__dlxbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE_N	Q	Q_N
sky130_fd_sc_hs__dlxbn_1	0.00215	0.00236	0.35422	0.36184
sky130_fd_sc_hs__dlxbn_2	0.00203	0.00234	0.67028	0.71822

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	0.00054	0.00056
sky130_fd_sc_hs__dlxbn_2	0.00000	0.00071	0.00076

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)	0.69124	1.69409	9.09378
	GATE_N->Q (-R)	0.84505	2.14736	11.98160
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.69731	1.56273	9.12538
	GATE_N->Q (-R)	0.85020	2.01655	12.01130

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.52833	1.31328	5.92722
	GATE_N->Q (-F)	0.59563	1.39517	6.36271
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.57360	1.34961	5.91052
	GATE_N->Q (-F)	0.64214	1.43382	6.34975

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)	0.66195	1.96738	12.01300
	GATE_N->Q_N (-R)	0.72954	2.04923	12.45010
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.74145	1.85349	11.87930
	GATE_N->Q_N (-R)	0.81027	1.93700	12.31980

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)	0.78098	1.24819	3.59787
	GATE_N->Q_N (-F)	0.93496	1.70128	6.48412
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.87002	1.33593	3.74217
	GATE_N->Q_N (-F)	1.02319	1.78963	6.62565

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00763	0.00769	0.00768
	D	0.00655	0.00662	0.00661
	GATE_N	0.00793	0.00797	0.00829
	GATE_N	0.00911	0.00915	0.00910
sky130_fd_sc_hs__dlxbn_2	D	0.00944	0.00969	0.00977
	D	0.00841	0.00867	0.00875
	GATE_N	0.00976	0.01000	0.01066
	GATE_N	0.01094	0.01117	0.01120

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00664	0.00673	0.00659
	D	0.00771	0.00779	0.00755
	GATE_N	0.00783	0.00786	0.00761
	GATE_N	0.00902	0.00904	0.00871
sky130_fd_sc_hs__dlxbn_2	D	0.00837	0.00868	0.00839
	D	0.00939	0.00970	0.00940
	GATE_N	0.00955	0.00979	0.00967
	GATE_N	0.01073	0.01096	0.01059

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00665	0.00674	0.00687
	D	0.00772	0.00781	0.00775
	GATE_N	0.00784	0.00787	0.00814
	GATE_N	0.00903	0.00905	0.00892
sky130_fd_sc_hs__dlxbn_2	D	0.00839	0.00869	0.00911
	D	0.00940	0.00971	0.00972
	GATE_N	0.00956	0.00980	0.01019
	GATE_N	0.01074	0.01097	0.01092

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00762	0.00769	0.00745
	D	0.00654	0.00661	0.00638
	GATE_N	0.00792	0.00797	0.00777
	GATE_N	0.00911	0.00915	0.00886
sky130_fd_sc_hs__dlxbn_2	D	0.00943	0.00969	0.00940
	D	0.00840	0.00867	0.00839
	GATE_N	0.00976	0.01000	0.00991
	GATE_N	0.01093	0.01117	0.01082

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)	0.00342	0.00325	0.00318
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00128	0.00111	0.00104
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00334	0.00318	0.00312
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00131	0.00114	0.00108

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)	0.00096	0.00081	0.00079
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00308	0.00296	0.00294
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00099	0.00085	0.00084
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00303	0.00290	0.00288

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)	0.00649	0.00614	0.00602
	(D * Q * !Q_N)	0.00413	0.00378	0.00365
	(!D * !Q * Q_N)	0.00643	0.00613	0.00598
	(!D * !Q * Q_N)	0.00407	0.00376	0.00361
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00646	0.00611	0.00599
	(D * Q * !Q_N)	0.00411	0.00376	0.00364
	(!D * !Q * Q_N)	0.00640	0.00611	0.00596
	(!D * !Q * Q_N)	0.00405	0.00375	0.00361

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)	0.00429	0.00403	0.00390
	(D * Q * !Q_N)	0.00666	0.00638	0.00627
	(!D * !Q * Q_N)	0.00439	0.00413	0.00399
	(!D * !Q * Q_N)	0.00676	0.00649	0.00636
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00427	0.00400	0.00388
	(D * Q * !Q_N)	0.00661	0.00634	0.00623
	(!D * !Q * Q_N)	0.00436	0.00410	0.00397
	(!D * !Q * Q_N)	0.00671	0.00645	0.00632

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT	
D	GATE	Q	Q_N
x	0	1	1
0	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbp_1	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE	Q	Q_N
sky130_fd_sc_hs__dlxbp_1	0.00213	0.00238	0.35710	0.35224

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	0.00054	0.00056

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)	0.67286	1.67673	9.12496
	GATE->Q (-R)	0.58196	1.57067	8.97421

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.54419	1.33306	5.95407
	GATE->Q (-F)	0.55547	1.04455	3.35547

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)	0.67915	1.97258	11.82970
	GATE->Q_N (-R)	0.69056	1.68398	9.23290

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)	0.76294	1.22612	3.53854
	GATE->Q_N (-F)	0.67205	1.12002	3.38832

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00760	0.00768	0.00767
	D	0.00654	0.00661	0.00661
	GATE	0.00879	0.00876	0.00871
	GATE	0.00761	0.00761	0.00753

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00653	0.00663	0.00646
	D	0.00759	0.00769	0.00743
	GATE	0.00901	0.00906	0.00884
	GATE	0.00782	0.00788	0.00767

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00654	0.00664	0.00671
	D	0.00760	0.00770	0.00764
	GATE	0.00902	0.00907	0.00907
	GATE	0.00783	0.00789	0.00790

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00760	0.00767	0.00744
	D	0.00653	0.00661	0.00638
	GATE	0.00879	0.00879	0.00847
	GATE	0.00760	0.00761	0.00729

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)	0.00351	0.00333	0.00327
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00137	0.00120	0.00114

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)	0.00086	0.00072	0.00070
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00298	0.00285	0.00283

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)	0.00653	0.00623	0.00610
	(D * Q * !Q_N)	0.00417	0.00385	0.00373
	(!D * !Q * Q_N)	0.00664	0.00636	0.00623
	(!D * !Q * Q_N)	0.00428	0.00400	0.00386

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)	0.00402	0.00377	0.00367
	(D * Q * !Q_N)	0.00638	0.00613	0.00603
	(!D * !Q * Q_N)	0.00397	0.00372	0.00360
	(!D * !Q * Q_N)	0.00634	0.00608	0.00597

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
D	GATE_N	Q
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtn_1	22.37760
sky130_fd_sc_hs__dlxtn_2	23.97600
sky130_fd_sc_hs__dlxtn_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE_N	Q
sky130_fd_sc_hs__dlxtn_1	0.00213	0.00240	0.35719
sky130_fd_sc_hs__dlxtn_2	0.00218	0.00239	0.70898
sky130_fd_sc_hs__dlxtn_4	0.00217	0.00238	1.38092

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.00043	0.00046
sky130_fd_sc_hs__dlxtn_2	0.00000	0.00049	0.00056
sky130_fd_sc_hs__dlxtn_4	0.00000	0.00066	0.00080

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)	0.65109	1.64089	9.00414
	GATE_N->Q (-R)	0.81288	2.09680	11.91470
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.65058	1.48973	9.04043
	GATE_N->Q (-R)	0.80531	1.93935	11.92700
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.75930	1.48802	9.21804
	GATE_N->Q (-R)	0.91429	1.93770	12.10650

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.47938	1.24219	5.83084
	GATE_N->Q (-F)	0.55494	1.33259	6.29527
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.52486	1.28097	5.90259
	GATE_N->Q (-F)	0.59501	1.36444	6.34789
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.54168	1.27832	6.02563
	GATE_N->Q (-F)	0.61820	1.36936	6.49759

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01067	0.01064	0.01058
	D	0.00845	0.00842	0.00838
	GATE_N	0.01124	0.01114	0.01095
	GATE_N	0.01367	0.01355	0.01341
sky130_fd_sc_hs__dlxtn_2	D	0.01255	0.01264	0.01271
	D	0.01028	0.01037	0.01052
	GATE_N	0.01304	0.01311	0.01302
	GATE_N	0.01545	0.01551	0.01546
sky130_fd_sc_hs__dlxtn_4	D	0.01785	0.01823	0.01845
	D	0.01559	0.01597	0.01634
	GATE_N	0.01836	0.01871	0.01880
	GATE_N	0.02077	0.02111	0.02128

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.00898	0.00891	0.00888
	D	0.01120	0.01112	0.01096
	GATE_N	0.01130	0.01110	0.01098
	GATE_N	0.01372	0.01352	0.01320
sky130_fd_sc_hs__dlxtn_2	D	0.01060	0.01076	0.01085
	D	0.01287	0.01301	0.01285
	GATE_N	0.01290	0.01294	0.01303
	GATE_N	0.01530	0.01534	0.01502
sky130_fd_sc_hs__dlxtn_4	D	0.01560	0.01617	0.01645
	D	0.01786	0.01842	0.01826
	GATE_N	0.01791	0.01836	0.01859
	GATE_N	0.02031	0.02076	0.02044

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00343	0.00326	0.00318
	GATE_N	0.00121	0.00103	0.00097
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00344	0.00327	0.00320
	GATE_N	0.00118	0.00100	0.00093
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00345	0.00328	0.00320
	GATE_N	0.00120	0.00101	0.00094

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00116	0.00102	0.00100
	GATE_N	0.00338	0.00323	0.00322
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00115	0.00100	0.00098
	GATE_N	0.00341	0.00327	0.00325
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00117	0.00102	0.00100
	GATE_N	0.00343	0.00329	0.00326

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00675	0.00643	0.00631
	(D * Q)	0.00433	0.00401	0.00388
	(!D * !Q)	0.00668	0.00640	0.00625
	(!D * !Q)	0.00425	0.00397	0.00383
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00660	0.00627	0.00615
	(D * Q)	0.00419	0.00386	0.00374
	(!D * !Q)	0.00649	0.00621	0.00607
	(!D * !Q)	0.00408	0.00380	0.00366
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00665	0.00632	0.00620
	(D * Q)	0.00424	0.00391	0.00379
	(!D * !Q)	0.00654	0.00626	0.00612
	(!D * !Q)	0.00413	0.00384	0.00371

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00431	0.00404	0.00391
	(D * Q)	0.00672	0.00645	0.00633
	(!D * !Q)	0.00443	0.00416	0.00402
	(!D * !Q)	0.00685	0.00658	0.00645
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00425	0.00399	0.00387
	(D * Q)	0.00666	0.00639	0.00627
	(!D * !Q)	0.00440	0.00414	0.00400
	(!D * !Q)	0.00681	0.00654	0.00641
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00429	0.00402	0.00390
	(D * Q)	0.00669	0.00643	0.00631
	(!D * !Q)	0.00444	0.00417	0.00404
	(!D * !Q)	0.00685	0.00658	0.00645

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
D	GATE	Q
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtp_1	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE	Q
sky130_fd_sc_hs__dlxtp_1	0.00209	0.00244	0.35397

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.00042	0.00046

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)	0.76149	1.74469	9.12009
	GATE->Q (-R)	0.61377	1.58784	8.94609

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.50714	1.27865	5.87693
	GATE->Q (-F)	0.52988	1.00460	3.31248

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01153	0.01144	0.01137
	D	0.00925	0.00916	0.00908
	GATE	0.01432	0.01407	0.01370
	GATE	0.01179	0.01155	0.01121

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.00999	0.00995	0.00975
	D	0.01228	0.01224	0.01202
	GATE	0.01502	0.01487	0.01478
	GATE	0.01272	0.01261	0.01250

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00324	0.00306	0.00300
	!GATE	0.00108	0.00090	0.00083

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00083	0.00069	0.00068
	!GATE	0.00299	0.00286	0.00285

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00713	0.00683	0.00668
	(D * Q)	0.00473	0.00441	0.00428
	(!D * !Q)	0.00697	0.00669	0.00653
	(!D * !Q)	0.00457	0.00428	0.00413

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00354	0.00329	0.00317
	(D * Q)	0.00596	0.00569	0.00558
	(!D * !Q)	0.00387	0.00360	0.00345
	(!D * !Q)	0.00627	0.00600	0.00586

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlygate4sd1_1	12.78720
sky130_fd_sc_hs__dlygate4sd2_1	12.78720
sky130_fd_sc_hs__dlygate4sd3_1	12.78720

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlygate4sd1_1	0.00167	0.35958
sky130_fd_sc_hs__dlygate4sd2_1	0.00168	0.36063
sky130_fd_sc_hs__dlygate4sd3_1	0.00170	0.35992

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.00023	0.00023
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.00022	0.00022
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.00025	0.00025

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)**	0.37787	1.35937	8.71808
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.49638	1.48421	8.88443
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.90806	1.91917	9.41979

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.57519	1.38465	6.88636
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.69907	1.52425	7.07034
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	1.05857	1.92287	7.66103

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00841	0.00828	0.00804
	A	0.00670	0.00656	0.00634
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00862	0.00849	0.00827
	A	0.00687	0.00676	0.00654
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00943	0.00933	0.00915
	A	0.00767	0.00757	0.00741

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00640	0.00631	0.00708
	A	0.00814	0.00803	0.00786
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00667	0.00658	0.00676
	A	0.00842	0.00831	0.00811
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00771	0.00767	0.00739
	A	0.00948	0.00943	0.00912

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	0
1	0	1
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__ebufn_1	12.78720
sky130_fd_sc_hs__ebufn_2	14.38560
sky130_fd_sc_hs__ebufn_4	19.18080
sky130_fd_sc_hs__ebufn_8	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__ebufn_1	0.00218	0.00406	0.16241
sky130_fd_sc_hs__ebufn_2	0.00239	0.00528	0.29717
sky130_fd_sc_hs__ebufn_4	0.00263	0.00806	0.59010
sky130_fd_sc_hs__ebufn_8	0.00505	0.01336	1.10385

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ebufn_1	0.00000	0.00014	0.00018
sky130_fd_sc_hs__ebufn_2	0.00000	0.00025	0.00028
sky130_fd_sc_hs__ebufn_4	0.00000	0.00031	0.00047
sky130_fd_sc_hs__ebufn_8	0.00000	0.00054	0.00090

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)	0.22966	1.50040	8.98419
	TE_B->Z (RR)	0.04796	0.47181	4.28352
	TE_B->Z (FR)	0.19848	1.79176	13.44730
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.19088	1.30014	9.13603
	TE_B->Z (RR)	0.04983	0.47261	4.28431
	TE_B->Z (FR)	0.17697	1.58752	13.50850
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.19145	1.15956	9.35777
	TE_B->Z (RR)	0.05923	0.47467	4.28638
	TE_B->Z (FR)	0.16014	1.38687	13.44870
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.20006	1.03349	9.37957
	TE_B->Z (RR)	0.08788	0.48060	4.29085
	TE_B->Z (FR)	0.16937	1.26363	13.44130

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.21204	0.96410	5.39799
	TE_B->Z (RF)	0.04760	0.47182	4.28353
	TE_B->Z (FF)	0.16902	0.89779	5.11637
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.25645	1.02440	5.88805
	TE_B->Z (RF)	0.04940	0.47261	4.28433
	TE_B->Z (FF)	0.18469	0.92437	5.45445
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.36759	1.15330	6.63773
	TE_B->Z (RF)	0.05867	0.47469	4.28640
	TE_B->Z (FF)	0.23801	1.00171	6.05381
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.34961	1.11757	6.69298
	TE_B->Z (RF)	0.08678	0.48051	4.29091
	TE_B->Z (FF)	0.35305	1.11573	6.69402

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00474	0.00461	0.00456
	A	0.00242	0.00228	0.00224
	TE_B	0.00205	0.00194	0.00192
	TE_B	0.00620	0.00608	0.00608
sky130_fd_sc_hs__ebufn_2	A	0.00679	0.00679	0.00677
	A	0.00430	0.00430	0.00429
	TE_B	0.00383	0.00370	0.00367
	TE_B	0.00922	0.00908	0.00906
sky130_fd_sc_hs__ebufn_4	A	0.01088	0.01111	0.01125
	A	0.00812	0.00836	0.00852
	TE_B	0.00761	0.00744	0.00739
	TE_B	0.01588	0.01573	0.01571
sky130_fd_sc_hs__ebufn_8	A	0.02106	0.02142	0.02208
	A	0.01573	0.01610	0.01678
	TE_B	0.01557	0.01533	0.01526
	TE_B	0.02935	0.02909	0.02910

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00232	0.00227	0.00227
	A	0.00463	0.00458	0.00458
	TE_B	0.00243	0.00232	0.00230
	TE_B	0.00653	0.00640	0.00640
sky130_fd_sc_hs__ebufn_2	A	0.00401	0.00414	0.00430
	A	0.00651	0.00669	0.00671
	TE_B	0.00460	0.00447	0.00450
	TE_B	0.00981	0.00967	0.00967
sky130_fd_sc_hs__ebufn_4	A	0.00744	0.00805	0.00824
	A	0.01021	0.01080	0.01098
	TE_B	0.00902	0.00885	0.00880
	TE_B	0.01703	0.01685	0.01681
sky130_fd_sc_hs__ebufn_8	A	0.01462	0.01558	0.01675
	A	0.01999	0.02115	0.02164
	TE_B	0.01829	0.01803	0.01882
	TE_B	0.03154	0.03128	0.03128

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00313	0.00297	0.00291
	(TE_B * Z)	0.00080	0.00063	0.00057
	(TE_B * !Z)	0.00312	0.00296	0.00289
	(TE_B * !Z)	0.00078	0.00061	0.00055
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00436	0.00418	0.00409
	(TE_B * Z)	0.00180	0.00160	0.00153
	(TE_B * !Z)	0.00423	0.00404	0.00393
	(TE_B * !Z)	0.00168	0.00147	0.00137
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00654	0.00636	0.00625
	(TE_B * Z)	0.00370	0.00351	0.00341
	(TE_B * !Z)	0.00631	0.00612	0.00597
	(TE_B * !Z)	0.00346	0.00328	0.00315
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01217	0.01181	0.01162
	(TE_B * Z)	0.00667	0.00630	0.00612
	(TE_B * !Z)	0.01171	0.01135	0.01108
	(TE_B * !Z)	0.00620	0.00582	0.00557

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00055	0.00043	0.00041
	(TE_B * Z)	0.00291	0.00279	0.00277
	(TE_B * !Z)	0.00057	0.00046	0.00045
	(TE_B * !Z)	0.00291	0.00280	0.00278
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00106	0.00091	0.00085
	(TE_B * Z)	0.00368	0.00352	0.00348
	(TE_B * !Z)	0.00119	0.00104	0.00102
	(TE_B * !Z)	0.00374	0.00359	0.00358
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00193	0.00176	0.00168
	(TE_B * Z)	0.00490	0.00472	0.00464
	(TE_B * !Z)	0.00218	0.00201	0.00198
	(TE_B * !Z)	0.00502	0.00483	0.00481
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00334	0.00301	0.00286
	(TE_B * Z)	0.00911	0.00878	0.00862
	(TE_B * !Z)	0.00385	0.00354	0.00348
	(TE_B * !Z)	0.00935	0.00902	0.00897

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00255	0.00231	0.00221
	(A * Z)	-0.00154	-0.00181	-0.00189
	(!A * !Z)	0.00259	0.00233	0.00225
	(!A * !Z)	-0.00151	-0.00176	-0.00185
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00279	0.00244	0.00231
	(A * Z)	-0.00241	-0.00277	-0.00291
	(!A * !Z)	0.00287	0.00252	0.00239
	(!A * !Z)	-0.00232	-0.00272	-0.00284
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00349	0.00300	0.00278
	(A * Z)	-0.00453	-0.00504	-0.00525
	(!A * !Z)	0.00349	0.00306	0.00290
	(!A * !Z)	-0.00444	-0.00497	-0.00511
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00481	0.00412	0.00375
	(A * Z)	-0.00840	-0.00922	-0.00956
	(!A * !Z)	0.00462	0.00410	0.00391
	(!A * !Z)	-0.00854	-0.00913	-0.00936

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00064	0.00052	0.00050
	(A * Z)	0.00472	0.00463	0.00459
	(!A * !Z)	0.00064	0.00054	0.00051
	(!A * !Z)	0.00474	0.00463	0.00461
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00146	0.00134	0.00130
	(A * Z)	0.00668	0.00657	0.00653
	(!A * !Z)	0.00143	0.00131	0.00127
	(!A * !Z)	0.00664	0.00653	0.00650
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00298	0.00279	0.00275
	(A * Z)	0.01096	0.01080	0.01078
	(!A * !Z)	0.00301	0.00282	0.00278
	(!A * !Z)	0.01096	0.01081	0.01079
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00611	0.00585	0.00580
	(A * Z)	0.01939	0.01917	0.01906
	(!A * !Z)	0.00634	0.00604	0.00602
	(!A * !Z)	0.01954	0.01932	0.01927

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT	
D	DE	CLK	Q	Q_N
x	0	R	IQ	IQ_N
0	1	R	0	1
1	1	R	1	0
x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxbp_1	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	DE	CLK	Q	Q_N
sky130_fd_sc_hs__edfxbp_1	0.00170	0.00333	0.00276	0.36407	0.36118

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.00089	0.00104

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)	0.47998	1.49390	9.04795

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.57234	1.18257	3.66010

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)	0.81488	1.78109	9.24167

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)	0.67211	1.18740	3.61461

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)	-0.16194	-0.29231	-1.35788
	setup	CLK (R)	0.23013	0.33646	1.42603

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)	-1.62838	-1.74253	-5.87402
	setup	CLK (R)	1.96001	2.05190	6.09796

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)	-0.16194	-0.29231	-1.35788
	setup	CLK (R)	0.23013	0.33646	1.42603

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)	-1.62838	-1.74253	-5.87402
	setup	CLK (R)	1.96001	2.05190	6.09796

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)	-0.01640	0.01360	0.21364
	setup	CLK (R)	2.01600	2.00286	1.80398

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)	-0.34300	-0.57557	-3.66381
	setup	CLK (R)	1.69922	1.83561	5.82039

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)	-0.01640	0.01360	0.21364
	hold	CLK (R)	-0.56168	-0.66678	-1.06875
	setup	CLK (R)	0.22670	0.31060	1.44346
	setup	CLK (R)	2.01600	2.00286	1.80398

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)	-1.63227	-1.78821	-5.80153
	hold	CLK (R)	-0.34300	-0.57557	-3.66381
	setup	CLK (R)	1.69922	1.83561	5.82039
	setup	CLK (R)	0.37263	0.59406	3.69619

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 ()	0.21228	1.04492	16.50020
	min_pulse_width	CLK ()	0.46436	1.04492	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 ()	0.44145	1.04492	16.50020
	min_pulse_width	CLK ()	1.24063	1.39640	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	0.01060	0.01055	0.01054
	CLK	0.00925	0.00920	0.00919

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01040	0.01026	0.00994
	CLK	0.00894	0.00881	0.00848

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01041	0.01027	0.01016
	CLK	0.00895	0.00882	0.00872

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01059	0.01053	0.01036
	CLK	0.00923	0.00918	0.00901

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00397	0.00389	0.00380
	(CLK * DE)	0.00211	0.00201	0.00194
	(CLK * !DE)	0.00076	0.00077	0.00076
	(CLK * !DE)	-0.00048	-0.00049	-0.00048
	(!CLK * DE * Q * !Q_N)	0.00890	0.00882	0.00867
	(!CLK * DE * Q * !Q_N)	0.00703	0.00695	0.00681
	(!CLK * DE * !Q * Q_N)	0.00849	0.00842	0.00826
	(!CLK * DE * !Q * Q_N)	0.00662	0.00654	0.00638
	(!CLK * !DE)	0.00076	0.00077	0.00076
	(!CLK * !DE)	-0.00048	-0.00049	-0.00048

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00147	0.00132	0.00129
	(CLK * DE)	0.00335	0.00320	0.00317
	(CLK * !DE)	-0.00027	-0.00027	-0.00027
	(CLK * !DE)	0.00094	0.00093	0.00093
	(!CLK * DE * Q * !Q_N)	0.00627	0.00610	0.00597
	(!CLK * DE * Q * !Q_N)	0.00814	0.00797	0.00782
	(!CLK * DE * !Q * Q_N)	0.00659	0.00642	0.00627
	(!CLK * DE * !Q * Q_N)	0.00847	0.00830	0.00813
	(!CLK * !DE)	-0.00027	-0.00027	-0.00027
	(!CLK * !DE)	0.00094	0.00094	0.00093

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00543	0.00519	0.00506
	CLK	0.00265	0.00236	0.00224
	(!CLK * D * Q * !Q_N)	0.00340	0.00321	0.00313
	(!CLK * D * Q * !Q_N)	-0.00006	-0.00025	-0.00032
	(!CLK * D * !Q * Q_N)	0.01108	0.01085	0.01067
	(!CLK * D * !Q * Q_N)	0.00692	0.00668	0.00649
	(!CLK * !D * Q * !Q_N)	0.01051	0.01029	0.01015
	(!CLK * !D * Q * !Q_N)	0.00772	0.00747	0.00734
	(!CLK * !D * !Q * Q_N)	0.00341	0.00322	0.00316
	(!CLK * !D * !Q * Q_N)	0.00000	-0.00019	-0.00026

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00368	0.00354	0.00344
	CLK	0.00648	0.00634	0.00625
	(!CLK * D * Q * !Q_N)	-0.00002	-0.00016	-0.00018
	(!CLK * D * Q * !Q_N)	0.00342	0.00329	0.00326
	(!CLK * D * !Q * Q_N)	0.00717	0.00695	0.00683
	(!CLK * D * !Q * Q_N)	0.01134	0.01114	0.01099
	(!CLK * !D * Q * !Q_N)	0.00861	0.00846	0.00835
	(!CLK * !D * Q * !Q_N)	0.01140	0.01126	0.01117
	(!CLK * !D * !Q * Q_N)	-0.00005	-0.00019	-0.00023
	(!CLK * !D * !Q * Q_N)	0.00337	0.00323	0.00320

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)	0.01023	0.00985	0.00970
	(D * Q * !Q_N)	0.00741	0.00704	0.00688
	(D * !DE * !Q * Q_N)	0.00983	0.00946	0.00927
	(D * !DE * !Q * Q_N)	0.00701	0.00663	0.00645
	(!D * !Q * Q_N)	0.00983	0.00943	0.00928
	(!D * !Q * Q_N)	0.00701	0.00660	0.00645
	(!D * !DE * Q * !Q_N)	0.01023	0.00985	0.00970
	(!D * !DE * Q * !Q_N)	0.00741	0.00704	0.00688

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)	0.00524	0.00497	0.00480
	(D * Q * !Q_N)	0.00807	0.00779	0.00763
	(D * DE * !Q * Q_N)	0.01038	0.01007	0.00974
	(D * DE * !Q * Q_N)	0.01320	0.01289	0.01257
	(D * !DE * !Q * Q_N)	0.00546	0.00519	0.00503
	(D * !DE * !Q * Q_N)	0.00828	0.00800	0.00786
	(!D * DE * Q * !Q_N)	0.01132	0.01103	0.01120
	(!D * DE * Q * !Q_N)	0.01414	0.01384	0.01402
	(!D * !Q * Q_N)	0.00546	0.00519	0.00503
	(!D * !Q * Q_N)	0.00828	0.00801	0.00786
	(!D * !DE * Q * !Q_N)	0.00524	0.00497	0.00480
	(!D * !DE * Q * !Q_N)	0.00807	0.00779	0.00763

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
D	DE	CLK	Q
x	0	R	IQ
0	1	R	0
1	1	R	1
x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxtp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	DE	CLK	Q
sky130_fd_sc_hs__edfxtp_1	0.00173	0.00319	0.00270	0.36279

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.00083	0.00101

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)	0.45636	1.46472	8.97918

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.50898	1.08155	3.49828

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)	-0.15823	-0.29204	-1.36585
	setup	CLK (R)	0.22754	0.33511	1.44024

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)	-1.60872	-1.72785	-5.86612
	setup	CLK (R)	1.94401	2.04123	6.10254

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)	-0.02037	0.00772	0.19841
	setup	CLK (R)	2.00052	1.98725	1.79707

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)	-0.33823	-0.57541	-3.68020
	setup	CLK (R)	1.67917	1.81331	5.81234

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)	-0.02037	0.00772	0.19841
	hold	CLK (R)	-0.55942	-0.64851	-1.03076
	setup	CLK (R)	0.22173	0.30931	1.45819
	setup	CLK (R)	2.00052	1.98725	1.79707

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)	-1.61673	-1.76931	-5.78540
	hold	CLK (R)	-0.33823	-0.57541	-3.68020
	setup	CLK (R)	1.67917	1.81331	5.81234
	setup	CLK (R)	0.36789	0.59519	3.71325

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 ()	0.20082	1.04492	16.50020
	min_pulse_width	CLK ()	0.39943	1.04492	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 ()	0.42617	1.04492	16.50020
	min_pulse_width	CLK ()	1.26919	1.40799	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	0.01765	0.01746	0.01748
	CLK	0.01498	0.01480	0.01483

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01716	0.01684	0.01665
	CLK	0.01430	0.01400	0.01379

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00384	0.00375	0.00366
	(CLK * DE)	0.00196	0.00186	0.00178
	(CLK * !DE)	0.00076	0.00077	0.00077
	(CLK * !DE)	-0.00049	-0.00049	-0.00049
	(!CLK * DE * Q)	0.00875	0.00867	0.00851
	(!CLK * DE * Q)	0.00687	0.00679	0.00663
	(!CLK * DE * !Q)	0.00833	0.00825	0.00808
	(!CLK * DE * !Q)	0.00643	0.00636	0.00619
	(!CLK * !DE)	0.00077	0.00077	0.00077
	(!CLK * !DE)	-0.00049	-0.00049	-0.00049

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00140	0.00125	0.00123
	(CLK * DE)	0.00331	0.00315	0.00312
	(CLK * !DE)	-0.00026	-0.00026	-0.00026
	(CLK * !DE)	0.00096	0.00096	0.00096
	(!CLK * DE * Q)	0.00595	0.00578	0.00564
	(!CLK * DE * Q)	0.00784	0.00767	0.00751
	(!CLK * DE * !Q)	0.00630	0.00613	0.00598
	(!CLK * DE * !Q)	0.00820	0.00802	0.00787
	(!CLK * !DE)	-0.00026	-0.00026	-0.00026
	(!CLK * !DE)	0.00096	0.00096	0.00095

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00529	0.00504	0.00491
	CLK	0.00263	0.00235	0.00224
	(!CLK * D * Q)	0.00329	0.00311	0.00303
	(!CLK * D * Q)	-0.00003	-0.00021	-0.00027
	(!CLK * D * !Q)	0.01082	0.01058	0.01040
	(!CLK * D * !Q)	0.00678	0.00655	0.00636
	(!CLK * !D * Q)	0.01009	0.00987	0.00973
	(!CLK * !D * Q)	0.00743	0.00718	0.00706
	(!CLK * !D * !Q)	0.00331	0.00314	0.00307
	(!CLK * !D * !Q)	0.00005	-0.00015	-0.00021

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00356	0.00342	0.00332
	CLK	0.00622	0.00608	0.00600
	(!CLK * D * Q)	0.00001	-0.00013	-0.00015
	(!CLK * D * Q)	0.00330	0.00318	0.00315
	(!CLK * D * !Q)	0.00690	0.00668	0.00656
	(!CLK * D * !Q)	0.01093	0.01073	0.01057
	(!CLK * !D * Q)	0.00846	0.00833	0.00821
	(!CLK * !D * Q)	0.01112	0.01099	0.01090
	(!CLK * !D * !Q)	-0.00004	-0.00017	-0.00021
	(!CLK * !D * !Q)	0.00324	0.00311	0.00308

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00980	0.00944	0.00928
	(D * Q)	0.00704	0.00668	0.00652
	(D * !DE * !Q)	0.00972	0.00932	0.00919
	(D * !DE * !Q)	0.00696	0.00655	0.00643
	(!D * !Q)	0.00972	0.00932	0.00919
	(!D * !Q)	0.00696	0.00655	0.00643
	(!D * !DE * Q)	0.00980	0.00944	0.00929
	(!D * !DE * Q)	0.00704	0.00668	0.00652

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00524	0.00497	0.00481
	(D * Q)	0.00802	0.00773	0.00758
	(D * DE * !Q)	0.01001	0.00971	0.00941
	(D * DE * !Q)	0.01278	0.01247	0.01218
	(D * !DE * !Q)	0.00513	0.00486	0.00472
	(D * !DE * !Q)	0.00790	0.00762	0.00748
	(!D * DE * Q)	0.01102	0.01072	0.01088
	(!D * DE * Q)	0.01380	0.01348	0.01365
	(!D * !Q)	0.00513	0.00486	0.00472
	(!D * !Q)	0.00790	0.00762	0.00748
	(!D * !DE * Q)	0.00524	0.00497	0.00481
	(!D * !DE * Q)	0.00802	0.00773	0.00758

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	1
1	0	0
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvn_1	7.99200
sky130_fd_sc_hs__einvn_2	11.18880
sky130_fd_sc_hs__einvn_4	17.58240
sky130_fd_sc_hs__einvn_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__einvn_1	0.00268	0.00293	0.16419
sky130_fd_sc_hs__einvn_2	0.00501	0.00443	0.31085
sky130_fd_sc_hs__einvn_4	0.01000	0.00800	0.61237
sky130_fd_sc_hs__einvn_8	0.02000	0.01327	1.16355

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	0.00014	0.00015
sky130_fd_sc_hs__einvn_2	0.00000	0.00018	0.00023
sky130_fd_sc_hs__einvn_4	0.00000	0.00024	0.00043
sky130_fd_sc_hs__einvn_8	0.00000	0.00040	0.00082

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)	0.18205	1.72799	13.18730
	TE_B->Z (RR)	0.04792	0.47144	4.28317
	TE_B->Z (FR)	0.19681	1.79812	13.52700
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.12324	1.46724	13.10220
	TE_B->Z (RR)	0.05847	0.47323	4.28493
	TE_B->Z (FR)	0.16020	1.55437	13.46320
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.11344	1.29025	13.14410
	TE_B->Z (RR)	0.05996	0.47473	4.28643
	TE_B->Z (FR)	0.14878	1.37100	13.45830
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.11386	1.16390	13.17210
	TE_B->Z (RR)	0.08640	0.48375	4.29296
	TE_B->Z (FR)	0.15888	1.24654	13.43530

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.04117	0.57963	4.65905
	TE_B->Z (RF)	0.04747	0.47146	4.28317
	TE_B->Z (FF)	0.16735	0.90262	5.12067
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.03534	0.53187	4.75065
	TE_B->Z (RF)	0.05774	0.47324	4.28495
	TE_B->Z (FF)	0.19964	0.94400	5.47695
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.03469	0.48757	4.81848
	TE_B->Z (RF)	0.05945	0.47476	4.28647
	TE_B->Z (FF)	0.22245	0.97470	6.02759
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.03690	0.46854	5.05543
	TE_B->Z (RF)	0.08502	0.48317	4.29307
	TE_B->Z (FF)	0.31981	1.07423	6.63068

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00026	-0.00034	-0.00034
	A	0.00242	0.00235	0.00233
	TE_B	0.00153	0.00145	0.00143
	TE_B	0.00530	0.00521	0.00521
sky130_fd_sc_hs__einvn_2	A	-0.00122	-0.00127	-0.00127
	A	0.00396	0.00391	0.00392
	TE_B	0.00225	0.00215	0.00212
	TE_B	0.00833	0.00825	0.00821
sky130_fd_sc_hs__einvn_4	A	-0.00236	-0.00246	-0.00239
	A	0.00796	0.00788	0.00792
	TE_B	0.00456	0.00440	0.00434
	TE_B	0.01584	0.01571	0.01565
sky130_fd_sc_hs__einvn_8	A	-0.00444	-0.00466	-0.00445
	A	0.01624	0.01605	0.01622
	TE_B	0.00946	0.00922	0.00915
	TE_B	0.02928	0.02904	0.02907

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00249	0.00247	0.00245
	A	-0.00019	-0.00021	-0.00024
	TE_B	0.00271	0.00262	0.00261
	TE_B	0.00482	0.00474	0.00474
sky130_fd_sc_hs__einvn_2	A	0.00407	0.00410	0.00414
	A	-0.00109	-0.00110	-0.00109
	TE_B	0.00443	0.00433	0.00433
	TE_B	0.00735	0.00723	0.00722
sky130_fd_sc_hs__einvn_4	A	0.00822	0.00823	0.00848
	A	-0.00208	-0.00213	-0.00201
	TE_B	0.00910	0.00886	0.00892
	TE_B	0.01392	0.01375	0.01368
sky130_fd_sc_hs__einvn_8	A	0.01636	0.01620	0.01690
	A	-0.00430	-0.00458	-0.00408
	TE_B	0.01832	0.01804	0.01879
	TE_B	0.02496	0.02471	0.02471

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00062	0.00062	0.00061
	(TE_B * Z)	-0.00098	-0.00098	-0.00098
	(TE_B * !Z)	0.00065	0.00065	0.00065
	(TE_B * !Z)	-0.00094	-0.00093	-0.00093
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00117	0.00116	0.00112
	(TE_B * Z)	-0.00188	-0.00188	-0.00188
	(TE_B * !Z)	0.00128	0.00128	0.00128
	(TE_B * !Z)	-0.00174	-0.00174	-0.00171
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00214	0.00214	0.00206
	(TE_B * Z)	-0.00376	-0.00381	-0.00377
	(TE_B * !Z)	0.00234	0.00235	0.00234
	(TE_B * !Z)	-0.00352	-0.00354	-0.00348
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00412	0.00412	0.00397
	(TE_B * Z)	-0.00746	-0.00744	-0.00748
	(TE_B * !Z)	0.00457	0.00459	0.00458
	(TE_B * !Z)	-0.00699	-0.00702	-0.00691

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00058	-0.00057	-0.00057
	(TE_B * Z)	0.00098	0.00098	0.00098
	(TE_B * !Z)	-0.00065	-0.00065	-0.00065
	(TE_B * !Z)	0.00096	0.00096	0.00095
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00109	-0.00109	-0.00109
	(TE_B * Z)	0.00188	0.00188	0.00188
	(TE_B * !Z)	-0.00128	-0.00128	-0.00128
	(TE_B * !Z)	0.00177	0.00177	0.00171
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00200	-0.00202	-0.00200
	(TE_B * Z)	0.00376	0.00381	0.00377
	(TE_B * !Z)	-0.00234	-0.00235	-0.00234
	(TE_B * !Z)	0.00358	0.00355	0.00348
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00388	-0.00386	-0.00388
	(TE_B * Z)	0.00746	0.00744	0.00748
	(TE_B * !Z)	-0.00457	-0.00459	-0.00458
	(TE_B * !Z)	0.00709	0.00708	0.00691

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00180	0.00162	0.00154
	(A * !Z)	-0.00119	-0.00139	-0.00144
	(!A * Z)	0.00173	0.00157	0.00151
	(!A * Z)	-0.00114	-0.00135	-0.00143
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00217	0.00192	0.00184
	(A * !Z)	-0.00247	-0.00272	-0.00279
	(!A * Z)	0.00198	0.00180	0.00172
	(!A * Z)	-0.00237	-0.00266	-0.00278
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00366	0.00320	0.00305
	(A * !Z)	-0.00464	-0.00509	-0.00522
	(!A * Z)	0.00327	0.00295	0.00281
	(!A * Z)	-0.00445	-0.00497	-0.00518
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00437	0.00386	0.00365
	(A * !Z)	-0.00922	-0.00977	-0.01001
	(!A * Z)	0.00373	0.00340	0.00320
	(!A * Z)	-0.00873	-0.00951	-0.00986

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00092	0.00083	0.00082
	(A * !Z)	0.00393	0.00383	0.00383
	(!A * Z)	0.00096	0.00088	0.00086
	(!A * Z)	0.00386	0.00378	0.00377
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00150	0.00140	0.00137
	(A * !Z)	0.00613	0.00605	0.00602
	(!A * Z)	0.00162	0.00152	0.00149
	(!A * Z)	0.00601	0.00593	0.00591
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00295	0.00275	0.00272
	(A * !Z)	0.01122	0.01107	0.01105
	(!A * Z)	0.00319	0.00300	0.00297
	(!A * Z)	0.01098	0.01083	0.01080
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00627	0.00598	0.00597
	(A * !Z)	0.01985	0.01970	0.01959
	(!A * Z)	0.00657	0.00634	0.00627
	(!A * Z)	0.01923	0.01905	0.01900

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	TE	Z
-	0	HiZ
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvp_1	7.99200
sky130_fd_sc_hs__einvp_2	11.18880
sky130_fd_sc_hs__einvp_4	19.18080
sky130_fd_sc_hs__einvp_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE	Z
sky130_fd_sc_hs__einvp_1	0.00270	0.00259	0.15365
sky130_fd_sc_hs__einvp_2	0.00494	0.00404	0.31569
sky130_fd_sc_hs__einvp_4	0.00999	0.00734	0.61173
sky130_fd_sc_hs__einvp_8	0.02002	0.01151	1.15123

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.00010	0.00021
sky130_fd_sc_hs__einvp_2	0.00000	0.00015	0.00032
sky130_fd_sc_hs__einvp_4	0.00000	0.00022	0.00048
sky130_fd_sc_hs__einvp_8	0.00000	0.00038	0.00087

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)	0.18806	1.72054	12.87810
	TE->Z (FR)	0.27571	0.93606	5.24602
	TE->Z (RR)	0.22627	1.48991	8.76709
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.12077	1.46153	13.10700
	TE->Z (FR)	0.21296	0.83363	4.48168
	TE->Z (RR)	0.20769	1.27843	9.03517
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.11349	1.28872	13.11590
	TE->Z (FR)	0.26513	0.91436	5.09020
	TE->Z (RR)	0.19998	1.11293	9.12353
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.11368	1.16489	13.16080
	TE->Z (FR)	0.42934	1.06593	5.64431
	TE->Z (RR)	0.23727	1.07580	9.52215

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.04172	0.57124	4.53543
	TE->Z (FF)	0.27724	0.93479	5.24636
	TE->Z (RF)	0.04280	0.55192	4.37812
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.03490	0.52436	4.69241
	TE->Z (FF)	0.21390	0.84128	4.49063
	TE->Z (RF)	0.03981	0.50947	4.48102
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.03501	0.49120	4.83854
	TE->Z (FF)	0.26789	0.91191	5.09936
	TE->Z (RF)	0.04116	0.46742	4.45810
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.03726	0.47450	5.11824
	TE->Z (FF)	0.43312	1.07191	5.65150
	TE->Z (RF)	0.04717	0.43519	4.42262

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00040	-0.00048	-0.00048
	A	0.00236	0.00229	0.00200
	TE	0.00454	0.00445	0.00439
	TE	0.00283	0.00273	0.00268
sky130_fd_sc_hs__einvp_2	A	-0.00119	-0.00124	-0.00124
	A	0.00391	0.00386	0.00387
	TE	0.00700	0.00684	0.00681
	TE	0.00455	0.00441	0.00436
sky130_fd_sc_hs__einvp_4	A	-0.00224	-0.00234	-0.00228
	A	0.00807	0.00800	0.00803
	TE	0.01338	0.01317	0.01307
	TE	0.00934	0.00911	0.00903
sky130_fd_sc_hs__einvp_8	A	-0.00444	-0.00466	-0.00446
	A	0.01625	0.01606	0.01627
	TE	0.02341	0.02321	0.02313
	TE	0.01869	0.01848	0.01842

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00259	0.00257	0.00254
	A	-0.00017	-0.00019	-0.00022
	TE	0.00570	0.00562	0.00556
	TE	0.00217	0.00206	0.00201
sky130_fd_sc_hs__einvp_2	A	0.00410	0.00411	0.00413
	A	-0.00099	-0.00101	-0.00099
	TE	0.00900	0.00888	0.00881
	TE	0.00328	0.00313	0.00307
sky130_fd_sc_hs__einvp_4	A	0.00810	0.00809	0.00840
	A	-0.00220	-0.00227	-0.00214
	TE	0.01732	0.01713	0.01703
	TE	0.00651	0.00627	0.00616
sky130_fd_sc_hs__einvp_8	A	0.01626	0.01611	0.01653
	A	-0.00442	-0.00468	-0.00414
	TE	0.03127	0.03112	0.03123
	TE	0.01282	0.01259	0.01245

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00054	0.00054	0.00053
	(!TE * Z)	-0.00099	-0.00098	-0.00099
	(!TE * !Z)	0.00058	0.00058	0.00058
	(!TE * !Z)	-0.00094	-0.00094	-0.00094
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00100	0.00099	0.00096
	(!TE * Z)	-0.00195	-0.00199	-0.00196
	(!TE * !Z)	0.00110	0.00110	0.00110
	(!TE * !Z)	-0.00181	-0.00181	-0.00180
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00191	0.00190	0.00183
	(!TE * Z)	-0.00389	-0.00389	-0.00390
	(!TE * !Z)	0.00215	0.00214	0.00213
	(!TE * !Z)	-0.00364	-0.00363	-0.00360
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00372	0.00371	0.00360
	(!TE * Z)	-0.00755	-0.00764	-0.00756
	(!TE * !Z)	0.00419	0.00420	0.00418
	(!TE * !Z)	-0.00704	-0.00706	-0.00696

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00052	-0.00051	-0.00051
	(!TE * Z)	0.00099	0.00098	0.00099
	(!TE * !Z)	-0.00058	-0.00058	-0.00058
	(!TE * !Z)	0.00097	0.00096	0.00095
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00094	-0.00096	-0.00094
	(!TE * Z)	0.00195	0.00199	0.00196
	(!TE * !Z)	-0.00110	-0.00110	-0.00110
	(!TE * !Z)	0.00187	0.00186	0.00180
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00181	-0.00181	-0.00181
	(!TE * Z)	0.00389	0.00389	0.00390
	(!TE * !Z)	-0.00215	-0.00214	-0.00213
	(!TE * !Z)	0.00371	0.00371	0.00360
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00357	-0.00361	-0.00357
	(!TE * Z)	0.00755	0.00764	0.00756
	(!TE * !Z)	-0.00419	-0.00420	-0.00418
	(!TE * !Z)	0.00712	0.00715	0.00696

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00395	0.00385	0.00379
	(A * !Z)	0.00149	0.00138	0.00134
	(!A * Z)	0.00395	0.00386	0.00380
	(!A * Z)	0.00141	0.00130	0.00126
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00603	0.00591	0.00583
	(A * !Z)	0.00223	0.00208	0.00203
	(!A * Z)	0.00612	0.00600	0.00593
	(!A * Z)	0.00208	0.00194	0.00188
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01145	0.01124	0.01113
	(A * !Z)	0.00461	0.00438	0.00427
	(!A * Z)	0.01161	0.01143	0.01130
	(!A * Z)	0.00431	0.00406	0.00396
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.01972	0.01955	0.01938
	(A * !Z)	0.00925	0.00903	0.00889
	(!A * Z)	0.02000	0.01987	0.01967
	(!A * Z)	0.00870	0.00848	0.00834

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00076	-0.00092	-0.00095
	(A * !Z)	0.00167	0.00154	0.00151
	(!A * Z)	-0.00078	-0.00092	-0.00095
	(!A * Z)	0.00174	0.00162	0.00158
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00197	-0.00218	-0.00225
	(A * !Z)	0.00177	0.00163	0.00158
	(!A * Z)	-0.00208	-0.00224	-0.00230
	(!A * Z)	0.00195	0.00177	0.00168
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00363	-0.00408	-0.00416
	(A * !Z)	0.00311	0.00282	0.00275
	(!A * Z)	-0.00379	-0.00415	-0.00423
	(!A * Z)	0.00347	0.00313	0.00298
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00669	-0.00734	-0.00752
	(A * !Z)	0.00348	0.00317	0.00302
	(!A * Z)	-0.00706	-0.00754	-0.00769
	(!A * Z)	0.00410	0.00378	0.00345

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CIN	COUT	SUM
0	0	0	0	1
0	0	1	0	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	1	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcin_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CIN	COUT	SUM
sky130_fd_sc_hs__fahcin_1	0.00275	0.00698	0.00480	0.16121	0.36038

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	0.00113	0.00119

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)	0.42601	1.78878	7.54180
	B->COUT (RR)	0.43745	1.62453	7.04179
	CIN->COUT (FR)	0.26648	1.50763	11.00200

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.81019	1.67855	7.45350
	B->COUT (FF)	0.69638	1.49889	6.77756
	CIN->COUT (RF)	0.07913	0.64073	4.71624

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)	-	0.96079	2.27565	13.46500
	B->SUM (-R)	-	0.85517	2.09748	12.62760
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.21076	1.26280	9.10206
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.40121	1.70535	11.88050

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)	-	0.89278	1.74233	7.42485
	B->SUM (-F)	-	0.77051	1.59798	6.96312
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.54135	1.41384	7.32629
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.45266	0.96242	3.27253

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01081	0.01073	0.01060
	A	0.00948	0.00943	0.00927
	B	0.01142	0.01148	0.01182
	B	0.00804	0.00818	0.00845
	CIN	0.00449	0.00440	0.00433
	CIN	0.00698	0.00688	0.00682

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.00930	0.00924	0.00912
	A	0.01063	0.01057	0.01039
	B	0.00809	0.00809	0.00847
	B	0.01150	0.01149	0.01187
	CIN	0.00734	0.00721	0.00713
	CIN	0.00486	0.00473	0.00468

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02046	0.02037	0.02059
	A	-	0.01779	0.01771	0.01794
	B	-	0.02106	0.02153	0.02232
	B	-	0.01391	0.01446	0.01546
	CIN	(A * B) + (!A * !B)	0.00682	0.00642	0.00620
	CIN	(A * B) + (!A * !B)	0.01178	0.01138	0.01123
	CIN	(A * !B) + (!A * B)	0.00734	0.00724	0.00722
	CIN	(A * !B) + (!A * B)	0.00486	0.00474	0.00468

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.01684	0.01674	0.01648
	A	-	0.01951	0.01939	0.01913
	B	-	0.01421	0.01441	0.01776
	B	-	0.02094	0.02114	0.02447
	CIN	(A * B) + (!A * !B)	0.01288	0.01240	0.01220
	CIN	(A * B) + (!A * !B)	0.00789	0.00745	0.00722
	CIN	(A * !B) + (!A * B)	0.00449	0.00442	0.00413
	CIN	(A * !B) + (!A * B)	0.00698	0.00690	0.00626

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT_N	SUM
0	0	0	1	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	0
1	0	0	1	1
1	0	1	0	0
1	1	0	0	0
1	1	1	0	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcon_1	38.36160

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT_N	SUM
sky130_fd_sc_hs__fahcon_1	0.00273	0.00880	0.00482	0.16535	0.35369

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	0.00113	0.00124

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)	0.65827	2.15719	10.85780
	B->COUT_N (FR)	0.50042	1.86229	11.23470
	CI->COUT_N (FR)	0.25939	1.52336	11.03700

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)	0.59486	1.17035	3.68523
	B->COUT_N (RF)	0.43070	0.96269	4.91629
	CI->COUT_N (RF)	0.07578	0.62843	4.75806

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)	-	0.82835	2.17942	13.13730
	B->SUM (-R)	-	0.66494	1.93665	12.14520
	CI->SUM (RR)	(A * B) + (!A * !B)	0.20061	1.24232	8.90960
	CI->SUM (FR)	(A * !B) + (!A * B)	0.39250	1.70730	11.88630

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)	-	0.83667	1.68781	7.25468
	B->SUM (-F)	-	0.66189	1.49908	6.60761
	CI->SUM (FF)	(A * B) + (!A * !B)	0.51846	1.36910	7.21235
	CI->SUM (RF)	(A * !B) + (!A * B)	0.47923	0.98390	3.26872

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	0.00833	0.00829	0.00818
	A	0.00970	0.00966	0.00955
	B	0.00630	0.00633	0.00686
	B	0.01067	0.01071	0.01125
	CI	0.00444	0.00426	0.00416
	CI	0.00695	0.00675	0.00665

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.00980	0.00953	0.00935
	A	0.00842	0.00819	0.00798
	B	0.01074	0.01074	0.01100
	B	0.00636	0.00638	0.00661
	CI	0.00740	0.00721	0.00713
	CI	0.00491	0.00471	0.00463

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01782	0.01775	0.01797
	A	-	0.01507	0.01501	0.01524
	B	-	0.02018	0.02291	0.02670
	B	-	0.01140	0.01413	0.01792
	CI	(A * B) + (!A * !B)	0.01271	0.01232	0.01212
	CI	(A * B) + (!A * !B)	0.00769	0.00733	0.00713
	CI	(A * !B) + (!A * B)	0.00444	0.00425	0.00414
	CI	(A * !B) + (!A * B)	0.00695	0.00675	0.00667

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01594	0.01583	0.01623
	A	-	0.01869	0.01857	0.01833
	B	-	0.01297	0.01654	0.02077
	B	-	0.02174	0.02532	0.02942
	CI	(A * B) + (!A * !B)	0.00777	0.00758	0.00796
	CI	(A * B) + (!A * !B)	0.01277	0.01257	0.01244
	CI	(A * !B) + (!A * B)	0.00740	0.00722	0.00733
	CI	(A * !B) + (!A * B)	0.00490	0.00472	0.00461

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fah_1	46.35360
sky130_fd_sc_hs__fah_2	47.95200
sky130_fd_sc_hs__fah_4	51.14880

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT	SUM
sky130_fd_sc_hs__fah_1	0.00455	0.00702	0.00240	0.33687	0.35426
sky130_fd_sc_hs__fah_2	0.00459	0.00804	0.00254	0.67155	0.70718
sky130_fd_sc_hs__fah_4	0.00450	0.00724	0.00242	1.28787	1.38664

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fah_1	0.00000	0.00113	0.00122
sky130_fd_sc_hs__fah_2	0.00000	0.00127	0.00136
sky130_fd_sc_hs__fah_4	0.00000	0.00155	0.00166

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)	0.81826	1.85662	9.47119
	B->COUT (RR)	0.68089	1.78826	9.59722
	CI->COUT (RR)	0.27535	1.43000	9.63087
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.86216	1.70683	9.21307
	B->COUT (RR)	0.65969	1.58146	9.45144
	CI->COUT (RR)	0.25231	1.19788	9.33257
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.79534	1.54616	9.52660
	B->COUT (RR)	0.66983	1.49299	9.72949
	CI->COUT (RR)	0.31046	1.17769	9.97732

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.75496	1.58967	6.31962
	B->COUT (FF)	0.79353	1.62569	9.84552
	CI->COUT (FF)	0.72490	1.57052	7.54042
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.87458	1.72322	6.58186
	B->COUT (FF)	0.88744	1.73932	7.80033
	CI->COUT (FF)	0.72548	1.58298	7.54012
sky130_fd_sc_hs__fah_4	A->COUT (FF)	1.11599	1.98532	6.84922
	B->COUT (FF)	1.05856	1.88810	10.26180
	CI->COUT (FF)	0.90404	1.78286	8.08760

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)	-	0.83603	2.18888	13.12570
	B->SUM (-R)	-	0.75307	2.02063	12.89810
	CI->SUM (RR)	(A * B) + (!A * !B)	0.26879	1.34179	9.25702
	CI->SUM (FR)	(A * !B) + (!A * B)	0.61651	1.98931	12.85880
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.85155	2.01911	12.90990
	B->SUM (-R)	-	0.81091	1.91675	12.45370
	CI->SUM (RR)	(A * B) + (!A * !B)	0.24881	1.19161	9.38604
	CI->SUM (FR)	(A * !B) + (!A * B)	0.61692	1.78156	12.56980
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.84254	1.90916	13.11770
	B->SUM (-R)	-	0.78175	1.79828	13.80620
	CI->SUM (RR)	(A * B) + (!A * !B)	0.33100	1.17455	9.60382
	CI->SUM (FR)	(A * !B) + (!A * B)	0.75556	1.83333	13.20110

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)	-	0.77719	1.62487	6.44146
	B->SUM (-F)	-	0.86144	1.69907	9.68633
	CI->SUM (FF)	(A * B) + (!A * !B)	0.66546	1.53554	7.46260
	CI->SUM (RF)	(A * !B) + (!A * B)	0.66632	1.32456	4.23573
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.89564	1.73924	6.64482
	B->SUM (-F)	-	0.93892	1.76406	9.94796
	CI->SUM (FF)	(A * B) + (!A * !B)	0.71275	1.56444	7.54674
	CI->SUM (RF)	(A * !B) + (!A * B)	0.63270	1.25587	4.22649
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	1.12838	2.00663	6.98568
	B->SUM (-F)	-	1.11295	1.95635	10.04830
	CI->SUM (FF)	(A * B) + (!A * !B)	0.86863	1.75377	8.05155
	CI->SUM (RF)	(A * !B) + (!A * B)	0.95585	1.67087	5.04371

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01362	0.01338	0.01332
	A	0.01145	0.01120	0.01113
	B	0.01219	0.01229	0.01269
	B	0.00891	0.00900	0.00939
	CI	0.00849	0.00848	0.00838
	CI	0.00739	0.00739	0.00729
sky130_fd_sc_hs__fah_2	A	0.01518	0.01518	0.01522
	A	0.01276	0.01277	0.01279
	B	0.01401	0.01435	0.01478
	B	0.01012	0.01047	0.01090
	CI	0.00887	0.00906	0.00906
	CI	0.00756	0.00777	0.00777
sky130_fd_sc_hs__fah_4	A	0.01746	0.01776	0.01815
	A	0.01520	0.01550	0.01588
	B	0.01648	0.01726	0.01817
	B	0.01298	0.01372	0.01468
	CI	0.01340	0.01391	0.01405
	CI	0.01225	0.01278	0.01289

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01127	0.01115	0.01073
	A	0.01355	0.01343	0.01300
	B	0.00912	0.00928	0.05179
	B	0.01241	0.01257	0.05507
	CI	0.00715	0.00720	0.00691
	CI	0.00824	0.00829	0.00799
sky130_fd_sc_hs__fah_2	A	0.01270	0.01280	0.01174
	A	0.01513	0.01521	0.01409
	B	0.00956	0.00991	0.01057
	B	0.01347	0.01380	0.01430
	CI	0.00761	0.00789	0.00766
	CI	0.00893	0.00921	0.00897
sky130_fd_sc_hs__fah_4	A	0.01512	0.01552	0.01516
	A	0.01739	0.01778	0.01723
	B	0.01329	0.01390	0.06434
	B	0.01679	0.01739	0.06781
	CI	0.01161	0.01226	0.01201
	CI	0.01276	0.01341	0.01312

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02354	0.02295	0.02275
	A	-	0.01889	0.01828	0.01808
	B	-	0.00912	0.00929	0.03207
	B	-	0.01241	0.01257	0.03535
	CI	(A * B) + (!A * !B)	0.01169	0.01136	0.01114
	CI	(A * B) + (!A * !B)	0.00921	0.00887	0.00868
	CI	(A * !B) + (!A * B)	0.00715	0.00720	0.00736
	CI	(A * !B) + (!A * B)	0.00823	0.00829	0.00820
sky130_fd_sc_hs__fah_2	A	-	0.02500	0.02446	0.02444
	A	-	0.02014	0.01961	0.01965
	B	-	0.02219	0.02387	0.02597
	B	-	0.01441	0.01607	0.01821
	CI	(A * B) + (!A * !B)	0.01194	0.01201	0.01194
	CI	(A * B) + (!A * !B)	0.00931	0.00937	0.00937
	CI	(A * !B) + (!A * B)	0.00761	0.00789	0.00868
	CI	(A * !B) + (!A * B)	0.00893	0.00921	0.00927
sky130_fd_sc_hs__fah_4	A	-	0.02633	0.02621	0.02671
	A	-	0.02168	0.02155	0.02214
	B	-	0.01329	0.01391	0.06492
	B	-	0.01679	0.01740	0.06840
	CI	(A * B) + (!A * !B)	0.01693	0.01707	0.01694
	CI	(A * B) + (!A * !B)	0.01441	0.01456	0.01451
	CI	(A * !B) + (!A * B)	0.01161	0.01228	0.01293
	CI	(A * !B) + (!A * B)	0.01276	0.01342	0.01364

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.01777	0.01755	0.01759
	A	-	0.02264	0.02242	0.02211
	B	-	0.01532	0.01593	0.11438
	B	-	0.02240	0.02301	0.12137
	CI	(A * B) + (!A * !B)	0.00848	0.00835	0.00830
	CI	(A * B) + (!A * !B)	0.01096	0.01083	0.01073
	CI	(A * !B) + (!A * B)	0.00849	0.00848	0.00812
	CI	(A * !B) + (!A * B)	0.00739	0.00739	0.00701
sky130_fd_sc_hs__fah_2	A	-	0.01973	0.01976	0.01950
	A	-	0.02459	0.02461	0.02433
	B	-	0.01534	0.01618	0.12336
	B	-	0.02317	0.02398	0.13117
	CI	(A * B) + (!A * !B)	0.00948	0.00967	0.01019
	CI	(A * B) + (!A * !B)	0.01213	0.01231	0.01229
	CI	(A * !B) + (!A * B)	0.00887	0.00906	0.00877
	CI	(A * !B) + (!A * B)	0.00756	0.00777	0.00746
sky130_fd_sc_hs__fah_4	A	-	0.02118	0.02162	0.02287
	A	-	0.02596	0.02638	0.02634
	B	-	0.02048	0.02229	0.11700
	B	-	0.02780	0.02959	0.12847
	CI	(A * B) + (!A * !B)	0.01311	0.01368	0.01602
	CI	(A * B) + (!A * !B)	0.01561	0.01620	0.01627
	CI	(A * !B) + (!A * B)	0.01340	0.01392	0.01364
	CI	(A * !B) + (!A * B)	0.01225	0.01279	0.01232

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CIN	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fa_1	28.77120
sky130_fd_sc_hs__fa_2	30.36960
sky130_fd_sc_hs__fa_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CIN	COUT	SUM
sky130_fd_sc_hs__fa_1	0.00957	0.00952	0.00687	0.36123	0.36137
sky130_fd_sc_hs__fa_2	0.01019	0.00989	0.00740	0.67106	0.68999
sky130_fd_sc_hs__fa_4	0.01018	0.01020	0.00722	1.39141	1.38601

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.00046	0.00052
sky130_fd_sc_hs__fa_2	0.00000	0.00060	0.00064
sky130_fd_sc_hs__fa_4	0.00000	0.00087	0.00102

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)	0.21844	1.27500	9.08427
	B->COUT (RR)	0.22960	1.27815	9.04791
	CIN->COUT (RR)	0.21646	1.27939	8.94326
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.22158	1.14077	9.16225
	B->COUT (RR)	0.21306	1.13364	9.12498
	CIN->COUT (RR)	0.21024	1.15017	9.05541
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.27639	1.10177	9.46602
	B->COUT (RR)	0.26201	1.09308	9.43810
	CIN->COUT (RR)	0.26243	1.12146	9.41611

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.71259	1.58475	7.56281
	B->COUT (FF)	0.62959	1.51487	7.42803
	CIN->COUT (FF)	0.55982	1.39326	7.01432
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.86625	1.74773	7.89341
	B->COUT (FF)	0.75931	1.65037	7.77237
	CIN->COUT (FF)	0.78966	1.61266	7.45451
sky130_fd_sc_hs__fa_4	A->COUT (FF)	1.15905	2.07132	8.54549
	B->COUT (FF)	1.08184	1.98358	8.47663
	CIN->COUT (FF)	1.08417	1.92352	8.17293

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.94958	2.21110	13.07870
	B->SUM (-R)	0.87312	2.14319	12.88470
	CIN->SUM (-R)	0.82086	2.02759	12.33480
sky130_fd_sc_hs__fa_2	A->SUM (-R)	1.21138	2.29670	13.42410
	B->SUM (-R)	1.08949	2.18343	13.22660
	CIN->SUM (-R)	1.12868	2.15058	12.83870
sky130_fd_sc_hs__fa_4	A->SUM (-R)	1.70598	2.64567	14.08550
	B->SUM (-R)	1.61052	2.54102	13.95680
	CIN->SUM (-R)	1.62859	2.49375	13.61740

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.85987	1.69539	7.43257
	B->SUM (-F)	0.81338	1.64899	7.50532
	CIN->SUM (-F)	0.47144	1.31421	6.95140
sky130_fd_sc_hs__fa_2	A->SUM (-F)	1.11766	1.97704	7.87668
	B->SUM (-F)	1.10471	1.95696	8.03370
	CIN->SUM (-F)	1.04765	1.79869	7.46596
sky130_fd_sc_hs__fa_4	A->SUM (-F)	1.52005	2.40577	8.63034
	B->SUM (-F)	1.45630	2.34492	8.78301
	CIN->SUM (-F)	1.42082	2.20436	8.28966

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00761	0.00762	0.00755
	A	0.00278	0.00278	0.00269
	B	0.00722	0.00721	0.00708
	B	0.00259	0.00256	0.00241
	CIN	0.00667	0.00652	0.00641
	CIN	0.00352	0.00340	0.00328
sky130_fd_sc_hs__fa_2	A	0.00976	0.00987	0.00982
	A	0.00447	0.00457	0.00451
	B	0.00931	0.00939	0.00929
	B	0.00439	0.00446	0.00435
	CIN	0.00878	0.00873	0.00860
	CIN	0.00531	0.00527	0.00515
sky130_fd_sc_hs__fa_4	A	0.01338	0.01390	0.01426
	A	0.00787	0.00837	0.00853
	B	0.01335	0.01379	0.01404
	B	0.00868	0.00910	0.00918
	CIN	0.01253	0.01288	0.01310
	CIN	0.00925	0.00964	0.00972

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00293	0.00299	0.00308
	A	0.00768	0.00777	0.00754
	B	0.00343	0.00336	0.00314
	B	0.00805	0.00801	0.00776
	CIN	0.00376	0.00374	0.00350
	CIN	0.00686	0.00683	0.00651
sky130_fd_sc_hs__fa_2	A	0.00462	0.00472	0.00473
	A	0.00977	0.00994	0.00963
	B	0.00513	0.00512	0.00482
	B	0.01001	0.01006	0.00972
	CIN	0.00545	0.00550	0.00513
	CIN	0.00902	0.00908	0.00865
sky130_fd_sc_hs__fa_4	A	0.00866	0.00908	0.00880
	A	0.01419	0.01466	0.01435
	B	0.00907	0.00935	0.00899
	B	0.01374	0.01404	0.01363
	CIN	0.00953	0.00990	0.00948
	CIN	0.01289	0.01324	0.01279

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01062	0.01060	0.01055
	A	0.00770	0.00779	0.00776
	B	0.00901	0.00893	0.00885
	B	0.00808	0.00802	0.00798
	CIN	0.00813	0.00793	0.00771
	CIN	0.00688	0.00685	0.00672
sky130_fd_sc_hs__fa_2	A	0.01287	0.01303	0.01307
	A	0.00979	0.00997	0.00996
	B	0.01134	0.01150	0.01155
	B	0.01003	0.01008	0.01004
	CIN	0.01056	0.01060	0.01043
	CIN	0.00904	0.00910	0.00895
sky130_fd_sc_hs__fa_4	A	0.01664	0.01707	0.01732
	A	0.01421	0.01468	0.01486
	B	0.01557	0.01583	0.01594
	B	0.01375	0.01408	0.01424
	CIN	0.01420	0.01444	0.01434
	CIN	0.01291	0.01326	0.01334

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00759	0.00757	0.00736
	A	0.01053	0.01055	0.01050
	B	0.00719	0.00718	0.00685
	B	0.01085	0.01094	0.01085
	CIN	0.00665	0.00653	0.00622
	CIN	0.00876	0.00860	0.00851
sky130_fd_sc_hs__fa_2	A	0.00974	0.00987	0.00953
	A	0.01255	0.01286	0.01285
	B	0.00928	0.00936	0.00898
	B	0.01236	0.01268	0.01267
	CIN	0.00876	0.00871	0.00831
	CIN	0.01081	0.01083	0.01079
sky130_fd_sc_hs__fa_4	A	0.01335	0.01387	0.01364
	A	0.01742	0.01805	0.01829
	B	0.01331	0.01376	0.01340
	B	0.01568	0.01620	0.01646
	CIN	0.01251	0.01288	0.01253
	CIN	0.01425	0.01451	0.01468

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT	
A	B	COUT	SUM
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__ha_1	15.98400
sky130_fd_sc_hs__ha_2	19.18080
sky130_fd_sc_hs__ha_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	A	B	COUT	SUM
sky130_fd_sc_hs__ha_1	0.00454	0.00434	0.35456	0.33908
sky130_fd_sc_hs__ha_2	0.00458	0.00495	0.67438	0.68752
sky130_fd_sc_hs__ha_4	0.00866	0.00814	1.29056	1.36751

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ha_1	0.00000	0.00033	0.00038
sky130_fd_sc_hs__ha_2	0.00000	0.00053	0.00057
sky130_fd_sc_hs__ha_4	0.00000	0.00096	0.00105

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)	0.18202	1.21249	8.86172
	B->COUT (RR)	0.17737	1.20866	8.72979
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.18816	1.10213	9.05220
	B->COUT (RR)	0.18436	1.10642	8.95154
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.20605	1.00109	9.11018
	B->COUT (RR)	0.18996	0.99685	8.97680

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.29156	1.09655	6.32243
	B->COUT (FF)	0.26441	1.06511	6.22532
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.34868	1.15678	6.74241
	B->COUT (FF)	0.32617	1.12933	6.66229
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.36557	1.12683	6.58011
	B->COUT (FF)	0.32416	1.08543	6.47111

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	0.18141	1.20915	8.78183
	A->SUM (FR)	B	0.45370	1.75412	11.77010
	B->SUM (RR)	!A	0.16534	1.18448	8.67901
	B->SUM (FR)	A	0.44005	1.73849	11.66410
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.18665	1.06655	8.89308
	A->SUM (FR)	B	0.57583	1.70758	12.27880
	B->SUM (RR)	!A	0.17488	1.05019	8.82384
	B->SUM (FR)	A	0.55917	1.68871	12.17900
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.20343	0.98364	9.05127
	A->SUM (FR)	B	0.60374	1.59656	12.13290
	B->SUM (RR)	!A	0.18494	0.95838	8.95793
	B->SUM (FR)	A	0.57190	1.57000	12.01790

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	0.45650	1.26770	6.83128
	A->SUM (RF)	B	0.29572	0.78974	3.28593
	B->SUM (FF)	!A	0.41921	1.17953	6.26214
	B->SUM (RF)	A	0.29107	0.78305	3.14598
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.64468	1.47466	7.38916
	A->SUM (RF)	B	0.38112	0.88529	3.56795
	B->SUM (FF)	!A	0.60747	1.38362	6.92048
	B->SUM (RF)	A	0.37726	0.88813	3.47338
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.63006	1.42720	7.38889
	A->SUM (RF)	B	0.42212	0.91111	3.70359
	B->SUM (FF)	!A	0.58031	1.31530	6.88023
	B->SUM (RF)	A	0.40539	0.90415	3.56636

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00548	0.00548	0.00539
	A	0.00282	0.00277	0.00273
	B	0.00522	0.00517	0.00507
	B	0.00299	0.00290	0.00284
sky130_fd_sc_hs__ha_2	A	0.00748	0.00766	0.00758
	A	0.00481	0.00494	0.00491
	B	0.00736	0.00748	0.00740
	B	0.00489	0.00497	0.00493
sky130_fd_sc_hs__ha_4	A	0.01388	0.01428	0.01438
	A	0.00905	0.00942	0.00950
	B	0.01315	0.01352	0.01350
	B	0.00920	0.00955	0.00956

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00289	0.00292	0.00284
	A	0.00554	0.00558	0.00534
	B	0.00327	0.00320	0.00290
	B	0.00548	0.00541	0.00510
sky130_fd_sc_hs__ha_2	A	0.00522	0.00532	0.00507
	A	0.00788	0.00802	0.00767
	B	0.00536	0.00533	0.00500
	B	0.00781	0.00781	0.00741
sky130_fd_sc_hs__ha_4	A	0.00935	0.00963	0.00917
	A	0.01420	0.01454	0.01398
	B	0.01003	0.01031	0.01005
	B	0.01391	0.01418	0.01354

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	0.00290	0.00292	0.00308
	A	B	0.00555	0.00559	0.00557
	A	!B	0.00753	0.00755	0.00752
	A	!B	0.00256	0.00257	0.00255
	B	A	0.00329	0.00321	0.00325
	B	A	0.00549	0.00542	0.00534
	B	!A	0.00583	0.00581	0.00576
	B	!A	0.00178	0.00174	0.00170
sky130_fd_sc_hs__ha_2	A	B	0.00523	0.00532	0.00613
	A	B	0.00789	0.00802	0.00799
	A	!B	0.00976	0.00990	0.00995
	A	!B	0.00482	0.00497	0.00504
	B	A	0.00538	0.00535	0.00583
	B	A	0.00782	0.00783	0.00774
	B	!A	0.00841	0.00853	0.00854
	B	!A	0.00393	0.00406	0.00408
sky130_fd_sc_hs__ha_4	A	B	0.00936	0.00967	0.01128
	A	B	0.01422	0.01458	0.01471
	A	!B	0.01947	0.01978	0.01992
	A	!B	0.00926	0.00955	0.00977
	B	A	0.01006	0.01025	0.01059
	B	A	0.01394	0.01420	0.01421
	B	!A	0.01579	0.01603	0.01614
	B	!A	0.00757	0.00780	0.00797

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	0.00548	0.00547	0.00521
	A	B	0.00282	0.00277	0.00254
	A	!B	0.00157	0.00164	0.00209
	A	!B	0.00638	0.00647	0.00643
	B	A	0.00522	0.00513	0.00488
	B	A	0.00299	0.00290	0.00266
	B	!A	0.00230	0.00225	0.00232
	B	!A	0.00634	0.00636	0.00632
sky130_fd_sc_hs__ha_2	A	B	0.00748	0.00763	0.00727
	A	B	0.00481	0.00494	0.00459
	A	!B	0.00332	0.00355	0.00373
	A	!B	0.00807	0.00836	0.00836
	B	A	0.00736	0.00744	0.00708
	B	A	0.00489	0.00498	0.00462
	B	!A	0.00372	0.00394	0.00401
	B	!A	0.00818	0.00843	0.00842
sky130_fd_sc_hs__ha_4	A	B	0.01388	0.01429	0.01381
	A	B	0.00905	0.00943	0.00894
	A	!B	0.00659	0.00710	0.00721
	A	!B	0.01648	0.01708	0.01713
	B	A	0.01315	0.01350	0.01291
	B	A	0.00920	0.00955	0.00895
	B	!A	0.00811	0.00851	0.00953
	B	!A	0.01640	0.01682	0.01692

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__bufinv_16	39.96000
sky130_fd_sc_hs__bufinv_8	20.77920
sky130_fd_sc_hs__inv_1	4.79520
sky130_fd_sc_hs__inv_16	27.17280
sky130_fd_sc_hs__inv_2	4.79520
sky130_fd_sc_hs__inv_4	7.99200
sky130_fd_sc_hs__inv_8	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__bufinv_16	0.00779	5.60640
sky130_fd_sc_hs__bufinv_8	0.00271	2.52943
sky130_fd_sc_hs__inv_1	0.00271	0.36518
sky130_fd_sc_hs__inv_16	0.04108	5.59891
sky130_fd_sc_hs__inv_2	0.00497	0.72133
sky130_fd_sc_hs__inv_4	0.01004	1.39658
sky130_fd_sc_hs__inv_8	0.01986	2.78331

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.00175	0.00209
sky130_fd_sc_hs__bufinv_8	0.00000	0.00084	0.00100
sky130_fd_sc_hs__inv_1	0.00000	0.00007	0.00010
sky130_fd_sc_hs__inv_16	0.00000	0.00112	0.00154
sky130_fd_sc_hs__inv_2	0.00000	0.00014	0.00019
sky130_fd_sc_hs__inv_4	0.00000	0.00028	0.00039
sky130_fd_sc_hs__inv_8	0.00000	0.00056	0.00077

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)	0.35034	1.23210	11.96140
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.47171	1.44189	12.46720
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.08989	1.40248	13.15190
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.06110	0.94108	13.08650
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.06855	1.22792	13.09230
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.06512	1.11213	13.14240
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.06266	1.01646	13.15060

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.30713	0.70707	3.11655
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.35127	0.81632	3.38816
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.03338	0.59784	5.54851
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.02747	0.40414	5.55129
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.02896	0.53478	5.51970
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.02821	0.49256	5.58984
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.02793	0.44649	5.60180

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.04392	0.04562	0.04650
	A	0.05200	0.05358	0.05509
sky130_fd_sc_hs__bufinv_8	A	0.02290	0.02367	0.02393
	A	0.02566	0.02644	0.02688
sky130_fd_sc_hs__inv_1	A	-0.00046	-0.00047	-0.00047
	A	0.00236	0.00235	0.00235
sky130_fd_sc_hs__inv_16	A	-0.00975	-0.00972	-0.00896
	A	0.03278	0.03273	0.03391
sky130_fd_sc_hs__inv_2	A	-0.00118	-0.00118	-0.00114
	A	0.00398	0.00399	0.00405
sky130_fd_sc_hs__inv_4	A	-0.00230	-0.00225	-0.00217
	A	0.00811	0.00813	0.00829
sky130_fd_sc_hs__inv_8	A	-0.00449	-0.00451	-0.00424
	A	0.01601	0.01608	0.01673

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.05228	0.05419	0.05420
	A	0.04420	0.04608	0.04609
sky130_fd_sc_hs__bufinv_8	A	0.02522	0.02644	0.02585
	A	0.02246	0.02336	0.02305
sky130_fd_sc_hs__inv_1	A	0.00253	0.00252	0.00264
	A	-0.00027	-0.00031	-0.00029
sky130_fd_sc_hs__inv_16	A	0.03326	0.03294	0.03700
	A	-0.00917	-0.00977	-0.00816
sky130_fd_sc_hs__inv_2	A	0.00407	0.00408	0.00412
	A	-0.00106	-0.00108	-0.00102
sky130_fd_sc_hs__inv_4	A	0.00827	0.00824	0.00907
	A	-0.00212	-0.00219	-0.00197
sky130_fd_sc_hs__inv_8	A	0.01613	0.01607	0.01841
	A	-0.00440	-0.00460	-0.00402

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	x	0
0	1	0	0
x	1	1	1
1	0	0	0
1	x	1	1
1	1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__maj3_1	12.78720
sky130_fd_sc_hs__maj3_2	15.98400
sky130_fd_sc_hs__maj3_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__maj3_1	0.00499	0.00469	0.00489	0.36071
sky130_fd_sc_hs__maj3_2	0.00532	0.00509	0.00521	0.71943
sky130_fd_sc_hs__maj3_4	0.00970	0.00919	0.00957	1.39312

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	0.00028	0.00037
sky130_fd_sc_hs__maj3_2	0.00000	0.00035	0.00041
sky130_fd_sc_hs__maj3_4	0.00000	0.00071	0.00083

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)	0.19954	1.23907	8.96361
	B->X (RR)	0.20292	1.24223	8.79986
	C->X (RR)	0.20489	1.23837	8.91700
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.20177	1.09734	9.02951
	B->X (RR)	0.19855	1.10669	8.91011
	C->X (RR)	0.20081	1.09478	8.99736
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.20367	0.99575	9.14997
	B->X (RR)	0.19643	0.99767	8.99597
	C->X (RR)	0.20316	0.99500	9.11265

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.60608	1.45143	7.31259
	B->X (FF)	0.55046	1.33402	6.76040
	C->X (FF)	0.51130	1.37889	7.17558
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.78203	1.62735	7.67238
	B->X (FF)	0.70948	1.47730	7.16420
	C->X (FF)	0.65350	1.50447	7.53057
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.70534	1.51652	7.58789
	B->X (FF)	0.63016	1.37095	7.04600
	C->X (FF)	0.58736	1.40170	7.44507

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00972	0.00972	0.00967
	A	0.00270	0.00267	0.00261
	B	0.00823	0.00796	0.00767
	B	0.00260	0.00232	0.00202
	C	0.00922	0.00911	0.00886
	C	0.00307	0.00292	0.00268
sky130_fd_sc_hs__maj3_2	A	0.01175	0.01189	0.01188
	A	0.00418	0.00429	0.00432
	B	0.01058	0.01055	0.01028
	B	0.00445	0.00440	0.00416
	C	0.01155	0.01161	0.01140
	C	0.00493	0.00494	0.00478
sky130_fd_sc_hs__maj3_4	A	0.02161	0.02183	0.02182
	A	0.00835	0.00851	0.00858
	B	0.01890	0.01894	0.01859
	B	0.00810	0.00810	0.00781
	C	0.02105	0.02110	0.02075
	C	0.00917	0.00917	0.00888

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00182	0.00183	0.00271
	A	0.00884	0.00889	0.00883
	B	0.00252	0.00220	0.00217
	B	0.00816	0.00787	0.00776
	C	0.00274	0.00246	0.00327
	C	0.00895	0.00872	0.00862
sky130_fd_sc_hs__maj3_2	A	0.00353	0.00370	0.00535
	A	0.01151	0.01175	0.01172
	B	0.00416	0.00397	0.00617
	B	0.01036	0.01019	0.01012
	C	0.00443	0.00430	0.00546
	C	0.01127	0.01116	0.01111
sky130_fd_sc_hs__maj3_4	A	0.00634	0.00682	0.00865
	A	0.02054	0.02102	0.02101
	B	0.00769	0.00757	0.00948
	B	0.01855	0.01846	0.01843
	C	0.00830	0.00822	0.01033
	C	0.02039	0.02038	0.02034

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00231	0.00232	0.00230
	(B * C * X)	-0.00207	-0.00212	-0.00210
	(!B * !C * !X)	0.00203	0.00205	0.00203
	(!B * !C * !X)	-0.00232	-0.00233	-0.00232
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00221	0.00221	0.00221
	(B * C * X)	-0.00241	-0.00245	-0.00245
	(!B * !C * !X)	0.00184	0.00186	0.00185
	(!B * !C * !X)	-0.00273	-0.00275	-0.00274
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00407	0.00411	0.00407
	(B * C * X)	-0.00418	-0.00432	-0.00427
	(!B * !C * !X)	0.00353	0.00356	0.00354
	(!B * !C * !X)	-0.00472	-0.00475	-0.00473

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00230	-0.00230	-0.00229
	(B * C * X)	0.00210	0.00212	0.00210
	(!B * !C * !X)	-0.00200	-0.00205	-0.00203
	(!B * !C * !X)	0.00232	0.00235	0.00233
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00221	-0.00221	-0.00221
	(B * C * X)	0.00245	0.00245	0.00245
	(!B * !C * !X)	-0.00181	-0.00186	-0.00185
	(!B * !C * !X)	0.00273	0.00276	0.00275
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00407	-0.00408	-0.00407
	(B * C * X)	0.00428	0.00432	0.00427
	(!B * !C * !X)	-0.00348	-0.00356	-0.00354
	(!B * !C * !X)	0.00474	0.00476	0.00474

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00191	0.00191	0.00190
	(A * C * X)	-0.00136	-0.00135	-0.00134
	(!A * !C * !X)	0.00058	0.00058	0.00056
	(!A * !C * !X)	-0.00261	-0.00262	-0.00265
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00226	0.00227	0.00226
	(A * C * X)	-0.00130	-0.00130	-0.00130
	(!A * !C * !X)	0.00071	0.00071	0.00069
	(!A * !C * !X)	-0.00266	-0.00267	-0.00271
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00376	0.00375	0.00375
	(A * C * X)	-0.00273	-0.00270	-0.00270
	(!A * !C * !X)	0.00133	0.00133	0.00126
	(!A * !C * !X)	-0.00506	-0.00508	-0.00517

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00184	-0.00185	-0.00190
	(A * C * X)	0.00140	0.00140	0.00136
	(!A * !C * !X)	-0.00056	-0.00055	-0.00055
	(!A * !C * !X)	0.00265	0.00265	0.00265
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00219	-0.00220	-0.00226
	(A * C * X)	0.00136	0.00136	0.00131
	(!A * !C * !X)	-0.00068	-0.00068	-0.00067
	(!A * !C * !X)	0.00270	0.00272	0.00271
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00359	-0.00362	-0.00374
	(A * C * X)	0.00283	0.00283	0.00273
	(!A * !C * !X)	-0.00122	-0.00124	-0.00123
	(!A * !C * !X)	0.00514	0.00519	0.00517

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00197	0.00198	0.00196
	(A * B * X)	-0.00173	-0.00176	-0.00175
	(!A * !B * !X)	0.00106	0.00106	0.00105
	(!A * !B * !X)	-0.00259	-0.00260	-0.00262
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00228	0.00230	0.00228
	(A * B * X)	-0.00170	-0.00173	-0.00172
	(!A * !B * !X)	0.00130	0.00131	0.00129
	(!A * !B * !X)	-0.00256	-0.00258	-0.00259
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00390	0.00394	0.00390
	(A * B * X)	-0.00341	-0.00349	-0.00347
	(!A * !B * !X)	0.00239	0.00240	0.00236
	(!A * !B * !X)	-0.00490	-0.00493	-0.00496

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00193	-0.00195	-0.00196
	(A * B * X)	0.00178	0.00179	0.00175
	(!A * !B * !X)	-0.00103	-0.00105	-0.00105
	(!A * !B * !X)	0.00261	0.00263	0.00262
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00225	-0.00226	-0.00228
	(A * B * X)	0.00175	0.00176	0.00172
	(!A * !B * !X)	-0.00127	-0.00130	-0.00129
	(!A * !B * !X)	0.00258	0.00260	0.00259
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00384	-0.00385	-0.00390
	(A * B * X)	0.00353	0.00354	0.00347
	(!A * !B * !X)	-0.00232	-0.00236	-0.00236
	(!A * !B * !X)	0.00497	0.00496	0.00496

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A0	A1	S	Y
0	0	x	1
0	1	0	1
x	1	1	0
1	x	0	0
1	0	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2i_1	12.78720
sky130_fd_sc_hs__mux2i_2	20.77920
sky130_fd_sc_hs__mux2i_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	Y
sky130_fd_sc_hs__mux2i_1	0.00271	0.00255	0.00466	0.15608
sky130_fd_sc_hs__mux2i_2	0.00507	0.00536	0.00757	0.28272
sky130_fd_sc_hs__mux2i_4	0.01001	0.00999	0.01311	0.52651

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	0.00018	0.00024
sky130_fd_sc_hs__mux2i_2	0.00000	0.00035	0.00049
sky130_fd_sc_hs__mux2i_4	0.00000	0.00061	0.00086

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)	-	0.31569	1.86438	13.21010
	A1->Y (FR)	-	0.28348	1.83130	13.18190
	S->Y (RR)	(A0 * !A1)	0.37975	1.66806	9.17100
	S->Y (FR)	(!A0 * A1)	0.34180	1.95125	13.54480
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.33003	1.67751	13.19350
	A1->Y (FR)	-	0.31129	1.63284	12.91810
	S->Y (RR)	(A0 * !A1)	0.39532	1.47543	8.95424
	S->Y (FR)	(!A0 * A1)	0.35830	1.76074	13.46710
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.29485	1.46383	12.96960
	A1->Y (FR)	-	0.29334	1.47679	13.18030
	S->Y (RR)	(A0 * !A1)	0.40966	1.40087	9.54040
	S->Y (FR)	(!A0 * A1)	0.32673	1.54748	13.22160

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)	-	0.05043	0.60180	4.63863
	A1->Y (RF)	-	0.05224	0.62005	4.78070
	S->Y (FF)	(A0 * !A1)	0.22732	0.97127	5.36216
	S->Y (RF)	(!A0 * A1)	0.05978	0.58777	4.50088
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.05985	0.60018	4.92717
	A1->Y (RF)	-	0.05842	0.58900	4.84843
	S->Y (FF)	(A0 * !A1)	0.28121	1.03602	5.91104
	S->Y (RF)	(!A0 * A1)	0.06347	0.54066	4.38730
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.05513	0.54668	4.87890
	A1->Y (RF)	-	0.06071	0.57347	5.12918
	S->Y (FF)	(A0 * !A1)	0.28549	1.00699	5.77010
	S->Y (RF)	(!A0 * A1)	0.06510	0.49925	4.34154

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	-	0.00085	0.00069	0.00066
	A0	-	0.00447	0.00431	0.00428
	A1	-	0.00061	0.00047	0.00045
	A1	-	0.00398	0.00383	0.00380
	S	(A0 * !A1)	0.00638	0.00614	0.00607
	S	(A0 * !A1)	0.00316	0.00290	0.00281
	S	(!A0 * A1)	0.00141	0.00118	0.00111
	S	(!A0 * A1)	0.00786	0.00763	0.00759
sky130_fd_sc_hs__mux2i_2	A0	-	0.00185	0.00146	0.00143
	A0	-	0.00887	0.00849	0.00843
	A1	-	0.00163	0.00125	0.00123
	A1	-	0.00868	0.00831	0.00826
	S	(A0 * !A1)	0.01078	0.01048	0.01038
	S	(A0 * !A1)	0.00664	0.00626	0.00616
	S	(!A0 * A1)	0.00335	0.00297	0.00287
	S	(!A0 * A1)	0.01433	0.01391	0.01386
sky130_fd_sc_hs__mux2i_4	A0	-	0.00201	0.00130	0.00128
	A0	-	0.01599	0.01525	0.01518
	A1	-	0.00208	0.00129	0.00129
	A1	-	0.01545	0.01469	0.01464
	S	(A0 * !A1)	0.01829	0.01789	0.01774
	S	(A0 * !A1)	0.01187	0.01128	0.01110
	S	(!A0 * A1)	0.00527	0.00464	0.00452
	S	(!A0 * A1)	0.02507	0.02442	0.02433

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00414	0.00411	0.00404
	A0	-	0.00070	0.00066	0.00058
	A1	-	0.00404	0.00401	0.00396
	A1	-	0.00067	0.00064	0.00057
	S	(A0 * !A1)	0.00337	0.00316	0.00304
	S	(A0 * !A1)	0.00660	0.00640	0.00630
	S	(!A0 * A1)	0.00814	0.00786	0.00773
	S	(!A0 * A1)	0.00167	0.00139	0.00124
sky130_fd_sc_hs__mux2i_2	A0	-	0.00870	0.00861	0.00858
	A0	-	0.00211	0.00200	0.00189
	A1	-	0.00853	0.00842	0.00843
	A1	-	0.00156	0.00144	0.00135
	S	(A0 * !A1)	0.00754	0.00722	0.00711
	S	(A0 * !A1)	0.01164	0.01138	0.01125
	S	(!A0 * A1)	0.01466	0.01428	0.01409
	S	(!A0 * A1)	0.00361	0.00320	0.00302
sky130_fd_sc_hs__mux2i_4	A0	-	0.01611	0.01584	0.01589
	A0	-	0.00293	0.00261	0.00251
	A1	-	0.01611	0.01582	0.01571
	A1	-	0.00274	0.00246	0.00237
	S	(A0 * !A1)	0.01420	0.01370	0.01360
	S	(A0 * !A1)	0.02050	0.02009	0.01991
	S	(!A0 * A1)	0.02686	0.02619	0.02590
	S	(!A0 * A1)	0.00695	0.00622	0.00593

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00123	0.00125	0.00124
	(A1 * S * !Y)	-0.00078	-0.00079	-0.00078
	(!A1 * S * Y)	0.00059	0.00058	0.00056
	(!A1 * S * Y)	-0.00141	-0.00145	-0.00144
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00224	0.00224	0.00223
	(A1 * S * !Y)	-0.00146	-0.00146	-0.00145
	(!A1 * S * Y)	0.00088	0.00088	0.00084
	(!A1 * S * Y)	-0.00274	-0.00280	-0.00284
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00434	0.00437	0.00436
	(A1 * S * !Y)	-0.00297	-0.00299	-0.00297
	(!A1 * S * Y)	0.00170	0.00168	0.00161
	(!A1 * S * Y)	-0.00556	-0.00566	-0.00572

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00116	-0.00119	-0.00124
	(A1 * S * !Y)	0.00084	0.00084	0.00079
	(!A1 * S * Y)	-0.00056	-0.00056	-0.00056
	(!A1 * S * Y)	0.00144	0.00145	0.00144
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00212	-0.00218	-0.00223
	(A1 * S * !Y)	0.00154	0.00153	0.00147
	(!A1 * S * Y)	-0.00083	-0.00082	-0.00082
	(!A1 * S * Y)	0.00286	0.00285	0.00284
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00411	-0.00423	-0.00436
	(A1 * S * !Y)	0.00312	0.00313	0.00301
	(!A1 * S * Y)	-0.00159	-0.00159	-0.00157
	(!A1 * S * Y)	0.00575	0.00575	0.00572

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00111	0.00111	0.00111
	(A0 * !S * !Y)	-0.00079	-0.00079	-0.00079
	(!A0 * !S * Y)	0.00048	0.00048	0.00045
	(!A0 * !S * Y)	-0.00141	-0.00143	-0.00145
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00230	0.00231	0.00230
	(A0 * !S * !Y)	-0.00160	-0.00160	-0.00159
	(!A0 * !S * Y)	0.00097	0.00097	0.00092
	(!A0 * !S * Y)	-0.00286	-0.00291	-0.00294
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00425	0.00427	0.00427
	(A0 * !S * !Y)	-0.00298	-0.00300	-0.00299
	(!A0 * !S * Y)	0.00155	0.00154	0.00146
	(!A0 * !S * Y)	-0.00563	-0.00568	-0.00579

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00100	-0.00106	-0.00111
	(A0 * !S * !Y)	0.00087	0.00086	0.00080
	(!A0 * !S * Y)	-0.00044	-0.00044	-0.00044
	(!A0 * !S * Y)	0.00145	0.00145	0.00145
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00214	-0.00224	-0.00230
	(A0 * !S * !Y)	0.00171	0.00171	0.00162
	(!A0 * !S * Y)	-0.00091	-0.00090	-0.00090
	(!A0 * !S * Y)	0.00295	0.00294	0.00294
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00396	-0.00417	-0.00427
	(A0 * !S * !Y)	0.00320	0.00319	0.00303
	(!A0 * !S * Y)	-0.00145	-0.00144	-0.00143
	(!A0 * !S * Y)	0.00582	0.00581	0.00579

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00468	0.00449	0.00439
	(A0 * A1 * !Y)	-0.00005	-0.00029	-0.00038
	(!A0 * !A1 * Y)	0.00473	0.00452	0.00444
	(!A0 * !A1 * Y)	-0.00006	-0.00026	-0.00034
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00712	0.00689	0.00675
	(A0 * A1 * !Y)	-0.00024	-0.00058	-0.00070
	(!A0 * !A1 * Y)	0.00713	0.00688	0.00674
	(!A0 * !A1 * Y)	-0.00031	-0.00054	-0.00065
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.01243	0.01209	0.01190
	(A0 * A1 * !Y)	-0.00033	-0.00083	-0.00100
	(!A0 * !A1 * Y)	0.01249	0.01213	0.01193
	(!A0 * !A1 * Y)	-0.00036	-0.00073	-0.00087

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00022	-0.00037	-0.00042
	(A0 * A1 * !Y)	0.00453	0.00437	0.00434
	(!A0 * !A1 * Y)	-0.00027	-0.00044	-0.00049
	(!A0 * !A1 * Y)	0.00449	0.00435	0.00430
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00038	-0.00059	-0.00063
	(A0 * A1 * !Y)	0.00706	0.00682	0.00677
	(!A0 * !A1 * Y)	-0.00035	-0.00061	-0.00067
	(!A0 * !A1 * Y)	0.00703	0.00681	0.00676
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00030	-0.00061	-0.00068
	(A0 * A1 * !Y)	0.01257	0.01221	0.01212
	(!A0 * !A1 * Y)	-0.00033	-0.00072	-0.00082
	(!A0 * !A1 * Y)	0.01244	0.01209	0.01202

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A0	A1	S	X
0	0	x	0
0	1	0	0
x	1	1	1
1	x	0	1
1	0	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2_1	14.38560
sky130_fd_sc_hs__mux2_2	17.58240
sky130_fd_sc_hs__mux2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	X
sky130_fd_sc_hs__mux2_1	0.00261	0.00308	0.00429	0.35618
sky130_fd_sc_hs__mux2_2	0.00241	0.00274	0.00511	0.67172
sky130_fd_sc_hs__mux2_4	0.00460	0.00464	0.00770	1.28812

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	0.00026	0.00031
sky130_fd_sc_hs__mux2_2	0.00000	0.00033	0.00036
sky130_fd_sc_hs__mux2_4	0.00000	0.00065	0.00072

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)	-	0.17057	1.17143	8.49760
	A1->X (RR)	-	0.17203	1.17791	8.53208
	S->X (RR)	(!A0 * A1)	0.16826	1.16715	8.60231
	S->X (FR)	(A0 * !A1)	0.37013	1.64116	11.28570
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.18907	1.10103	8.85974
	A1->X (RR)	-	0.18568	1.09747	8.88202
	S->X (RR)	(!A0 * A1)	0.18201	1.07887	8.93706
	S->X (FR)	(A0 * !A1)	0.37704	1.52336	11.39080
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.24082	1.06911	9.10728
	A1->X (RR)	-	0.23899	1.06773	9.10661
	S->X (RR)	(!A0 * A1)	0.24319	1.03081	9.13101
	S->X (FR)	(A0 * !A1)	0.49047	1.55134	11.99450

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)	-	0.49763	1.27273	6.58640
	A1->X (FF)	-	0.51734	1.29019	6.62552
	S->X (FF)	(!A0 * A1)	0.53602	1.36711	7.09539
	S->X (RF)	(A0 * !A1)	0.59856	1.12180	3.53243
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.62866	1.40132	6.91937
	A1->X (FF)	-	0.67417	1.44412	7.00295
	S->X (FF)	(!A0 * A1)	0.67961	1.51296	7.38956
	S->X (RF)	(A0 * !A1)	0.75347	1.27782	3.61936
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.69080	1.44095	7.02432
	A1->X (FF)	-	0.68224	1.43178	7.00867
	S->X (FF)	(!A0 * A1)	0.71246	1.51988	7.39034
	S->X (RF)	(A0 * !A1)	0.76340	1.28850	3.71150

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	-	0.00648	0.00634	0.00620
	A0	-	0.00306	0.00292	0.00279
	A1	-	0.00669	0.00660	0.00647
	A1	-	0.00298	0.00288	0.00277
	S	(A0 * !A1)	0.00606	0.00582	0.00564
	S	(A0 * !A1)	0.00855	0.00832	0.00816
	S	(!A0 * A1)	0.01053	0.01035	0.01021
	S	(!A0 * A1)	0.00434	0.00415	0.00404
sky130_fd_sc_hs__mux2_2	A0	-	0.00836	0.00846	0.00842
	A0	-	0.00501	0.00511	0.00511
	A1	-	0.00869	0.00878	0.00870
	A1	-	0.00520	0.00529	0.00525
	S	(A0 * !A1)	0.00770	0.00791	0.00785
	S	(A0 * !A1)	0.01080	0.01100	0.01137
	S	(!A0 * A1)	0.01275	0.01262	0.01253
	S	(!A0 * A1)	0.00603	0.00590	0.00583
sky130_fd_sc_hs__mux2_4	A0	-	0.01571	0.01582	0.01579
	A0	-	0.00966	0.00978	0.00977
	A1	-	0.01585	0.01594	0.01584
	A1	-	0.00974	0.00981	0.00980
	S	(A0 * !A1)	0.01449	0.01484	0.01499
	S	(A0 * !A1)	0.01900	0.01939	0.01962
	S	(!A0 * A1)	0.02252	0.02231	0.02211
	S	(!A0 * A1)	0.01184	0.01166	0.01145

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00290	0.00283	0.00281
	A0	-	0.00649	0.00642	0.00638
	A1	-	0.00332	0.00320	0.00316
	A1	-	0.00709	0.00696	0.00690
	S	(A0 * !A1)	0.00936	0.00913	0.00899
	S	(A0 * !A1)	0.00680	0.00659	0.00641
	S	(!A0 * A1)	0.00363	0.00355	0.00405
	S	(!A0 * A1)	0.00978	0.00970	0.00963
sky130_fd_sc_hs__mux2_2	A0	-	0.00394	0.00410	0.00498
	A0	-	0.00782	0.00798	0.00799
	A1	-	0.00481	0.00492	0.00493
	A1	-	0.00835	0.00847	0.00846
	S	(A0 * !A1)	0.01062	0.01068	0.01057
	S	(A0 * !A1)	0.00747	0.00755	0.00737
	S	(!A0 * A1)	0.00486	0.00489	0.00663
	S	(!A0 * A1)	0.01158	0.01161	0.01154
sky130_fd_sc_hs__mux2_4	A0	-	0.00921	0.00947	0.01325
	A0	-	0.01633	0.01655	0.01658
	A1	-	0.00941	0.00971	0.01169
	A1	-	0.01632	0.01658	0.01666
	S	(A0 * !A1)	0.01941	0.01984	0.01992
	S	(A0 * !A1)	0.01477	0.01516	0.01522
	S	(!A0 * A1)	0.01118	0.01123	0.01405
	S	(!A0 * A1)	0.02177	0.02181	0.02168

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00116	0.00117	0.00116
	(A1 * S * X)	-0.00066	-0.00066	-0.00065
	(!A1 * S * !X)	0.00050	0.00049	0.00046
	(!A1 * S * !X)	-0.00128	-0.00130	-0.00132
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00109	0.00111	0.00110
	(A1 * S * X)	-0.00070	-0.00071	-0.00070
	(!A1 * S * !X)	0.00055	0.00054	0.00051
	(!A1 * S * !X)	-0.00120	-0.00122	-0.00126
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00195	0.00196	0.00196
	(A1 * S * X)	-0.00138	-0.00139	-0.00138
	(!A1 * S * !X)	0.00083	0.00083	0.00078
	(!A1 * S * !X)	-0.00250	-0.00257	-0.00258

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00110	-0.00112	-0.00116
	(A1 * S * X)	0.00071	0.00071	0.00067
	(!A1 * S * !X)	-0.00046	-0.00046	-0.00045
	(!A1 * S * !X)	0.00133	0.00133	0.00132
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00102	-0.00104	-0.00110
	(A1 * S * X)	0.00076	0.00076	0.00071
	(!A1 * S * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * S * !X)	0.00126	0.00126	0.00126
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00185	-0.00190	-0.00196
	(A1 * S * X)	0.00146	0.00147	0.00140
	(!A1 * S * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * S * !X)	0.00260	0.00260	0.00258

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00127	0.00128	0.00127
	(A0 * !S * X)	-0.00076	-0.00077	-0.00077
	(!A0 * !S * !X)	0.00045	0.00045	0.00043
	(!A0 * !S * !X)	-0.00154	-0.00156	-0.00156
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00118	0.00119	0.00118
	(A0 * !S * X)	-0.00068	-0.00069	-0.00067
	(!A0 * !S * !X)	0.00040	0.00040	0.00039
	(!A0 * !S * !X)	-0.00139	-0.00140	-0.00141
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00194	0.00195	0.00194
	(A0 * !S * X)	-0.00138	-0.00140	-0.00138
	(!A0 * !S * !X)	0.00069	0.00069	0.00065
	(!A0 * !S * !X)	-0.00263	-0.00267	-0.00270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00121	-0.00126	-0.00127
	(A0 * !S * X)	0.00080	0.00081	0.00078
	(!A0 * !S * !X)	-0.00043	-0.00043	-0.00042
	(!A0 * !S * !X)	0.00157	0.00157	0.00156
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00109	-0.00114	-0.00118
	(A0 * !S * X)	0.00074	0.00074	0.00069
	(!A0 * !S * !X)	-0.00039	-0.00039	-0.00038
	(!A0 * !S * !X)	0.00141	0.00142	0.00141
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00181	-0.00190	-0.00194
	(A0 * !S * X)	0.00147	0.00147	0.00140
	(!A0 * !S * !X)	-0.00065	-0.00065	-0.00064
	(!A0 * !S * !X)	0.00271	0.00271	0.00270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00464	0.00447	0.00439
	(A0 * A1 * X)	0.00035	0.00014	0.00008
	(!A0 * !A1 * !X)	0.00480	0.00462	0.00453
	(!A0 * !A1 * !X)	0.00052	0.00034	0.00027
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00476	0.00454	0.00445
	(A0 * A1 * X)	-0.00012	-0.00034	-0.00042
	(!A0 * !A1 * !X)	0.00459	0.00438	0.00428
	(!A0 * !A1 * !X)	-0.00027	-0.00049	-0.00056
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00739	0.00711	0.00698
	(A0 * A1 * X)	-0.00008	-0.00039	-0.00052
	(!A0 * !A1 * !X)	0.00751	0.00726	0.00709
	(!A0 * !A1 * !X)	0.00007	-0.00024	-0.00034

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	-0.00014	-0.00016
	(A0 * A1 * X)	0.00430	0.00416	0.00413
	(!A0 * !A1 * !X)	-0.00015	-0.00031	-0.00034
	(!A0 * !A1 * !X)	0.00411	0.00397	0.00395
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00041	-0.00058	-0.00061
	(A0 * A1 * X)	0.00445	0.00428	0.00425
	(!A0 * !A1 * !X)	-0.00025	-0.00042	-0.00047
	(!A0 * !A1 * !X)	0.00460	0.00443	0.00440
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00028	-0.00052	-0.00059
	(A0 * A1 * X)	0.00718	0.00696	0.00685
	(!A0 * !A1 * !X)	-0.00040	-0.00067	-0.00076
	(!A0 * !A1 * !X)	0.00706	0.00681	0.00674

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT						OUTPUT
A0	A1	A2	A3	S0	S1	X
0	0	0	0	x	x	0
0	x	0	1	0	x	0
x	0	x	1	1	0	0
x	x	x	1	1	1	1
0	0	1	x	x	0	0
0	x	1	x	0	1	1
0	x	1	0	1	1	0
0	1	0	x	0	x	0
0	1	x	x	1	0	1
0	1	x	0	1	1	0
0	1	1	x	0	0	0
1	0	0	x	0	0	1
1	x	0	0	x	1	0
1	0	x	0	1	x	0
1	x	0	1	0	1	0
1	x	1	x	0	x	1
1	1	0	x	x	0	1
1	1	1	x	1	0	1
1	1	1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux4_1	31.96800
sky130_fd_sc_hs__mux4_2	35.16480
sky130_fd_sc_hs__mux4_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A0	A1	A2	A3	S0	S1	X
sky130_fd_sc_hs__mux4_1	0.00221	0.00233	0.00231	0.00258	0.00800	0.00510	0.35433
sky130_fd_sc_hs__mux4_2	0.00253	0.00238	0.00249	0.00242	0.00911	0.00528	0.72242
sky130_fd_sc_hs__mux4_4	0.00438	0.00420	0.00439	0.00440	0.01259	0.00787	1.37698

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.00068	0.00083
sky130_fd_sc_hs__mux4_2	0.00000	0.00075	0.00089
sky130_fd_sc_hs__mux4_4	0.00000	0.00132	0.00154

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)	0.28212	1.33474	9.22009
	A1->X (RR)	0.28246	1.33785	9.23111
	A2->X (RR)	0.28391	1.34570	9.27613
	A3->X (RR)	0.27621	1.33874	9.26176
	S0->X (-R)	0.53983	1.85526	12.12000
	S1->X (-R)	0.33368	1.62914	11.35950
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.30148	1.20655	9.37453
	A1->X (RR)	0.28613	1.19838	9.36376
	A2->X (RR)	0.27589	1.18212	9.32587
	A3->X (RR)	0.26119	1.17146	9.30601
	S0->X (-R)	0.52841	1.70186	12.15920
	S1->X (-R)	0.34937	1.50255	11.49770
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.34266	1.13065	9.41085
	A1->X (RR)	0.34305	1.13448	9.41269
	A2->X (RR)	0.34611	1.13749	9.41856
	A3->X (RR)	0.32675	1.12701	9.41127
	S0->X (-R)	0.69554	1.77039	12.76590
	S1->X (-R)	0.43498	1.50995	12.05460

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.94265	1.81334	7.80790
	A1->X (FF)	0.97757	1.84647	7.85330
	A2->X (FF)	1.03992	1.91372	7.96022
	A3->X (FF)	1.04291	1.91212	7.95508
	S0->X (-F)	0.96719	1.77788	7.53111
	S1->X (-F)	0.46507	1.24791	6.38573
sky130_fd_sc_hs__mux4_2	A0->X (FF)	1.25456	2.15286	8.43739
	A1->X (FF)	1.24142	2.14294	8.42050
	A2->X (FF)	1.20021	2.09449	8.34531
	A3->X (FF)	1.17305	2.07020	8.31010
	S0->X (-F)	1.19209	2.02436	8.05420
	S1->X (-F)	0.66553	1.48343	7.13267
sky130_fd_sc_hs__mux4_4	A0->X (FF)	1.16774	2.03257	8.28922
	A1->X (FF)	1.15550	2.02364	8.27866
	A2->X (FF)	1.22714	2.09708	8.34459
	A3->X (FF)	1.19462	2.06415	8.32494
	S0->X (-F)	1.14996	1.96292	8.02677
	S1->X (-F)	0.70648	1.50884	7.21645

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01025	0.01029	0.01024
	A0	0.00639	0.00642	0.00641
	A1	0.00951	0.00955	0.00949
	A1	0.00558	0.00561	0.00559
	A2	0.00939	0.00943	0.00939
	A2	0.00554	0.00558	0.00557
	A3	0.00889	0.00892	0.00885
	A3	0.00475	0.00478	0.00474
	S0	0.01794	0.01740	0.01699
	S0	0.01831	0.01825	0.01792
	S1	0.00836	0.00802	0.00787
	S1	0.00827	0.00862	0.00902
sky130_fd_sc_hs__mux4_2	A0	0.01270	0.01290	0.01290
	A0	0.00835	0.00854	0.00862
	A1	0.01186	0.01206	0.01207
	A1	0.00743	0.00763	0.00771
	A2	0.01119	0.01138	0.01140
	A2	0.00699	0.00718	0.00727
	A3	0.01062	0.01081	0.01083
	A3	0.00638	0.00658	0.00667
	S0	0.02097	0.02036	0.01993
	S0	0.01946	0.01949	0.01932
	S1	0.01014	0.00996	0.00984
	S1	0.01023	0.01077	0.01131

sky130_fd_sc_hs__mux4_4	**A0**	0.02308	0.02349	0.02363
	A0	0.01560	0.01600	0.01626
	A1	0.02142	0.02184	0.02197
	A1	0.01394	0.01434	0.01459
	A2	0.02145	0.02187	0.02199
	A2	0.01391	0.01433	0.01457
	A3	0.02044	0.02083	0.02096
	A3	0.01265	0.01306	0.01330
	S0	0.03446	0.03368	0.03312
	S0	0.03246	0.03294	0.03308
	S1	0.01792	0.01781	0.01769
	S1	0.01823	0.01940	0.02132

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00359	0.00370	0.00371
	A0	0.00745	0.00758	0.00755
	A1	0.00445	0.00454	0.00453
	A1	0.00834	0.00845	0.00841
	A2	0.00524	0.00536	0.00555
	A2	0.00910	0.00921	0.00920
	A3	0.00581	0.00587	0.00628
	A3	0.00991	0.00999	0.00996
	S0	0.01647	0.01602	0.01559
	S0	0.01828	0.01803	0.01767
	S1	0.00830	0.00855	0.00909
	S1	0.00739	0.00717	0.00716

sky130_fd_sc_hs__mux4_2	**A0**	0.00641	0.00670	0.00676
	A0	0.01077	0.01107	0.01110
	A1	0.00718	0.00749	0.00756
	A1	0.01158	0.01190	0.01194
	A2	0.00695	0.00723	0.00790
	A2	0.01115	0.01144	0.01149
	A3	0.00743	0.00774	0.00781
	A3	0.01162	0.01193	0.01198
	S0	0.01926	0.01884	0.01835
	S0	0.01937	0.01938	0.01907
	S1	0.01052	0.01094	0.01170
	S1	0.00989	0.00983	0.00985
sky130_fd_sc_hs__mux4_4	**A0**	0.01153	0.01219	0.01262
	A0	0.01904	0.01971	0.01991
	A1	0.01333	0.01400	0.01456
	A1	0.02078	0.02149	0.02167
	A2	0.01313	0.01378	0.01401
	A2	0.02069	0.02134	0.02155
	A3	0.01453	0.01516	0.01539
	A3	0.02222	0.02289	0.02306
	S0	0.03183	0.03160	0.03119
	S0	0.03270	0.03289	0.03247
	S1	0.01865	0.01994	0.02171
	S1	0.01694	0.01704	0.01709

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)**	0.00525	0.00514	0.00503
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00212	0.00201	0.00191
	(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)	0.00092	0.00093	0.00092
	(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)	-0.00107	-0.00109	-0.00108
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00601	0.00590	0.00579
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00240	0.00228	0.00218
	(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)	0.00103	0.00103	0.00102
	(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)	-0.00104	-0.00106	-0.00106
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00982	0.00960	0.00939
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00375	0.00353	0.00334
	(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)	0.00172	0.00174	0.00172
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00219	-0.00227	-0.00224

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)	0.00103	0.00094	0.00093
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00417	0.00407	0.00405
	(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)	-0.00091	-0.00093	-0.00092
	(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)	0.00108	0.00109	0.00108
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00159	0.00145	0.00140
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00520	0.00507	0.00501
	(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)	-0.00101	-0.00102	-0.00102
	(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)	0.00106	0.00106	0.00106

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00229	0.00208	0.00203
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00838	0.00816	0.00809
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00168	-0.00173	-0.00172
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00223	0.00227	0.00224

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)**	0.00453	0.00442	0.00431
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00135	0.00122	0.00114
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00084	0.00084	0.00083
	(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)	-0.00120	-0.00122	-0.00121

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00516	0.00507	0.00496
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00150	0.00139	0.00129
	(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)	0.00090	0.00090	0.00090
	(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)	-0.00115	-0.00116	-0.00116
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00819	0.00799	0.00777
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00218	0.00194	0.00175
	(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	0.00167	0.00165
	(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)	-0.00212	-0.00220	-0.00218

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)**	0.00188	0.00176	0.00172
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00505	0.00495	0.00489
	(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)	-0.00082	-0.00084	-0.00083
	(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)	0.00122	0.00122	0.00121
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00232	0.00220	0.00219
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00600	0.00588	0.00584
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00087	-0.00090	-0.00090
	(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)	0.00115	0.00116	0.00116
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00402	0.00382	0.00377
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01004	0.00985	0.00976
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00162	-0.00167	-0.00165
	(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)	0.00216	0.00220	0.00218

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)	0.00098	0.00099	0.00098
	(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)	-0.00103	-0.00105	-0.00104
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00547	0.00538	0.00527
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00233	0.00222	0.00213
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)	0.00114	0.00114	0.00113
	(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)	-0.00103	-0.00106	-0.00105
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00565	0.00555	0.00543
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00222	0.00209	0.00200

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)**	0.00182	0.00182	0.00180
	(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)	-0.00205	-0.00213	-0.00211
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01005	0.00982	0.00961
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00385	0.00360	0.00344

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)**	-0.00097	-0.00098	-0.00098
	(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)	0.00105	0.00105	0.00104
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00166	0.00156	0.00155
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00480	0.00471	0.00469

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)**	-0.00112	-0.00114	-0.00113
	(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)	0.00106	0.00106	0.00105
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00167	0.00152	0.00148
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00510	0.00496	0.00491
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)**	-0.00178	-0.00182	-0.00180
	(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)	0.00210	0.00213	0.00211
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00220	0.00197	0.00190
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00837	0.00816	0.00809

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)**	0.00499	0.00487	0.00475
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00157	0.00144	0.00133
	(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)	0.00109	0.00110	0.00109
	(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	-0.00118	-0.00117
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00508	0.00498	0.00488
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00164	0.00153	0.00143
	(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)	0.00096	0.00097	0.00096
	(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)	-0.00111	-0.00112	-0.00112
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00899	0.00876	0.00855
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00265	0.00239	0.00219
	(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	0.00175	0.00174
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00209	-0.00214	-0.00213

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)	0.00220	0.00205	0.00202
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00561	0.00548	0.00543
	(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)	-0.00108	-0.00110	-0.00109
	(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)	0.00118	0.00118	0.00117
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00212	0.00200	0.00198
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00557	0.00545	0.00541
	(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)	-0.00094	-0.00097	-0.00096
	(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)	0.00111	0.00112	0.00112

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00353	0.00328	0.00323
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00988	0.00966	0.00956
	(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	-0.00175	-0.00174
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00212	0.00215	0.00213

Passive power(pJ) for S0 rising (conditional):

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

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00659	0.00638	0.00624
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00073	-0.00099	-0.00111
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00986	0.00951	0.00918
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00353	0.00314	0.00281
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00943	0.00903	0.00879
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00112	0.00066	0.00045
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00674	0.00651	0.00637
sky130_fd_sc_hs__mux4_1	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	-0.00057	-0.00083	-0.00096
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00924	0.00906	0.00875
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00287	0.00267	0.00233
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00901	0.00882	0.00851
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00264	0.00242	0.00208
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00914	0.00871	0.00848
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00082	0.00034	0.00013
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00967	0.00923	0.00901
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00136	0.00088	0.00066
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00958	0.00919	0.00887
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00322	0.00282	0.00244
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00996	0.00953	0.00930
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00160	0.00114	0.00091

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00734	0.00709	0.00697
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00010	-0.00013	-0.00028
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01045	0.00991	0.00958
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00440	0.00382	0.00347
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01020	0.00975	0.00950
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00183	0.00137	0.00114
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00717	0.00694	0.00681
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00000	-0.00024	-0.00038
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01085	0.01022	0.00982
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00507	0.00439	0.00400
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01041	0.00977	0.00937
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00470	0.00401	0.00359
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01026	0.00978	0.00952
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00168	0.00115	0.00090
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01036	0.00989	0.00961
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00188	0.00133	0.00110
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00981	0.00925	0.00892
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00385	0.00326	0.00290
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01081	0.01035	0.01012
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00255	0.00205	0.00183

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01041	0.01023	0.01005
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00007	-0.00029	-0.00048
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01583	0.01495	0.01438
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00739	0.00649	0.00583
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01542	0.01479	0.01440
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00296	0.00232	0.00197
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01028	0.01011	0.00992
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	-0.00011	-0.00034	-0.00052
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01607	0.01557	0.01498
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00725	0.00673	0.00613
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01532	0.01481	0.01426
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00659	0.00607	0.00544
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01485	0.01427	0.01391
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00263	0.00199	0.00165
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01532	0.01472	0.01437
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00320	0.00255	0.00224
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01544	0.01456	0.01397
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00697	0.00606	0.00540
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01633	0.01571	0.01532
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00388	0.00320	0.00285

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)**	0.00053	0.00030	0.00015
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00784	0.00764	0.00752
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00453	0.00436	0.00401
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01086	0.01069	0.01039
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00206	0.00169	0.00154
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01037	0.01003	0.00989
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00035	0.00011	0.00000
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00767	0.00745	0.00736
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00426	0.00410	0.00373
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01063	0.01047	0.01016
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00447	0.00431	0.00399
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01085	0.01070	0.01042
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00143	0.00106	0.00092
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00975	0.00939	0.00927
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00086	0.00047	0.00038
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00918	0.00881	0.00873
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00480	0.00462	0.00433
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01118	0.01099	0.01075
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00150	0.00112	0.00103
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00986	0.00950	0.00939

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00064	-0.00084	-0.00093
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00661	0.00640	0.00633
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00340	0.00329	0.00295
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00948	0.00934	0.00906
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00101	0.00059	0.00051
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00935	0.00895	0.00884
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00052	-0.00073	-0.00080
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00664	0.00645	0.00635
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00387	0.00381	0.00345
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00969	0.00962	0.00930
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00428	0.00420	0.00386
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01002	0.00995	0.00964
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00061	0.00015	0.00005
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00923	0.00876	0.00867
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00046	-0.00001	-0.00010
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00898	0.00852	0.00842
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00400	0.00389	0.00357
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00999	0.00988	0.00960
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00033	-0.00005	-0.00016
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00861	0.00824	0.00812

	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00089	-0.00107	-0.00123
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00959	0.00943	0.00930
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00663	0.00652	0.00597
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01510	0.01498	0.01448
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00128	0.00070	0.00054
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01372	0.01314	0.01301
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00081	-0.00099	-0.00111
sky130_fd_sc_hs__mux4_4	**(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)**	0.00962	0.00946	0.00933
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00601	0.00595	0.00543
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01478	0.01476	0.01434
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00675	0.00669	0.00620
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01547	0.01544	0.01502
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00110	0.00059	0.00045
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01334	0.01282	0.01270
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00058	0.00006	-0.00004
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01275	0.01224	0.01214
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00705	0.00692	0.00639
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01556	0.01542	0.01492
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00032	-0.00024	-0.00039
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01278	0.01227	0.01210

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)	0.00434	0.00414	0.00406
	(A1 * A3 * S0 * X)	-0.00023	-0.00045	-0.00051
	(A0 * A2 * !S0 * X)	0.00434	0.00414	0.00406
	(A0 * A2 * !S0 * X)	-0.00023	-0.00045	-0.00051
	(!A1 * !A3 * S0 * !X)	0.00441	0.00420	0.00413
	(!A1 * !A3 * S0 * !X)	-0.00018	-0.00041	-0.00047
	(!A0 * !A2 * !S0 * !X)	0.00441	0.00420	0.00413
	(!A0 * !A2 * !S0 * !X)	-0.00018	-0.00041	-0.00047
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00459	0.00439	0.00433
	(A1 * A3 * S0 * X)	-0.00017	-0.00037	-0.00045
	(A0 * A2 * !S0 * X)	0.00459	0.00439	0.00433
	(A0 * A2 * !S0 * X)	-0.00017	-0.00037	-0.00045
	(!A1 * !A3 * S0 * !X)	0.00450	0.00431	0.00424
	(!A1 * !A3 * S0 * !X)	-0.00024	-0.00046	-0.00051
	(!A0 * !A2 * !S0 * !X)	0.00450	0.00431	0.00424
	(!A0 * !A2 * !S0 * !X)	-0.00024	-0.00046	-0.00051
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00669	0.00645	0.00635
	(A1 * A3 * S0 * X)	-0.00012	-0.00037	-0.00048
	(A0 * A2 * !S0 * X)	0.00669	0.00645	0.00635
	(A0 * A2 * !S0 * X)	-0.00012	-0.00037	-0.00048
	(!A1 * !A3 * S0 * !X)	0.00651	0.00627	0.00617
	(!A1 * !A3 * S0 * !X)	-0.00036	-0.00064	-0.00072
	(!A0 * !A2 * !S0 * !X)	0.00651	0.00627	0.00617
	(!A0 * !A2 * !S0 * !X)	-0.00036	-0.00064	-0.00072

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)	-0.00049	-0.00060	-0.00063
	(A1 * A3 * S0 * X)	0.00408	0.00397	0.00394
	(A0 * A2 * !S0 * X)	-0.00049	-0.00060	-0.00063
	(A0 * A2 * !S0 * X)	0.00408	0.00397	0.00394
	(!A1 * !A3 * S0 * !X)	-0.00054	-0.00068	-0.00067
	(!A1 * !A3 * S0 * !X)	0.00406	0.00393	0.00392
	(!A0 * !A2 * !S0 * !X)	-0.00054	-0.00068	-0.00067
	(!A0 * !A2 * !S0 * !X)	0.00406	0.00393	0.00392
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00051	-0.00063	-0.00066
	(A1 * A3 * S0 * X)	0.00423	0.00413	0.00411
	(A0 * A2 * !S0 * X)	-0.00052	-0.00063	-0.00066
	(A0 * A2 * !S0 * X)	0.00423	0.00413	0.00411
	(!A1 * !A3 * S0 * !X)	-0.00047	-0.00060	-0.00060
	(!A1 * !A3 * S0 * !X)	0.00428	0.00414	0.00414
	(!A0 * !A2 * !S0 * !X)	-0.00047	-0.00060	-0.00060
	(!A0 * !A2 * !S0 * !X)	0.00428	0.00414	0.00414
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00083	-0.00100	-0.00104
	(A1 * A3 * S0 * X)	0.00601	0.00583	0.00579
	(A0 * A2 * !S0 * X)	-0.00083	-0.00100	-0.00104
	(A0 * A2 * !S0 * X)	0.00601	0.00583	0.00579
	(!A1 * !A3 * S0 * !X)	-0.00059	-0.00078	-0.00081
	(!A1 * !A3 * S0 * !X)	0.00632	0.00611	0.00608
	(!A0 * !A2 * !S0 * !X)	-0.00059	-0.00078	-0.00081
	(!A0 * !A2 * !S0 * !X)	0.00632	0.00611	0.00608

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A_N	B	Y
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2b_1	7.99200
sky130_fd_sc_hs__nand2b_2	11.18880
sky130_fd_sc_hs__nand2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	Y
sky130_fd_sc_hs__nand2b_1	0.00219	0.00261	0.34441
sky130_fd_sc_hs__nand2b_2	0.00248	0.00492	0.68039
sky130_fd_sc_hs__nand2b_4	0.00365	0.00753	0.74023

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.00013	0.00024
sky130_fd_sc_hs__nand2b_2	0.00000	0.00025	0.00043
sky130_fd_sc_hs__nand2b_4	0.00000	0.00032	0.00043

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)	0.15103	1.16082	8.64829
	B->Y (FR)	0.12350	1.42662	12.90220
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.13352	0.99599	8.56590
	B->Y (FR)	0.11484	1.28426	13.18470
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.16666	1.03462	8.76298
	B->Y (FR)	0.16069	1.31953	13.25070

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)	0.21151	1.03114	6.39992
	B->Y (RF)	0.05012	0.66736	6.01446
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.24447	1.06982	6.99457
	B->Y (RF)	0.05097	0.61449	6.13365
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.19304	0.91994	5.70644
	B->Y (RF)	0.04682	0.49179	4.83203

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	0.00497	0.00485	0.00481
	A_N	0.00267	0.00254	0.00251
	B	0.00021	0.00016	0.00016
	B	0.00281	0.00277	0.00277
sky130_fd_sc_hs__nand2b_2	A_N	0.00654	0.00654	0.00655
	A_N	0.00415	0.00416	0.00418
	B	0.00007	-0.00007	-0.00005
	B	0.00512	0.00494	0.00500
sky130_fd_sc_hs__nand2b_4	A_N	0.00879	0.00874	0.00890
	A_N	0.00535	0.00531	0.00547
	B	-0.00014	-0.00039	-0.00040
	B	0.00760	0.00729	0.00728

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00264	0.00255	0.00309
	A_N	0.00494	0.00487	0.00486
	B	0.00330	0.00328	0.00330
	B	0.00070	0.00067	0.00067
sky130_fd_sc_hs__nand2b_2	A_N	0.00454	0.00445	0.00461
	A_N	0.00692	0.00694	0.00692
	B	0.00634	0.00629	0.00679
	B	0.00124	0.00119	0.00122
sky130_fd_sc_hs__nand2b_4	A_N	0.00783	0.00773	0.00778
	A_N	0.01127	0.01115	0.01118
	B	0.01109	0.01102	0.01132
	B	0.00331	0.00321	0.00326

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00390	0.00372	0.00365
	(!B * Y)	0.00144	0.00125	0.00119
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00541	0.00521	0.00512
	(!B * Y)	0.00267	0.00246	0.00238
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00668	0.00635	0.00624
	(!B * Y)	0.00268	0.00234	0.00223

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00017	0.00002	-0.00000
	(!B * Y)	0.00263	0.00249	0.00247
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00067	0.00049	0.00044
	(!B * Y)	0.00344	0.00325	0.00319
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00116	0.00091	0.00085
	(!B * Y)	0.00521	0.00495	0.00487

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00117	0.00118	0.00117
	(A_N * Y)	-0.00120	-0.00120	-0.00120
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00199	0.00200	0.00199
	(A_N * Y)	-0.00249	-0.00250	-0.00248
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00401	0.00403	0.00401
	(A_N * Y)	-0.00263	-0.00263	-0.00262

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00116	-0.00117	-0.00117
	(A_N * Y)	0.00120	0.00121	0.00120
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00196	-0.00200	-0.00199
	(A_N * Y)	0.00251	0.00250	0.00248
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00397	-0.00402	-0.00401
	(A_N * Y)	0.00264	0.00264	0.00263

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2_1	4.79520
sky130_fd_sc_hs__nand2_2	7.99200
sky130_fd_sc_hs__nand2_4	14.38560
sky130_fd_sc_hs__nand2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nand2_1	0.00265	0.00254	0.36127
sky130_fd_sc_hs__nand2_2	0.00506	0.00494	0.70770
sky130_fd_sc_hs__nand2_4	0.00774	0.00735	0.70955
sky130_fd_sc_hs__nand2_8	0.01478	0.01452	1.39644

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.00009	0.00019
sky130_fd_sc_hs__nand2_2	0.00000	0.00017	0.00039
sky130_fd_sc_hs__nand2_4	0.00000	0.00025	0.00039
sky130_fd_sc_hs__nand2_8	0.00000	0.00049	0.00077

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)	0.09488	1.40439	13.07850
	B->Y (FR)	0.11781	1.42354	13.10330
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.08152	1.24034	13.05980
	B->Y (FR)	0.11171	1.26436	13.04350
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.11761	1.27344	13.09530
	B->Y (FR)	0.17642	1.32955	13.11180
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.09236	1.13032	13.03430
	B->Y (FR)	0.14736	1.17325	12.85990

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.04202	0.69620	6.45797
	B->Y (RF)	0.04646	0.67150	6.13939
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.04038	0.65340	6.74570
	B->Y (RF)	0.04841	0.62973	6.36100
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.03812	0.52040	5.23186
	B->Y (RF)	0.04480	0.49532	4.81617
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.03508	0.48406	5.48667
	B->Y (RF)	0.04161	0.44666	4.79737

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00031	-0.00035	-0.00035
	A	0.00248	0.00245	0.00245
	B	0.00001	-0.00004	-0.00005
	B	0.00332	0.00327	0.00324
sky130_fd_sc_hs__nand2_2	A	-0.00096	-0.00101	-0.00096
	A	0.00445	0.00440	0.00448
	B	0.00015	-0.00002	0.00000
	B	0.00668	0.00652	0.00652
sky130_fd_sc_hs__nand2_4	A	-0.00187	-0.00209	-0.00203
	A	0.00635	0.00613	0.00629
	B	0.00019	-0.00017	-0.00018
	B	0.01060	0.01022	0.01026
sky130_fd_sc_hs__nand2_8	A	-0.00419	-0.00444	-0.00420
	A	0.01174	0.01150	0.01170
	B	-0.00042	-0.00103	-0.00098
	B	0.02013	0.01956	0.01960

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00267	0.00267	0.00269
	A	-0.00012	-0.00016	-0.00015
	B	0.00324	0.00321	0.00366
	B	-0.00010	-0.00013	-0.00013
sky130_fd_sc_hs__nand2_2	A	0.00526	0.00523	0.00593
	A	-0.00013	-0.00019	-0.00015
	B	0.00654	0.00655	0.00658
	B	-0.00008	-0.00015	-0.00011
sky130_fd_sc_hs__nand2_4	A	0.00975	0.00964	0.00972
	A	0.00155	0.00139	0.00147
	B	0.01219	0.01212	0.01234
	B	0.00162	0.00150	0.00153
sky130_fd_sc_hs__nand2_8	A	0.01554	0.01537	0.01624
	A	-0.00036	-0.00061	-0.00040
	B	0.02072	0.02063	0.02107
	B	-0.00018	-0.00040	-0.00026

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00042	0.00042	0.00041
	(!B * Y)	-0.00148	-0.00149	-0.00150
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00079	0.00079	0.00075
	(!B * Y)	-0.00287	-0.00288	-0.00293
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00154	0.00154	0.00147
	(!B * Y)	-0.00347	-0.00349	-0.00359
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00306	0.00306	0.00291
	(!B * Y)	-0.00668	-0.00672	-0.00690

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00040	-0.00040	-0.00040
	(!B * Y)	0.00150	0.00150	0.00150
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00073	-0.00073	-0.00073
	(!B * Y)	0.00294	0.00295	0.00293
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00143	-0.00145	-0.00143
	(!B * Y)	0.00358	0.00363	0.00359
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00283	-0.00288	-0.00284
	(!B * Y)	0.00686	0.00699	0.00690

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00097	0.00098	0.00097
	(!A * Y)	-0.00126	-0.00127	-0.00126
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00189	0.00189	0.00188
	(!A * Y)	-0.00248	-0.00248	-0.00247
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00371	0.00376	0.00373
	(!A * Y)	-0.00259	-0.00261	-0.00260
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.00747	0.00753	0.00746
	(!A * Y)	-0.00519	-0.00523	-0.00520

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00095	-0.00098	-0.00097
	(!A * Y)	0.00126	0.00128	0.00127
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00184	-0.00189	-0.00188
	(!A * Y)	0.00249	0.00249	0.00248
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00364	-0.00375	-0.00373
	(!A * Y)	0.00261	0.00262	0.00260
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.00724	-0.00753	-0.00746
	(!A * Y)	0.00519	0.00526	0.00521

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A_N	B	C	Y
x	0	x	1
x	1	0	1
0	1	1	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3b_1	9.59040
sky130_fd_sc_hs__nand3b_2	14.38560
sky130_fd_sc_hs__nand3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	Y
sky130_fd_sc_hs__nand3b_1	0.00205	0.00263	0.00255	0.35501
sky130_fd_sc_hs__nand3b_2	0.00245	0.00498	0.00496	0.70789
sky130_fd_sc_hs__nand3b_4	0.00345	0.00714	0.00720	0.69441

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	0.00013	0.00033
sky130_fd_sc_hs__nand3b_2	0.00000	0.00025	0.00062
sky130_fd_sc_hs__nand3b_4	0.00000	0.00034	0.00062

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)	0.15965	1.14804	8.53133
	B->Y (FR)	0.14212	1.45558	13.12570
	C->Y (FR)	0.15854	1.46098	13.03580
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.14623	1.00382	8.61830
	B->Y (FR)	0.12467	1.27755	13.06220
	C->Y (FR)	0.14597	1.30522	13.15510
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.18008	1.06261	8.75385
	B->Y (FR)	0.17032	1.31290	12.95410
	C->Y (FR)	0.22691	1.39291	13.23610

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)	0.22357	1.11738	7.26964
	B->Y (RF)	0.07085	0.78260	7.03187
	C->Y (RF)	0.07562	0.73959	6.55625
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.27030	1.17236	8.22266
	B->Y (RF)	0.07269	0.74624	7.53650
	C->Y (RF)	0.07634	0.68744	6.87997
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.22218	1.03831	7.05036
	B->Y (RF)	0.07756	0.67968	6.69289
	C->Y (RF)	0.08145	0.56920	5.43836

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	0.00480	0.00468	0.00463
	A_N	0.00280	0.00268	0.00264
	B	0.00039	0.00029	0.00029
	B	0.00308	0.00299	0.00299
	C	0.00068	0.00061	0.00059
	C	0.00373	0.00367	0.00365
sky130_fd_sc_hs__nand3b_2	A_N	0.00678	0.00677	0.00676
	A_N	0.00455	0.00454	0.00455
	B	0.00039	0.00016	0.00018
	B	0.00577	0.00541	0.00554
	C	0.00101	0.00083	0.00082
	C	0.00743	0.00709	0.00734
sky130_fd_sc_hs__nand3b_4	A_N	0.00905	0.00921	0.00942
	A_N	0.00565	0.00583	0.00603
	B	0.00041	-0.00017	-0.00015
	B	0.00799	0.00738	0.00745
	C	0.00155	0.00122	0.00121
	C	0.01146	0.01114	0.01110

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00343	0.00334	0.00341
	A_N	0.00542	0.00533	0.00532
	B	0.00403	0.00400	0.00433
	B	0.00134	0.00131	0.00131
	C	0.00456	0.00453	0.00471
	C	0.00145	0.00142	0.00142
sky130_fd_sc_hs__nand3b_2	A_N	0.00611	0.00611	0.00614
	A_N	0.00835	0.00834	0.00834
	B	0.00764	0.00756	0.00766
	B	0.00223	0.00214	0.00219
	C	0.00879	0.00876	0.00882
	C	0.00221	0.00214	0.00217
sky130_fd_sc_hs__nand3b_4	A_N	0.00837	0.00828	0.00862
	A_N	0.01176	0.01168	0.01169
	B	0.01119	0.01112	0.01163
	B	0.00355	0.00348	0.00351
	C	0.01415	0.01412	0.01432
	C	0.00390	0.00382	0.00385

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)	0.00370	0.00353	0.00346
	(B * !C * Y)	0.00140	0.00123	0.00117
	(!B * Y)	0.00368	0.00351	0.00345
	(!B * Y)	0.00140	0.00123	0.00117
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00564	0.00545	0.00536
	(B * !C * Y)	0.00272	0.00251	0.00243
	(!B * Y)	0.00555	0.00536	0.00527
	(!B * Y)	0.00271	0.00250	0.00243
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00674	0.00644	0.00632
	(B * !C * Y)	0.00262	0.00231	0.00221
	(!B * Y)	0.00660	0.00631	0.00620
	(!B * Y)	0.00259	0.00228	0.00219

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)	0.00028	0.00014	0.00011
	(B * !C * Y)	0.00263	0.00250	0.00245
	(!B * Y)	0.00029	0.00015	0.00013
	(!B * Y)	0.00257	0.00244	0.00242
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00061	0.00043	0.00036
	(B * !C * Y)	0.00364	0.00346	0.00335
	(!B * Y)	0.00070	0.00053	0.00047
	(!B * Y)	0.00357	0.00339	0.00331
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00123	0.00101	0.00090
	(B * !C * Y)	0.00559	0.00535	0.00517
	(!B * Y)	0.00136	0.00115	0.00108
	(!B * Y)	0.00542	0.00520	0.00512

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)	0.00108	0.00109	0.00108
	(A_N * C * Y)	-0.00123	-0.00124	-0.00123
	(A_N * !C * Y)	0.00070	0.00071	0.00071
	(A_N * !C * Y)	-0.00123	-0.00124	-0.00124
	(!A_N * !C * Y)	0.00046	0.00046	0.00046
	(!A_N * !C * Y)	-0.00145	-0.00145	-0.00145
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00201	0.00201	0.00201
	(A_N * C * Y)	-0.00254	-0.00255	-0.00255
	(A_N * !C * Y)	0.00126	0.00127	0.00126
	(A_N * !C * Y)	-0.00255	-0.00256	-0.00255
	(!A_N * !C * Y)	0.00098	0.00099	0.00099
	(!A_N * !C * Y)	-0.00272	-0.00274	-0.00273
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00408	0.00410	0.00407
	(A_N * C * Y)	-0.00249	-0.00249	-0.00248
	(A_N * !C * Y)	0.00233	0.00235	0.00233
	(A_N * !C * Y)	-0.00272	-0.00273	-0.00271
	(!A_N * !C * Y)	0.00184	0.00186	0.00188
	(!A_N * !C * Y)	-0.00296	-0.00298	-0.00296

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)	-0.00107	-0.00109	-0.00108
	(A_N * C * Y)	0.00123	0.00125	0.00124
	(A_N * !C * Y)	-0.00070	-0.00071	-0.00071
	(A_N * !C * Y)	0.00124	0.00124	0.00124
	(!A_N * !C * Y)	-0.00043	-0.00044	-0.00044
	(!A_N * !C * Y)	0.00147	0.00148	0.00146
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00199	-0.00201	-0.00201
	(A_N * C * Y)	0.00256	0.00257	0.00255
	(A_N * !C * Y)	-0.00126	-0.00127	-0.00126
	(A_N * !C * Y)	0.00256	0.00256	0.00256
	(!A_N * !C * Y)	-0.00093	-0.00093	-0.00096
	(!A_N * !C * Y)	0.00279	0.00280	0.00276
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00400	-0.00409	-0.00407
	(A_N * C * Y)	0.00249	0.00250	0.00249
	(A_N * !C * Y)	-0.00233	-0.00235	-0.00233
	(A_N * !C * Y)	0.00275	0.00277	0.00276
	(!A_N * !C * Y)	-0.00178	-0.00178	-0.00182
	(!A_N * !C * Y)	0.00306	0.00307	0.00300

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)	0.00093	0.00094	0.00093
	(A_N * B * Y)	-0.00121	-0.00122	-0.00121
	(A_N * !B * Y)	0.00094	0.00095	0.00094
	(A_N * !B * Y)	-0.00121	-0.00122	-0.00121
	(!A_N * !B * Y)	0.00090	0.00091	0.00090
	(!A_N * !B * Y)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00201	0.00202	0.00202
	(A_N * B * Y)	-0.00244	-0.00245	-0.00244
	(A_N * !B * Y)	0.00204	0.00206	0.00204
	(A_N * !B * Y)	-0.00244	-0.00246	-0.00244
	(!A_N * !B * Y)	0.00180	0.00180	0.00179
	(!A_N * !B * Y)	-0.00269	-0.00269	-0.00269
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00385	0.00390	0.00387
	(A_N * B * Y)	-0.00251	-0.00253	-0.00252
	(A_N * !B * Y)	0.00384	0.00389	0.00386
	(A_N * !B * Y)	-0.00257	-0.00258	-0.00255
	(!A_N * !B * Y)	0.00352	0.00353	0.00353
	(!A_N * !B * Y)	-0.00289	-0.00290	-0.00287

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)	-0.00091	-0.00094	-0.00093
	(A_N * B * Y)	0.00122	0.00122	0.00122
	(A_N * !B * Y)	-0.00092	-0.00095	-0.00094
	(A_N * !B * Y)	0.00122	0.00122	0.00122
	(!A_N * !B * Y)	-0.00088	-0.00091	-0.00090
	(!A_N * !B * Y)	0.00125	0.00127	0.00126
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00197	-0.00202	-0.00202
	(A_N * B * Y)	0.00246	0.00245	0.00245
	(A_N * !B * Y)	-0.00199	-0.00205	-0.00204
	(A_N * !B * Y)	0.00245	0.00246	0.00245
	(!A_N * !B * Y)	-0.00175	-0.00180	-0.00179
	(!A_N * !B * Y)	0.00269	0.00271	0.00269
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00374	-0.00390	-0.00387
	(A_N * B * Y)	0.00256	0.00253	0.00252
	(A_N * !B * Y)	-0.00374	-0.00389	-0.00386
	(A_N * !B * Y)	0.00261	0.00259	0.00255
	(!A_N * !B * Y)	-0.00341	-0.00353	-0.00353
	(!A_N * !B * Y)	0.00294	0.00291	0.00287

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	Y
0	x	x	1
1	0	x	1
1	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3_1	7.99200
sky130_fd_sc_hs__nand3_2	11.18880
sky130_fd_sc_hs__nand3_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nand3_1	0.00269	0.00270	0.00262	0.36073
sky130_fd_sc_hs__nand3_2	0.00502	0.00541	0.00491	0.62202
sky130_fd_sc_hs__nand3_4	0.00748	0.00726	0.00727	0.71070

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	0.00008	0.00029
sky130_fd_sc_hs__nand3_2	0.00000	0.00017	0.00058
sky130_fd_sc_hs__nand3_4	0.00000	0.00027	0.00058

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)	0.11553	1.41854	13.09060
	B->Y (FR)	0.14198	1.44963	13.10550
	C->Y (FR)	0.15962	1.46813	13.14510
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.10054	1.27505	13.07370
	B->Y (FR)	0.12486	1.24654	12.33950
	C->Y (FR)	0.14791	1.27554	12.38630
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.11510	1.26805	13.10260
	B->Y (FR)	0.17302	1.32061	13.05970
	C->Y (FR)	0.21189	1.35762	12.99370

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.05876	0.79852	7.33314
	B->Y (RF)	0.06859	0.78549	7.09059
	C->Y (RF)	0.07215	0.74165	6.61630
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.04972	0.70780	7.12742
	B->Y (RF)	0.06419	0.70402	6.91617
	C->Y (RF)	0.07021	0.66291	6.42074
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.04226	0.58304	5.92419
	B->Y (RF)	0.05509	0.57125	5.61173
	C->Y (RF)	0.05950	0.52422	5.01665

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00023	-0.00030	-0.00031
	A	0.00275	0.00269	0.00270
	B	0.00021	0.00011	0.00009
	B	0.00371	0.00362	0.00364
	C	0.00043	0.00035	0.00033
	C	0.00450	0.00443	0.00440
sky130_fd_sc_hs__nand3_2	A	-0.00087	-0.00100	-0.00095
	A	0.00475	0.00451	0.00471
	B	0.00024	-0.00002	-0.00001
	B	0.00719	0.00681	0.00696
	C	0.00109	0.00085	0.00084
	C	0.00899	0.00866	0.00873
sky130_fd_sc_hs__nand3_4	A	-0.00187	-0.00211	-0.00202
	A	0.00646	0.00606	0.00632
	B	0.00020	-0.00033	-0.00031
	B	0.01069	0.01017	0.01017
	C	0.00146	0.00111	0.00104
	C	0.01434	0.01397	0.01389

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00372	0.00368	0.00380
	A	0.00075	0.00069	0.00070
	B	0.00430	0.00425	0.00426
	B	0.00076	0.00072	0.00073
	C	0.00488	0.00487	0.00509
	C	0.00072	0.00068	0.00068
sky130_fd_sc_hs__nand3_2	A	0.00628	0.00621	0.00621
	A	0.00065	0.00054	0.00059
	B	0.00765	0.00762	0.00786
	B	0.00060	0.00050	0.00053
	C	0.00874	0.00867	0.00892
	C	0.00063	0.00055	0.00058
sky130_fd_sc_hs__nand3_4	A	0.00947	0.00935	0.00941
	A	0.00117	0.00102	0.00110
	B	0.01191	0.01184	0.01218
	B	0.00122	0.00113	0.00116
	C	0.01433	0.01428	0.01467
	C	0.00107	0.00098	0.00100

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00040	0.00040	0.00037
	(B * !C * Y)	-0.00144	-0.00145	-0.00150
	(!B * Y)	0.00041	0.00041	0.00039
	(!B * Y)	-0.00148	-0.00148	-0.00150
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00078	0.00079	0.00071
	(B * !C * Y)	-0.00266	-0.00269	-0.00280
	(!B * Y)	0.00081	0.00081	0.00077
	(!B * Y)	-0.00274	-0.00276	-0.00281
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00147	0.00147	0.00134
	(B * !C * Y)	-0.00323	-0.00325	-0.00347
	(!B * Y)	0.00150	0.00150	0.00143
	(!B * Y)	-0.00338	-0.00341	-0.00350

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00037	-0.00038	-0.00037
	(B * !C * Y)	0.00149	0.00151	0.00150
	(!B * Y)	-0.00038	-0.00038	-0.00038
	(!B * Y)	0.00150	0.00151	0.00150
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00071	-0.00071	-0.00071
	(B * !C * Y)	0.00281	0.00283	0.00282
	(!B * Y)	-0.00075	-0.00075	-0.00075
	(!B * Y)	0.00281	0.00282	0.00281
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00135	-0.00136	-0.00134
	(B * !C * Y)	0.00349	0.00354	0.00350
	(!B * Y)	-0.00139	-0.00141	-0.00139
	(!B * Y)	0.00349	0.00354	0.00350

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00051	0.00051	0.00051
	(A * !C * Y)	-0.00126	-0.00127	-0.00126
	(!A * C * Y)	0.00095	0.00095	0.00095
	(!A * C * Y)	-0.00126	-0.00127	-0.00126
	(!A * !C * Y)	0.00055	0.00055	0.00055
	(!A * !C * Y)	-0.00126	-0.00126	-0.00126
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00102	0.00103	0.00103
	(A * !C * Y)	-0.00265	-0.00266	-0.00264
	(!A * C * Y)	0.00187	0.00190	0.00188
	(!A * C * Y)	-0.00263	-0.00266	-0.00264
	(!A * !C * Y)	0.00112	0.00114	0.00113
	(!A * !C * Y)	-0.00265	-0.00267	-0.00266
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00185	0.00188	0.00188
	(A * !C * Y)	-0.00260	-0.00262	-0.00261
	(!A * C * Y)	0.00370	0.00373	0.00371
	(!A * C * Y)	-0.00261	-0.00262	-0.00261
	(!A * !C * Y)	0.00202	0.00204	0.00203
	(!A * !C * Y)	-0.00262	-0.00264	-0.00263

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00049	-0.00049	-0.00050
	(A * !C * Y)	0.00129	0.00129	0.00127
	(!A * C * Y)	-0.00092	-0.00095	-0.00095
	(!A * C * Y)	0.00126	0.00128	0.00127
	(!A * !C * Y)	-0.00055	-0.00055	-0.00055
	(!A * !C * Y)	0.00126	0.00126	0.00127
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00096	-0.00097	-0.00099
	(A * !C * Y)	0.00271	0.00272	0.00267
	(!A * C * Y)	-0.00184	-0.00190	-0.00188
	(!A * C * Y)	0.00265	0.00267	0.00265
	(!A * !C * Y)	-0.00112	-0.00114	-0.00113
	(!A * !C * Y)	0.00266	0.00267	0.00267
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00176	-0.00177	-0.00182
	(A * !C * Y)	0.00273	0.00274	0.00264
	(!A * C * Y)	-0.00362	-0.00373	-0.00371
	(!A * C * Y)	0.00263	0.00264	0.00262
	(!A * !C * Y)	-0.00202	-0.00204	-0.00203
	(!A * !C * Y)	0.00263	0.00264	0.00264

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00101	0.00100	0.00101
	(A * !B * Y)	-0.00127	-0.00127	-0.00127
	(!A * B * Y)	0.00099	0.00099	0.00099
	(!A * B * Y)	-0.00127	-0.00127	-0.00127
	(!A * !B * Y)	0.00101	0.00102	0.00101
	(!A * !B * Y)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00185	0.00186	0.00184
	(A * !B * Y)	-0.00250	-0.00251	-0.00250
	(!A * B * Y)	0.00180	0.00182	0.00181
	(!A * B * Y)	-0.00249	-0.00250	-0.00249
	(!A * !B * Y)	0.00185	0.00185	0.00184
	(!A * !B * Y)	-0.00250	-0.00250	-0.00250
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00374	0.00374	0.00373
	(A * !B * Y)	-0.00264	-0.00264	-0.00264
	(!A * B * Y)	0.00367	0.00365	0.00367
	(!A * B * Y)	-0.00264	-0.00263	-0.00264
	(!A * !B * Y)	0.00374	0.00376	0.00373
	(!A * !B * Y)	-0.00264	-0.00265	-0.00264

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00099	-0.00100	-0.00101
	(A * !B * Y)	0.00127	0.00128	0.00127
	(!A * B * Y)	-0.00096	-0.00099	-0.00099
	(!A * B * Y)	0.00127	0.00127	0.00127
	(!A * !B * Y)	-0.00099	-0.00102	-0.00101
	(!A * !B * Y)	0.00127	0.00128	0.00127
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00181	-0.00186	-0.00184
	(A * !B * Y)	0.00251	0.00252	0.00250
	(!A * B * Y)	-0.00174	-0.00182	-0.00181
	(!A * B * Y)	0.00251	0.00251	0.00250
	(!A * !B * Y)	-0.00181	-0.00185	-0.00184
	(!A * !B * Y)	0.00251	0.00252	0.00250
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00364	-0.00374	-0.00373
	(A * !B * Y)	0.00265	0.00266	0.00264
	(!A * B * Y)	-0.00351	-0.00365	-0.00367
	(!A * B * Y)	0.00265	0.00265	0.00265
	(!A * !B * Y)	-0.00364	-0.00376	-0.00373
	(!A * !B * Y)	0.00265	0.00266	0.00264

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A_N	B_N	C	D	Y
0	x	0	x	1
0	x	1	0	1
0	0	1	1	0
x	1	1	1	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4bb_1	14.38560
sky130_fd_sc_hs__nand4bb_2	22.37760
sky130_fd_sc_hs__nand4bb_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	Y
sky130_fd_sc_hs__nand4bb_1	0.00208	0.00201	0.00269	0.00272	0.33957
sky130_fd_sc_hs__nand4bb_2	0.00239	0.00236	0.00505	0.00496	0.69127
sky130_fd_sc_hs__nand4bb_4	0.00333	0.00344	0.00980	0.00981	1.36738

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	0.00018	0.00047
sky130_fd_sc_hs__nand4bb_2	0.00000	0.00031	0.00086
sky130_fd_sc_hs__nand4bb_4	0.00000	0.00047	0.00163

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)	0.18562	1.18665	8.58415
	B_N->Y (RR)	0.21838	1.22224	8.60528
	C->Y (FR)	0.18699	1.48362	12.86800
	D->Y (FR)	0.20949	1.50630	12.90130
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.15982	1.02026	8.63514
	B_N->Y (RR)	0.19457	1.03479	8.41363
	C->Y (FR)	0.15701	1.30179	12.90120
	D->Y (FR)	0.18151	1.33648	12.97710
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.18300	0.96205	8.84786
	B_N->Y (RR)	0.22124	1.00382	8.93547
	C->Y (FR)	0.15233	1.19999	13.16250
	D->Y (FR)	0.17647	1.22882	13.21830

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)	0.24524	1.21491	8.07320
	B_N->Y (FF)	0.26571	1.24501	8.13896
	C->Y (RF)	0.11371	0.86820	7.48335
	D->Y (RF)	0.12122	0.84236	7.11600
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.29464	1.27336	9.36989
	B_N->Y (FF)	0.33365	1.32144	9.47888
	C->Y (RF)	0.11560	0.81858	8.10897
	D->Y (RF)	0.12143	0.79792	7.75499
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.29063	1.20358	9.66926
	B_N->Y (FF)	0.32145	1.24643	9.76491
	C->Y (RF)	0.11951	0.75893	8.53330
	D->Y (RF)	0.12482	0.73137	8.09853

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	0.00492	0.00479	0.00474
	A_N	0.00320	0.00307	0.00302
	B_N	0.00532	0.00513	0.00509
	B_N	0.00366	0.00348	0.00344
	C	0.00079	0.00066	0.00064
	C	0.00372	0.00360	0.00358
	D	0.00112	0.00101	0.00098
	D	0.00452	0.00441	0.00438
sky130_fd_sc_hs__nand4bb_2	A_N	0.00696	0.00694	0.00694
	A_N	0.00512	0.00511	0.00512
	B_N	0.00840	0.00821	0.00820
	B_N	0.00664	0.00644	0.00643
	C	0.00114	0.00088	0.00088
	C	0.00649	0.00611	0.00624
	D	0.00204	0.00183	0.00177
	D	0.00844	0.00822	0.00819
sky130_fd_sc_hs__nand4bb_4	A_N	0.01158	0.01164	0.01176
	A_N	0.00926	0.00932	0.00953
	B_N	0.01390	0.01363	0.01367
	B_N	0.01147	0.01120	0.01133
	C	0.00184	0.00129	0.00134
	C	0.01239	0.01186	0.01196
	D	0.00333	0.00288	0.00283
	D	0.01605	0.01560	0.01559

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00427	0.00416	0.00418
	A_N	0.00600	0.00588	0.00587
	B_N	0.00514	0.00504	0.00504
	B_N	0.00679	0.00670	0.00668
	C	0.00578	0.00575	0.00575
	C	0.00283	0.00279	0.00279
	D	0.00639	0.00635	0.00642
	D	0.00293	0.00288	0.00288
sky130_fd_sc_hs__nand4bb_2	A_N	0.00723	0.00719	0.00721
	A_N	0.00908	0.00904	0.00904
	B_N	0.00882	0.00880	0.00881
	B_N	0.01061	0.01057	0.01057
	C	0.01011	0.01003	0.01010
	C	0.00474	0.00465	0.00468
	D	0.01127	0.01121	0.01128
	D	0.00470	0.00461	0.00464
sky130_fd_sc_hs__nand4bb_4	A_N	0.01456	0.01455	0.01464
	A_N	0.01691	0.01687	0.01696
	B_N	0.01713	0.01707	0.01717
	B_N	0.01957	0.01949	0.01958
	C	0.01986	0.01961	0.01981
	C	0.00924	0.00901	0.00910
	D	0.02224	0.02210	0.02225
	D	0.00923	0.00900	0.00908

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)	0.00346	0.00331	0.00324
	(B_N * Y)	0.00127	0.00110	0.00104
	(!B_N * C * !D * Y)	0.00380	0.00365	0.00358
	(!B_N * C * !D * Y)	0.00160	0.00143	0.00138
	(!B_N * !C * Y)	0.00380	0.00365	0.00358
	(!B_N * !C * Y)	0.00160	0.00143	0.00138
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00517	0.00498	0.00490
	(B_N * Y)	0.00276	0.00256	0.00248
	(!B_N * C * !D * Y)	0.00559	0.00539	0.00531
	(!B_N * C * !D * Y)	0.00314	0.00295	0.00288
	(!B_N * !C * Y)	0.00558	0.00539	0.00530
	(!B_N * !C * Y)	0.00314	0.00295	0.00288
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00847	0.00819	0.00806
	(B_N * Y)	0.00499	0.00470	0.00459
	(!B_N * C * !D * Y)	0.00901	0.00873	0.00860
	(!B_N * C * !D * Y)	0.00550	0.00521	0.00510
	(!B_N * !C * Y)	0.00900	0.00872	0.00859
	(!B_N * !C * Y)	0.00550	0.00521	0.00511

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)	0.00042	0.00029	0.00027
	(B_N * Y)	0.00261	0.00249	0.00247
	(!B_N * C * !D * Y)	0.00011	-0.00002	-0.00006
	(!B_N * C * !D * Y)	0.00237	0.00225	0.00219
	(!B_N * !C * Y)	0.00009	-0.00004	-0.00007
	(!B_N * !C * Y)	0.00231	0.00218	0.00215
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00100	0.00084	0.00078
	(B_N * Y)	0.00342	0.00326	0.00321
	(!B_N * C * !D * Y)	0.00064	0.00048	0.00037
	(!B_N * C * !D * Y)	0.00320	0.00304	0.00290
	(!B_N * !C * Y)	0.00061	0.00045	0.00037
	(!B_N * !C * Y)	0.00307	0.00291	0.00283
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00195	0.00171	0.00163
	(B_N * Y)	0.00541	0.00519	0.00511
	(!B_N * C * !D * Y)	0.00151	0.00126	0.00110
	(!B_N * C * !D * Y)	0.00529	0.00505	0.00482
	(!B_N * !C * Y)	0.00146	0.00121	0.00110
	(!B_N * !C * Y)	0.00501	0.00478	0.00465

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)	0.00335	0.00320	0.00314
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00121	0.00105	0.00100
	(!C * Y)	0.00340	0.00325	0.00320
	(!C * Y)	0.00121	0.00106	0.00100
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00490	0.00472	0.00463
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00254	0.00235	0.00227
	(!C * Y)	0.00501	0.00484	0.00476
	(!C * Y)	0.00255	0.00236	0.00229
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00820	0.00792	0.00779
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00463	0.00433	0.00422
	(!C * Y)	0.00845	0.00817	0.00805
	(!C * Y)	0.00465	0.00436	0.00424

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)	0.00090	0.00077	0.00076
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00302	0.00291	0.00290
	(!C * Y)	0.00054	0.00042	0.00041
	(!C * Y)	0.00271	0.00259	0.00259
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00199	0.00184	0.00181
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00436	0.00420	0.00417
	(!C * Y)	0.00129	0.00114	0.00111
	(!C * Y)	0.00374	0.00359	0.00357
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00362	0.00340	0.00335
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00720	0.00697	0.00692
	(!C * Y)	0.00221	0.00199	0.00194
	(!C * Y)	0.00598	0.00575	0.00571

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)**	0.00104	0.00105	0.00104
	(A_N * B_N * D * Y)	-0.00129	-0.00130	-0.00130
	(A_N * B_N * !D * Y)	0.00072	0.00073	0.00072
	(A_N * B_N * !D * Y)	-0.00130	-0.00131	-0.00130
	(A_N * !B_N * D * Y)	0.00087	0.00088	0.00088
	(A_N * !B_N * D * Y)	-0.00146	-0.00147	-0.00146
	(A_N * !B_N * !D * Y)	0.00054	0.00054	0.00054
	(A_N * !B_N * !D * Y)	-0.00154	-0.00154	-0.00154
	(!A_N * B_N * D * Y)	0.00104	0.00104	0.00104
	(!A_N * B_N * D * Y)	-0.00129	-0.00130	-0.00130
	(!A_N * B_N * !D * Y)	0.00070	0.00070	0.00070
	(!A_N * B_N * !D * Y)	-0.00130	-0.00131	-0.00130
	(!A_N * !B_N * !D * Y)	0.00048	0.00048	0.00048
	(!A_N * !B_N * !D * Y)	-0.00146	-0.00147	-0.00147
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00197	0.00198	0.00196
	(A_N * B_N * D * Y)	-0.00255	-0.00255	-0.00254
	(A_N * B_N * !D * Y)	0.00128	0.00129	0.00128
	(A_N * B_N * !D * Y)	-0.00253	-0.00255	-0.00254
	(A_N * !B_N * D * Y)	0.00188	0.00189	0.00188
	(A_N * !B_N * D * Y)	-0.00265	-0.00266	-0.00262
	(A_N * !B_N * !D * Y)	0.00117	0.00118	0.00117
	(A_N * !B_N * !D * Y)	-0.00277	-0.00279	-0.00277
	(!A_N * B_N * D * Y)	0.00197	0.00197	0.00196
	(!A_N * B_N * D * Y)	-0.00255	-0.00254	-0.00254
	(!A_N * B_N * !D * Y)	0.00123	0.00124	0.00123
	(!A_N * B_N * !D * Y)	-0.00254	-0.00255	-0.00254
	(!A_N * !B_N * !D * Y)	0.00101	0.00102	0.00101
	(!A_N * !B_N * !D * Y)	-0.00262	-0.00264	-0.00264

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00391	0.00394	0.00392
	(A_N * B_N * D * Y)	-0.00496	-0.00498	-0.00496
	(A_N * B_N * !D * Y)	0.00253	0.00254	0.00253
	(A_N * B_N * !D * Y)	-0.00496	-0.00498	-0.00497
	(A_N * !B_N * D * Y)	0.00368	0.00371	0.00369
	(A_N * !B_N * D * Y)	-0.00524	-0.00526	-0.00519
	(A_N * !B_N * !D * Y)	0.00224	0.00225	0.00224
	(A_N * !B_N * !D * Y)	-0.00548	-0.00551	-0.00549
	(!A_N * B_N * D * Y)	0.00392	0.00394	0.00391
	(!A_N * B_N * D * Y)	-0.00498	-0.00499	-0.00497
	(!A_N * B_N * !D * Y)	0.00243	0.00244	0.00243
	(!A_N * B_N * !D * Y)	-0.00497	-0.00499	-0.00498
	(!A_N * !B_N * !D * Y)	0.00195	0.00197	0.00197
	(!A_N * !B_N * !D * Y)	-0.00518	-0.00522	-0.00521

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)**	-0.00102	-0.00105	-0.00104
	(A_N * B_N * D * Y)	0.00129	0.00131	0.00130
	(A_N * B_N * !D * Y)	-0.00072	-0.00073	-0.00072
	(A_N * B_N * !D * Y)	0.00130	0.00131	0.00131
	(A_N * !B_N * D * Y)	-0.00085	-0.00088	-0.00088
	(A_N * !B_N * D * Y)	0.00151	0.00148	0.00146
	(A_N * !B_N * !D * Y)	-0.00054	-0.00054	-0.00054
	(A_N * !B_N * !D * Y)	0.00156	0.00158	0.00158
	(!A_N * B_N * D * Y)	-0.00102	-0.00104	-0.00104
	(!A_N * B_N * D * Y)	0.00129	0.00131	0.00130
	(!A_N * B_N * !D * Y)	-0.00070	-0.00070	-0.00070
	(!A_N * B_N * !D * Y)	0.00130	0.00131	0.00131
	(!A_N * !B_N * !D * Y)	-0.00046	-0.00046	-0.00047
	(!A_N * !B_N * !D * Y)	0.00148	0.00148	0.00147
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00195	-0.00198	-0.00196
	(A_N * B_N * D * Y)	0.00256	0.00257	0.00254
	(A_N * B_N * !D * Y)	-0.00128	-0.00129	-0.00128
	(A_N * B_N * !D * Y)	0.00254	0.00255	0.00255
	(A_N * !B_N * D * Y)	-0.00181	-0.00189	-0.00188
	(A_N * !B_N * D * Y)	0.00274	0.00266	0.00262
	(A_N * !B_N * !D * Y)	-0.00117	-0.00118	-0.00117
	(A_N * !B_N * !D * Y)	0.00283	0.00286	0.00286
	(!A_N * B_N * D * Y)	-0.00194	-0.00197	-0.00196
	(!A_N * B_N * D * Y)	0.00256	0.00257	0.00255
	(!A_N * B_N * !D * Y)	-0.00123	-0.00124	-0.00123
	(!A_N * B_N * !D * Y)	0.00254	0.00255	0.00255
	(!A_N * !B_N * !D * Y)	-0.00099	-0.00099	-0.00099
	(!A_N * !B_N * !D * Y)	0.00265	0.00266	0.00266

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00387	-0.00394	-0.00392
	(A_N * B_N * D * Y)	0.00500	0.00502	0.00498
	(A_N * B_N * !D * Y)	-0.00253	-0.00254	-0.00253
	(A_N * B_N * !D * Y)	0.00497	0.00498	0.00498
	(A_N * !B_N * D * Y)	-0.00354	-0.00371	-0.00369
	(A_N * !B_N * D * Y)	0.00542	0.00526	0.00519
	(A_N * !B_N * !D * Y)	-0.00224	-0.00225	-0.00224
	(A_N * !B_N * !D * Y)	0.00562	0.00569	0.00567
	(!A_N * B_N * D * Y)	-0.00387	-0.00394	-0.00391
	(!A_N * B_N * D * Y)	0.00500	0.00502	0.00498
	(!A_N * B_N * !D * Y)	-0.00243	-0.00244	-0.00243
	(!A_N * B_N * !D * Y)	0.00498	0.00499	0.00499
	(!A_N * !B_N * !D * Y)	-0.00192	-0.00192	-0.00192
	(!A_N * !B_N * !D * Y)	0.00525	0.00527	0.00525

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)	0.00089	0.00091	0.00090
	(A_N * B_N * C * Y)	-0.00137	-0.00138	-0.00137
	(A_N * !C * Y)	0.00091	0.00091	0.00091
	(A_N * !C * Y)	-0.00137	-0.00138	-0.00137
	(A_N * !B_N * C * Y)	0.00089	0.00089	0.00089
	(A_N * !B_N * C * Y)	-0.00141	-0.00141	-0.00140
	(!A_N * B_N * C * Y)	0.00090	0.00091	0.00090
	(!A_N * B_N * C * Y)	-0.00137	-0.00138	-0.00137
	(!A_N * B_N * !C * Y)	0.00091	0.00092	0.00091
	(!A_N * B_N * !C * Y)	-0.00137	-0.00138	-0.00137
	(!A_N * !B_N * !C * Y)	0.00090	0.00091	0.00091
	(!A_N * !B_N * !C * Y)	-0.00137	-0.00137	-0.00137

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00188	0.00189	0.00188
	(A_N * B_N * C * Y)	-0.00247	-0.00248	-0.00247
	(A_N * !C * Y)	0.00191	0.00191	0.00190
	(A_N * !C * Y)	-0.00248	-0.00248	-0.00247
	(A_N * !B_N * C * Y)	0.00185	0.00187	0.00186
	(A_N * !B_N * C * Y)	-0.00255	-0.00256	-0.00254
	(!A_N * B_N * C * Y)	0.00187	0.00189	0.00188
	(!A_N * B_N * C * Y)	-0.00247	-0.00248	-0.00247
	(!A_N * B_N * !C * Y)	0.00190	0.00191	0.00190
	(!A_N * B_N * !C * Y)	-0.00248	-0.00248	-0.00247
	(!A_N * !B_N * !C * Y)	0.00189	0.00190	0.00190
	(!A_N * !B_N * !C * Y)	-0.00247	-0.00248	-0.00248
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00374	0.00377	0.00374
	(A_N * B_N * C * Y)	-0.00493	-0.00496	-0.00493
	(A_N * !C * Y)	0.00376	0.00381	0.00377
	(A_N * !C * Y)	-0.00492	-0.00495	-0.00493
	(A_N * !B_N * C * Y)	0.00370	0.00373	0.00369
	(A_N * !B_N * C * Y)	-0.00509	-0.00510	-0.00506
	(!A_N * B_N * C * Y)	0.00374	0.00375	0.00374
	(!A_N * B_N * C * Y)	-0.00493	-0.00494	-0.00493
	(!A_N * B_N * !C * Y)	0.00376	0.00381	0.00377
	(!A_N * B_N * !C * Y)	-0.00491	-0.00495	-0.00493
	(!A_N * !B_N * !C * Y)	0.00375	0.00378	0.00377
	(!A_N * !B_N * !C * Y)	-0.00491	-0.00494	-0.00493

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)**	-0.00087	-0.00090	-0.00090
	(A_N * B_N * C * Y)	0.00137	0.00138	0.00138
	(A_N * !C * Y)	-0.00089	-0.00091	-0.00091
	(A_N * !C * Y)	0.00137	0.00138	0.00138
	(A_N * !B_N * C * Y)	-0.00084	-0.00089	-0.00089
	(A_N * !B_N * C * Y)	0.00142	0.00141	0.00140
	(!A_N * B_N * C * Y)	-0.00087	-0.00090	-0.00090
	(!A_N * B_N * C * Y)	0.00137	0.00138	0.00137
	(!A_N * B_N * !C * Y)	-0.00089	-0.00091	-0.00091
	(!A_N * B_N * !C * Y)	0.00137	0.00138	0.00137
	(!A_N * !B_N * !C * Y)	-0.00089	-0.00091	-0.00091
	(!A_N * !B_N * !C * Y)	0.00137	0.00138	0.00137
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00181	-0.00189	-0.00188
	(A_N * B_N * C * Y)	0.00249	0.00249	0.00248
	(A_N * !C * Y)	-0.00186	-0.00191	-0.00190
	(A_N * !C * Y)	0.00249	0.00250	0.00248
	(A_N * !B_N * C * Y)	-0.00177	-0.00187	-0.00186
	(A_N * !B_N * C * Y)	0.00261	0.00256	0.00254
	(!A_N * B_N * C * Y)	-0.00181	-0.00189	-0.00188
	(!A_N * B_N * C * Y)	0.00249	0.00249	0.00248
	(!A_N * B_N * !C * Y)	-0.00186	-0.00191	-0.00190
	(!A_N * B_N * !C * Y)	0.00249	0.00250	0.00248
	(!A_N * !B_N * !C * Y)	-0.00186	-0.00190	-0.00190
	(!A_N * !B_N * !C * Y)	0.00249	0.00250	0.00248

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00361	-0.00377	-0.00374
	(A_N * B_N * C * Y)	0.00496	0.00496	0.00494
	(A_N * !C * Y)	-0.00369	-0.00381	-0.00377
	(A_N * !C * Y)	0.00494	0.00497	0.00494
	(A_N * !B_N * C * Y)	-0.00352	-0.00373	-0.00369
	(A_N * !B_N * C * Y)	0.00520	0.00510	0.00506
	(!A_N * B_N * C * Y)	-0.00361	-0.00375	-0.00374
	(!A_N * B_N * C * Y)	0.00497	0.00496	0.00494
	(!A_N * B_N * !C * Y)	-0.00369	-0.00381	-0.00377
	(!A_N * B_N * !C * Y)	0.00495	0.00497	0.00494
	(!A_N * !B_N * !C * Y)	-0.00369	-0.00378	-0.00377
	(!A_N * !B_N * !C * Y)	0.00497	0.00498	0.00495

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A_N	B	C	D	Y
x	0	x	x	1
x	1	0	x	1
x	1	1	0	1
0	1	1	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4b_1	11.18880
sky130_fd_sc_hs__nand4b_2	19.18080
sky130_fd_sc_hs__nand4b_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	Y
sky130_fd_sc_hs__nand4b_1	0.00204	0.00264	0.00264	0.00255	0.35928
sky130_fd_sc_hs__nand4b_2	0.00259	0.00520	0.00503	0.00502	0.71087
sky130_fd_sc_hs__nand4b_4	0.00359	0.00735	0.00750	0.00715	0.72453

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	0.00013	0.00043
sky130_fd_sc_hs__nand4b_2	0.00000	0.00024	0.00082
sky130_fd_sc_hs__nand4b_4	0.00000	0.00035	0.00082

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)	0.16750	1.15650	8.52356
	B->Y (FR)	0.14900	1.46812	13.21620
	C->Y (FR)	0.17281	1.48766	13.24020
	D->Y (FR)	0.18511	1.49380	13.14740
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.15695	1.00016	8.47608
	B->Y (FR)	0.13403	1.28497	13.05640
	C->Y (FR)	0.15916	1.32144	13.19490
	D->Y (FR)	0.18070	1.33981	13.16570
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.19563	1.05784	8.69372
	B->Y (FR)	0.18792	1.33364	13.12410
	C->Y (FR)	0.23523	1.38009	13.17860
	D->Y (FR)	0.27875	1.43871	13.28810

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)	0.24520	1.23253	8.28372
	B->Y (RF)	0.08954	0.89586	8.04558
	C->Y (RF)	0.09989	0.86644	7.65666
	D->Y (RF)	0.10349	0.83701	7.29468
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.28162	1.26354	9.42118
	B->Y (RF)	0.09745	0.86567	8.78351
	C->Y (RF)	0.10730	0.81615	8.19594
	D->Y (RF)	0.11410	0.79600	7.85033
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.21984	1.02515	6.98217
	B->Y (RF)	0.08398	0.67012	6.57234
	C->Y (RF)	0.09469	0.63060	6.00956
	D->Y (RF)	0.09990	0.60348	5.57357

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	0.00484	0.00473	0.00469
	A_N	0.00302	0.00291	0.00288
	B	0.00040	0.00030	0.00029
	B	0.00326	0.00315	0.00316
	C	0.00079	0.00068	0.00065
	C	0.00403	0.00392	0.00391
	D	0.00106	0.00098	0.00095
	D	0.00476	0.00468	0.00466
sky130_fd_sc_hs__nand4b_2	A_N	0.00701	0.00698	0.00698
	A_N	0.00525	0.00523	0.00525
	B	0.00024	-0.00002	0.00002
	B	0.00615	0.00579	0.00595
	C	0.00108	0.00082	0.00081
	C	0.00786	0.00758	0.00763
	D	0.00192	0.00169	0.00166
	D	0.00982	0.00956	0.00957
sky130_fd_sc_hs__nand4b_4	A_N	0.00901	0.00898	0.00915
	A_N	0.00643	0.00640	0.00659
	B	0.00025	-0.00033	-0.00030
	B	0.00850	0.00791	0.00800
	C	0.00160	0.00098	0.00097
	C	0.01206	0.01144	0.01146
	D	0.00310	0.00267	0.00261
	D	0.01551	0.01508	0.01500

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00392	0.00381	0.00381
	A_N	0.00574	0.00564	0.00563
	B	0.00439	0.00435	0.00439
	B	0.00153	0.00149	0.00149
	C	0.00494	0.00491	0.00494
	C	0.00165	0.00161	0.00161
	D	0.00545	0.00542	0.00547
	D	0.00163	0.00160	0.00160
sky130_fd_sc_hs__nand4b_2	A_N	0.00710	0.00699	0.00701
	A_N	0.00886	0.00877	0.00876
	B	0.00887	0.00879	0.00884
	B	0.00295	0.00286	0.00289
	C	0.00996	0.00988	0.00993
	C	0.00306	0.00295	0.00299
	D	0.01118	0.01112	0.01117
	D	0.00301	0.00293	0.00295
sky130_fd_sc_hs__nand4b_4	A_N	0.01066	0.01046	0.01102
	A_N	0.01324	0.01303	0.01306
	B	0.01362	0.01359	0.01447
	B	0.00530	0.00520	0.00523
	C	0.01605	0.01598	0.01650
	C	0.00534	0.00523	0.00526
	D	0.01830	0.01822	0.01864
	D	0.00537	0.00528	0.00530

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)	0.00374	0.00358	0.00351
	(B * C * !D * Y)	0.00145	0.00128	0.00122
	(B * !C * Y)	0.00374	0.00357	0.00351
	(B * !C * Y)	0.00145	0.00128	0.00122
	(!B * Y)	0.00372	0.00356	0.00349
	(!B * Y)	0.00145	0.00128	0.00122
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00562	0.00541	0.00531
	(B * C * !D * Y)	0.00274	0.00252	0.00243
	(B * !C * Y)	0.00562	0.00540	0.00531
	(B * !C * Y)	0.00274	0.00252	0.00243
	(!B * Y)	0.00559	0.00538	0.00528
	(!B * Y)	0.00274	0.00252	0.00244
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00667	0.00635	0.00622
	(B * C * !D * Y)	0.00265	0.00232	0.00222
	(B * !C * Y)	0.00666	0.00634	0.00622
	(B * !C * Y)	0.00265	0.00232	0.00221
	(!B * Y)	0.00661	0.00629	0.00617
	(!B * Y)	0.00266	0.00233	0.00222

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)	0.00044	0.00030	0.00026
	(B * C * !D * Y)	0.00282	0.00267	0.00261
	(B * !C * Y)	0.00043	0.00030	0.00027
	(B * !C * Y)	0.00278	0.00264	0.00259
	(!B * Y)	0.00044	0.00031	0.00028
	(!B * Y)	0.00272	0.00259	0.00256
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00054	0.00034	0.00023
	(B * C * !D * Y)	0.00359	0.00339	0.00322
	(B * !C * Y)	0.00051	0.00031	0.00023
	(B * !C * Y)	0.00349	0.00329	0.00318
	(!B * Y)	0.00050	0.00030	0.00025
	(!B * Y)	0.00336	0.00316	0.00310
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00114	0.00088	0.00073
	(B * C * !D * Y)	0.00549	0.00524	0.00498
	(B * !C * Y)	0.00108	0.00083	0.00073
	(B * !C * Y)	0.00530	0.00505	0.00489
	(!B * Y)	0.00108	0.00083	0.00077
	(!B * Y)	0.00505	0.00481	0.00474

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)**	0.00107	0.00108	0.00107
	(A_N * C * D * Y)	-0.00124	-0.00125	-0.00124
	(A_N * C * !D * Y)	0.00072	0.00073	0.00072
	(A_N * C * !D * Y)	-0.00124	-0.00125	-0.00124
	(A_N * !C * Y)	0.00071	0.00072	0.00071
	(A_N * !C * Y)	-0.00124	-0.00124	-0.00124
	(!A_N * C * !D * Y)	0.00045	0.00045	0.00045
	(!A_N * C * !D * Y)	-0.00142	-0.00143	-0.00144
	(!A_N * !C * Y)	0.00047	0.00047	0.00047
	(!A_N * !C * Y)	-0.00144	-0.00145	-0.00144
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00196	0.00198	0.00196
	(A_N * C * D * Y)	-0.00264	-0.00265	-0.00264
	(A_N * C * !D * Y)	0.00127	0.00128	0.00127
	(A_N * C * !D * Y)	-0.00265	-0.00266	-0.00265
	(A_N * !C * Y)	0.00127	0.00128	0.00127
	(A_N * !C * Y)	-0.00265	-0.00267	-0.00265
	(!A_N * C * !D * Y)	0.00094	0.00095	0.00095
	(!A_N * C * !D * Y)	-0.00278	-0.00279	-0.00282
	(!A_N * !C * Y)	0.00099	0.00100	0.00099
	(!A_N * !C * Y)	-0.00282	-0.00283	-0.00283
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00376	0.00377	0.00375
	(A_N * C * D * Y)	-0.00276	-0.00275	-0.00276
	(A_N * C * !D * Y)	0.00232	0.00233	0.00231
	(A_N * C * !D * Y)	-0.00278	-0.00279	-0.00278
	(A_N * !C * Y)	0.00229	0.00230	0.00229
	(A_N * !C * Y)	-0.00278	-0.00279	-0.00278
	(!A_N * C * !D * Y)	0.00178	0.00178	0.00180
	(!A_N * C * !D * Y)	-0.00294	-0.00294	-0.00300
	(!A_N * !C * Y)	0.00188	0.00188	0.00187
	(!A_N * !C * Y)	-0.00301	-0.00302	-0.00303

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)	-0.00106	-0.00108	-0.00107
	(A_N * C * D * Y)	0.00124	0.00126	0.00125
	(A_N * C * !D * Y)	-0.00072	-0.00073	-0.00072
	(A_N * C * !D * Y)	0.00124	0.00125	0.00125
	(A_N * !C * Y)	-0.00071	-0.00072	-0.00071
	(A_N * !C * Y)	0.00124	0.00124	0.00124
	(!A_N * C * !D * Y)	-0.00044	-0.00044	-0.00045
	(!A_N * C * !D * Y)	0.00146	0.00147	0.00145
	(!A_N * !C * Y)	-0.00045	-0.00045	-0.00046
	(!A_N * !C * Y)	0.00146	0.00147	0.00145
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00192	-0.00198	-0.00196
	(A_N * C * D * Y)	0.00264	0.00267	0.00264
	(A_N * C * !D * Y)	-0.00127	-0.00128	-0.00127
	(A_N * C * !D * Y)	0.00267	0.00267	0.00266
	(A_N * !C * Y)	-0.00127	-0.00128	-0.00127
	(A_N * !C * Y)	0.00267	0.00268	0.00266
	(!A_N * C * !D * Y)	-0.00091	-0.00091	-0.00093
	(!A_N * C * !D * Y)	0.00288	0.00290	0.00285
	(!A_N * !C * Y)	-0.00093	-0.00094	-0.00096
	(!A_N * !C * Y)	0.00288	0.00290	0.00285

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00367	-0.00376	-0.00375
	(A_N * C * D * Y)	0.00276	0.00275	0.00276
	(A_N * C * !D * Y)	-0.00232	-0.00233	-0.00231
	(A_N * C * !D * Y)	0.00280	0.00279	0.00278
	(A_N * !C * Y)	-0.00229	-0.00230	-0.00229
	(A_N * !C * Y)	0.00279	0.00279	0.00279
	(!A_N * C * !D * Y)	-0.00172	-0.00173	-0.00176
	(!A_N * C * !D * Y)	0.00312	0.00314	0.00307
	(!A_N * !C * Y)	-0.00176	-0.00177	-0.00181
	(!A_N * !C * Y)	0.00312	0.00314	0.00307

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)**	0.00091	0.00092	0.00092
	(A_N * B * D * Y)	-0.00123	-0.00124	-0.00124
	(A_N * B * !D * Y)	0.00056	0.00057	0.00057
	(A_N * B * !D * Y)	-0.00123	-0.00124	-0.00124
	(A_N * !B * D * Y)	0.00093	0.00094	0.00093
	(A_N * !B * D * Y)	-0.00123	-0.00125	-0.00124
	(A_N * !B * !D * Y)	0.00057	0.00057	0.00057
	(A_N * !B * !D * Y)	-0.00124	-0.00124	-0.00124
	(!A_N * B * !D * Y)	0.00046	0.00046	0.00046
	(!A_N * B * !D * Y)	-0.00128	-0.00129	-0.00128
	(!A_N * !B * D * Y)	0.00089	0.00090	0.00089
	(!A_N * !B * D * Y)	-0.00127	-0.00128	-0.00128
	(!A_N * !B * !D * Y)	0.00051	0.00051	0.00051
	(!A_N * !B * !D * Y)	-0.00128	-0.00128	-0.00128

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00185	0.00186	0.00186
	(A_N * B * D * Y)	-0.00252	-0.00253	-0.00252
	(A_N * B * !D * Y)	0.00114	0.00115	0.00114
	(A_N * B * !D * Y)	-0.00253	-0.00254	-0.00253
	(A_N * !B * D * Y)	0.00188	0.00190	0.00189
	(A_N * !B * D * Y)	-0.00252	-0.00253	-0.00252
	(A_N * !B * !D * Y)	0.00117	0.00118	0.00117
	(A_N * !B * !D * Y)	-0.00252	-0.00253	-0.00252
	(!A_N * B * !D * Y)	0.00099	0.00100	0.00100
	(!A_N * B * !D * Y)	-0.00252	-0.00254	-0.00252
	(!A_N * !B * D * Y)	0.00189	0.00190	0.00189
	(!A_N * !B * D * Y)	-0.00253	-0.00253	-0.00252
	(!A_N * !B * !D * Y)	0.00113	0.00113	0.00113
	(!A_N * !B * !D * Y)	-0.00252	-0.00253	-0.00253
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00371	0.00374	0.00373
	(A_N * B * D * Y)	-0.00272	-0.00274	-0.00273
	(A_N * B * !D * Y)	0.00224	0.00224	0.00223
	(A_N * B * !D * Y)	-0.00275	-0.00275	-0.00274
	(A_N * !B * D * Y)	0.00380	0.00384	0.00381
	(A_N * !B * D * Y)	-0.00272	-0.00274	-0.00272
	(A_N * !B * !D * Y)	0.00226	0.00226	0.00225
	(A_N * !B * !D * Y)	-0.00272	-0.00274	-0.00273
	(!A_N * B * !D * Y)	0.00195	0.00196	0.00196
	(!A_N * B * !D * Y)	-0.00273	-0.00274	-0.00272
	(!A_N * !B * D * Y)	0.00380	0.00383	0.00380
	(!A_N * !B * D * Y)	-0.00273	-0.00274	-0.00273
	(!A_N * !B * !D * Y)	0.00215	0.00218	0.00217
	(!A_N * !B * !D * Y)	-0.00271	-0.00274	-0.00273

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)	-0.00088	-0.00092	-0.00092
	(A_N * B * D * Y)	0.00124	0.00125	0.00124
	(A_N * B * !D * Y)	-0.00056	-0.00057	-0.00057
	(A_N * B * !D * Y)	0.00125	0.00124	0.00124
	(A_N * !B * D * Y)	-0.00091	-0.00094	-0.00093
	(A_N * !B * D * Y)	0.00123	0.00125	0.00124
	(A_N * !B * !D * Y)	-0.00057	-0.00057	-0.00057
	(A_N * !B * !D * Y)	0.00124	0.00124	0.00124
	(!A_N * B * !D * Y)	-0.00045	-0.00045	-0.00045
	(!A_N * B * !D * Y)	0.00129	0.00129	0.00129
	(!A_N * !B * D * Y)	-0.00087	-0.00090	-0.00089
	(!A_N * !B * D * Y)	0.00127	0.00129	0.00128
	(!A_N * !B * !D * Y)	-0.00051	-0.00051	-0.00051
	(!A_N * !B * !D * Y)	0.00128	0.00128	0.00128
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00178	-0.00186	-0.00186
	(A_N * B * D * Y)	0.00254	0.00255	0.00253
	(A_N * B * !D * Y)	-0.00114	-0.00115	-0.00114
	(A_N * B * !D * Y)	0.00255	0.00255	0.00254
	(A_N * !B * D * Y)	-0.00185	-0.00190	-0.00189
	(A_N * !B * D * Y)	0.00254	0.00255	0.00253
	(A_N * !B * !D * Y)	-0.00117	-0.00118	-0.00117
	(A_N * !B * !D * Y)	0.00252	0.00253	0.00253
	(!A_N * B * !D * Y)	-0.00098	-0.00098	-0.00098
	(!A_N * B * !D * Y)	0.00254	0.00255	0.00254
	(!A_N * !B * D * Y)	-0.00185	-0.00190	-0.00189
	(!A_N * !B * D * Y)	0.00254	0.00255	0.00253
	(!A_N * !B * !D * Y)	-0.00113	-0.00113	-0.00113
	(!A_N * !B * !D * Y)	0.00253	0.00253	0.00254

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00356	-0.00374	-0.00373
	(A_N * B * D * Y)	0.00276	0.00276	0.00274
	(A_N * B * !D * Y)	-0.00224	-0.00224	-0.00223
	(A_N * B * !D * Y)	0.00277	0.00276	0.00276
	(A_N * !B * D * Y)	-0.00371	-0.00384	-0.00381
	(A_N * !B * D * Y)	0.00274	0.00275	0.00273
	(A_N * !B * !D * Y)	-0.00226	-0.00226	-0.00225
	(A_N * !B * !D * Y)	0.00272	0.00274	0.00273
	(!A_N * B * !D * Y)	-0.00190	-0.00191	-0.00192
	(!A_N * B * !D * Y)	0.00278	0.00279	0.00275
	(!A_N * !B * D * Y)	-0.00371	-0.00383	-0.00380
	(!A_N * !B * D * Y)	0.00275	0.00276	0.00273
	(!A_N * !B * !D * Y)	-0.00215	-0.00218	-0.00217
	(!A_N * !B * !D * Y)	0.00273	0.00274	0.00274

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)	0.00092	0.00093	0.00092
	(A_N * B * C * Y)	-0.00120	-0.00121	-0.00121
	(A_N * !C * Y)	0.00093	0.00095	0.00094
	(A_N * !C * Y)	-0.00121	-0.00122	-0.00121
	(A_N * !B * C * Y)	0.00092	0.00093	0.00092
	(A_N * !B * C * Y)	-0.00121	-0.00121	-0.00121
	(!A_N * B * !C * Y)	0.00090	0.00091	0.00090
	(!A_N * B * !C * Y)	-0.00125	-0.00125	-0.00125
	(!A_N * !B * C * Y)	0.00088	0.00089	0.00088
	(!A_N * !B * C * Y)	-0.00125	-0.00125	-0.00125
	(!A_N * !B * !C * Y)	0.00090	0.00091	0.00090
	(!A_N * !B * !C * Y)	-0.00125	-0.00125	-0.00125

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00184	0.00185	0.00184
	(A_N * B * C * Y)	-0.00251	-0.00252	-0.00250
	(A_N * !C * Y)	0.00191	0.00191	0.00190
	(A_N * !C * Y)	-0.00251	-0.00251	-0.00250
	(A_N * !B * C * Y)	0.00184	0.00186	0.00184
	(A_N * !B * C * Y)	-0.00249	-0.00252	-0.00250
	(!A_N * B * !C * Y)	0.00191	0.00191	0.00190
	(!A_N * B * !C * Y)	-0.00251	-0.00251	-0.00250
	(!A_N * !B * C * Y)	0.00184	0.00185	0.00184
	(!A_N * !B * C * Y)	-0.00250	-0.00251	-0.00250
	(!A_N * !B * !C * Y)	0.00190	0.00191	0.00190
	(!A_N * !B * !C * Y)	-0.00251	-0.00251	-0.00250
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00363	0.00363	0.00364
	(A_N * B * C * Y)	-0.00250	-0.00250	-0.00250
	(A_N * !C * Y)	0.00376	0.00378	0.00374
	(A_N * !C * Y)	-0.00249	-0.00251	-0.00250
	(A_N * !B * C * Y)	0.00364	0.00368	0.00365
	(A_N * !B * C * Y)	-0.00249	-0.00251	-0.00250
	(!A_N * B * !C * Y)	0.00376	0.00377	0.00374
	(!A_N * B * !C * Y)	-0.00249	-0.00251	-0.00250
	(!A_N * !B * C * Y)	0.00364	0.00367	0.00365
	(!A_N * !B * C * Y)	-0.00249	-0.00250	-0.00250
	(!A_N * !B * !C * Y)	0.00376	0.00379	0.00376
	(!A_N * !B * !C * Y)	-0.00249	-0.00251	-0.00250

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)**	-0.00087	-0.00093	-0.00092
	(A_N * B * C * Y)	0.00121	0.00121	0.00121
	(A_N * !C * Y)	-0.00092	-0.00094	-0.00094
	(A_N * !C * Y)	0.00121	0.00122	0.00121
	(A_N * !B * C * Y)	-0.00088	-0.00093	-0.00092
	(A_N * !B * C * Y)	0.00121	0.00122	0.00121
	(!A_N * B * !C * Y)	-0.00088	-0.00091	-0.00090
	(!A_N * B * !C * Y)	0.00125	0.00126	0.00125
	(!A_N * !B * C * Y)	-0.00084	-0.00089	-0.00088
	(!A_N * !B * C * Y)	0.00125	0.00125	0.00125
	(!A_N * !B * !C * Y)	-0.00088	-0.00090	-0.00090
	(!A_N * !B * !C * Y)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00175	-0.00185	-0.00184
	(A_N * B * C * Y)	0.00251	0.00253	0.00251
	(A_N * !C * Y)	-0.00185	-0.00191	-0.00190
	(A_N * !C * Y)	0.00252	0.00252	0.00251
	(A_N * !B * C * Y)	-0.00178	-0.00186	-0.00184
	(A_N * !B * C * Y)	0.00252	0.00252	0.00251
	(!A_N * B * !C * Y)	-0.00185	-0.00191	-0.00190
	(!A_N * B * !C * Y)	0.00252	0.00253	0.00251
	(!A_N * !B * C * Y)	-0.00177	-0.00185	-0.00184
	(!A_N * !B * C * Y)	0.00252	0.00253	0.00251
	(!A_N * !B * !C * Y)	-0.00185	-0.00191	-0.00190
	(!A_N * !B * !C * Y)	0.00252	0.00253	0.00251

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00349	-0.00363	-0.00364
	(A_N * B * C * Y)	0.00252	0.00252	0.00251
	(A_N * !C * Y)	-0.00363	-0.00378	-0.00374
	(A_N * !C * Y)	0.00249	0.00252	0.00250
	(A_N * !B * C * Y)	-0.00348	-0.00368	-0.00365
	(A_N * !B * C * Y)	0.00250	0.00252	0.00250
	(!A_N * B * !C * Y)	-0.00363	-0.00377	-0.00374
	(!A_N * B * !C * Y)	0.00249	0.00252	0.00250
	(!A_N * !B * C * Y)	-0.00348	-0.00367	-0.00365
	(!A_N * !B * C * Y)	0.00250	0.00252	0.00250
	(!A_N * !B * !C * Y)	-0.00363	-0.00378	-0.00376
	(!A_N * !B * !C * Y)	0.00249	0.00252	0.00250

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D	Y
0	x	x	x	1
1	0	x	x	1
1	1	0	x	1
1	1	1	0	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4_1	9.59040
sky130_fd_sc_hs__nand4_2	15.98400
sky130_fd_sc_hs__nand4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nand4_1	0.00260	0.00272	0.00268	0.00268	0.35860
sky130_fd_sc_hs__nand4_2	0.00507	0.00506	0.00509	0.00493	0.70706
sky130_fd_sc_hs__nand4_4	0.00761	0.00730	0.00729	0.00746	0.71726

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.00008	0.00039
sky130_fd_sc_hs__nand4_2	0.00000	0.00016	0.00077
sky130_fd_sc_hs__nand4_4	0.00000	0.00027	0.00077

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)	0.12318	1.42195	13.03840
	B->Y (FR)	0.15513	1.47275	13.21370
	C->Y (FR)	0.17741	1.49349	13.24020
	D->Y (FR)	0.19189	1.50032	13.13940
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.10300	1.25726	13.08260
	B->Y (FR)	0.13289	1.28306	13.03100
	C->Y (FR)	0.15509	1.30877	13.06610
	D->Y (FR)	0.17591	1.34023	13.13700
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.13304	1.27744	13.02860
	B->Y (FR)	0.18998	1.32946	13.01820
	C->Y (FR)	0.24069	1.39482	13.24780
	D->Y (FR)	0.28343	1.44617	13.28060

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.07189	0.88845	8.12654
	B->Y (RF)	0.08844	0.88922	7.97084
	C->Y (RF)	0.09727	0.85812	7.57080
	D->Y (RF)	0.10212	0.82895	7.20658
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.06788	0.85795	8.92176
	B->Y (RF)	0.08958	0.86354	8.78642
	C->Y (RF)	0.09998	0.81478	8.20390
	D->Y (RF)	0.10590	0.79085	7.84676
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.05471	0.66658	6.75763
	B->Y (RF)	0.07500	0.66729	6.53985
	C->Y (RF)	0.08603	0.62642	5.97515
	D->Y (RF)	0.09179	0.59835	5.53936

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00009	-0.00016	-0.00017
	A	0.00314	0.00307	0.00308
	B	0.00039	0.00027	0.00026
	B	0.00415	0.00404	0.00403
	C	0.00080	0.00068	0.00065
	C	0.00502	0.00489	0.00488
	D	0.00104	0.00094	0.00091
	D	0.00581	0.00571	0.00569
sky130_fd_sc_hs__nand4_2	A	-0.00078	-0.00092	-0.00085
	A	0.00518	0.00506	0.00517
	B	0.00036	0.00007	0.00010
	B	0.00747	0.00710	0.00726
	C	0.00103	0.00076	0.00075
	C	0.00930	0.00894	0.00904
	D	0.00192	0.00171	0.00165
	D	0.01121	0.01097	0.01100
sky130_fd_sc_hs__nand4_4	A	-0.00163	-0.00196	-0.00185
	A	0.00715	0.00671	0.00694
	B	0.00039	-0.00022	-0.00019
	B	0.01135	0.01068	0.01070
	C	0.00186	0.00123	0.00123
	C	0.01487	0.01426	0.01419
	D	0.00336	0.00290	0.00282
	D	0.01874	0.01829	0.01811

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00406	0.00402	0.00405
	A	0.00084	0.00078	0.00080
	B	0.00467	0.00463	0.00468
	B	0.00088	0.00083	0.00084
	C	0.00519	0.00516	0.00516
	C	0.00088	0.00084	0.00085
	D	0.00578	0.00575	0.00586
	D	0.00087	0.00083	0.00082
sky130_fd_sc_hs__nand4_2	A	0.00745	0.00735	0.00743
	A	0.00148	0.00138	0.00141
	B	0.00871	0.00861	0.00868
	B	0.00150	0.00139	0.00144
	C	0.00998	0.00991	0.00995
	C	0.00150	0.00140	0.00143
	D	0.01109	0.01103	0.01107
	D	0.00146	0.00136	0.00140
sky130_fd_sc_hs__nand4_4	A	0.01153	0.01143	0.01213
	A	0.00278	0.00261	0.00268
	B	0.01390	0.01384	0.01426
	B	0.00283	0.00270	0.00273
	C	0.01627	0.01616	0.01679
	C	0.00284	0.00273	0.00275
	D	0.01874	0.01868	0.01894
	D	0.00269	0.00258	0.00260

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)	0.00045	0.00045	0.00041
	(B * C * !D * Y)	-0.00136	-0.00137	-0.00145
	(B * !C * Y)	0.00044	0.00044	0.00041
	(B * !C * Y)	-0.00140	-0.00140	-0.00145
	(!B * Y)	0.00044	0.00044	0.00042
	(!B * Y)	-0.00143	-0.00144	-0.00146
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00082	0.00082	0.00071
	(B * C * !D * Y)	-0.00270	-0.00271	-0.00289
	(B * !C * Y)	0.00078	0.00077	0.00070
	(B * !C * Y)	-0.00280	-0.00280	-0.00291
	(!B * Y)	0.00080	0.00080	0.00075
	(!B * Y)	-0.00288	-0.00288	-0.00293
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00160	0.00160	0.00140
	(B * C * !D * Y)	-0.00309	-0.00312	-0.00349
	(B * !C * Y)	0.00151	0.00151	0.00139
	(B * !C * Y)	-0.00328	-0.00331	-0.00352
	(!B * Y)	0.00154	0.00154	0.00147
	(!B * Y)	-0.00344	-0.00346	-0.00355

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)	-0.00040	-0.00041	-0.00040
	(B * C * !D * Y)	0.00145	0.00146	0.00146
	(B * !C * Y)	-0.00040	-0.00041	-0.00040
	(B * !C * Y)	0.00145	0.00146	0.00146
	(!B * Y)	-0.00041	-0.00041	-0.00041
	(!B * Y)	0.00145	0.00146	0.00146
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00070	-0.00071	-0.00071
	(B * C * !D * Y)	0.00292	0.00294	0.00293
	(B * !C * Y)	-0.00071	-0.00071	-0.00070
	(B * !C * Y)	0.00292	0.00294	0.00293
	(!B * Y)	-0.00073	-0.00073	-0.00073
	(!B * Y)	0.00292	0.00294	0.00293
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00139	-0.00140	-0.00139
	(B * C * !D * Y)	0.00353	0.00357	0.00355
	(B * !C * Y)	-0.00139	-0.00140	-0.00139
	(B * !C * Y)	0.00353	0.00357	0.00354
	(!B * Y)	-0.00144	-0.00145	-0.00144
	(!B * Y)	0.00354	0.00357	0.00355

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)**	0.00046	0.00046	0.00046
	(A * C * !D * Y)	-0.00131	-0.00132	-0.00131
	(A * !C * Y)	0.00049	0.00049	0.00049
	(A * !C * Y)	-0.00131	-0.00132	-0.00131
	(!A * C * D * Y)	0.00090	0.00091	0.00090
	(!A * C * D * Y)	-0.00131	-0.00131	-0.00131
	(!A * C * !D * Y)	0.00054	0.00054	0.00053
	(!A * C * !D * Y)	-0.00132	-0.00132	-0.00132
	(!A * !C * Y)	0.00053	0.00053	0.00053
	(!A * !C * Y)	-0.00132	-0.00132	-0.00132
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00095	0.00096	0.00098
	(A * C * !D * Y)	-0.00249	-0.00251	-0.00249
	(A * !C * Y)	0.00097	0.00098	0.00099
	(A * !C * Y)	-0.00250	-0.00252	-0.00250
	(!A * C * D * Y)	0.00189	0.00190	0.00189
	(!A * C * D * Y)	-0.00250	-0.00252	-0.00251
	(!A * C * !D * Y)	0.00112	0.00114	0.00112
	(!A * C * !D * Y)	-0.00251	-0.00253	-0.00251
	(!A * !C * Y)	0.00106	0.00107	0.00107
	(!A * !C * Y)	-0.00251	-0.00252	-0.00252
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00185	0.00186	0.00188
	(A * C * !D * Y)	-0.00262	-0.00263	-0.00260
	(A * !C * Y)	0.00190	0.00191	0.00192
	(A * !C * Y)	-0.00263	-0.00264	-0.00263
	(!A * C * D * Y)	0.00372	0.00376	0.00373
	(!A * C * D * Y)	-0.00263	-0.00264	-0.00264
	(!A * C * !D * Y)	0.00216	0.00218	0.00215
	(!A * C * !D * Y)	-0.00265	-0.00266	-0.00265
	(!A * !C * Y)	0.00207	0.00207	0.00206
	(!A * !C * Y)	-0.00265	-0.00266	-0.00265

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)	-0.00045	-0.00045	-0.00046
	(A * C * !D * Y)	0.00134	0.00134	0.00132
	(A * !C * Y)	-0.00046	-0.00046	-0.00047
	(A * !C * Y)	0.00134	0.00134	0.00132
	(!A * C * D * Y)	-0.00088	-0.00091	-0.00090
	(!A * C * D * Y)	0.00131	0.00133	0.00132
	(!A * C * !D * Y)	-0.00054	-0.00054	-0.00053
	(!A * C * !D * Y)	0.00132	0.00132	0.00132
	(!A * !C * Y)	-0.00053	-0.00053	-0.00053
	(!A * !C * Y)	0.00132	0.00132	0.00132
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00091	-0.00091	-0.00093
	(A * C * !D * Y)	0.00257	0.00257	0.00253
	(A * !C * Y)	-0.00092	-0.00093	-0.00095
	(A * !C * Y)	0.00257	0.00257	0.00253
	(!A * C * D * Y)	-0.00183	-0.00190	-0.00189
	(!A * C * D * Y)	0.00251	0.00254	0.00251
	(!A * C * !D * Y)	-0.00112	-0.00114	-0.00112
	(!A * C * !D * Y)	0.00253	0.00253	0.00252
	(!A * !C * Y)	-0.00106	-0.00107	-0.00107
	(!A * !C * Y)	0.00252	0.00252	0.00253

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00179	-0.00177	-0.00181
	(A * C * !D * Y)	0.00278	0.00275	0.00266
	(A * !C * Y)	-0.00179	-0.00181	-0.00185
	(A * !C * Y)	0.00274	0.00275	0.00266
	(!A * C * D * Y)	-0.00360	-0.00376	-0.00373
	(!A * C * D * Y)	0.00264	0.00264	0.00264
	(!A * C * !D * Y)	-0.00216	-0.00218	-0.00215
	(!A * C * !D * Y)	0.00267	0.00266	0.00265
	(!A * !C * Y)	-0.00207	-0.00207	-0.00206
	(!A * !C * Y)	0.00265	0.00266	0.00266

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)**	0.00046	0.00046	0.00046
	(A * B * !D * Y)	-0.00129	-0.00130	-0.00129
	(A * !B * D * Y)	0.00090	0.00090	0.00090
	(A * !B * D * Y)	-0.00128	-0.00129	-0.00129
	(A * !B * !D * Y)	0.00052	0.00052	0.00051
	(A * !B * !D * Y)	-0.00129	-0.00130	-0.00129
	(!A * B * D * Y)	0.00088	0.00088	0.00087
	(!A * B * D * Y)	-0.00129	-0.00129	-0.00129
	(!A * B * !D * Y)	0.00052	0.00051	0.00051
	(!A * B * !D * Y)	-0.00130	-0.00130	-0.00129
	(!A * !B * D * Y)	0.00090	0.00091	0.00090
	(!A * !B * D * Y)	-0.00128	-0.00129	-0.00129
	(!A * !B * !D * Y)	0.00053	0.00054	0.00053
	(!A * !B * !D * Y)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00100	0.00101	0.00100
	(A * B * !D * Y)	-0.00249	-0.00251	-0.00249
	(A * !B * D * Y)	0.00188	0.00188	0.00188
	(A * !B * D * Y)	-0.00250	-0.00250	-0.00250
	(A * !B * !D * Y)	0.00111	0.00112	0.00111
	(A * !B * !D * Y)	-0.00250	-0.00251	-0.00250
	(!A * B * D * Y)	0.00183	0.00184	0.00184
	(!A * B * D * Y)	-0.00250	-0.00251	-0.00250
	(!A * B * !D * Y)	0.00112	0.00113	0.00113
	(!A * B * !D * Y)	-0.00250	-0.00252	-0.00251
	(!A * !B * D * Y)	0.00188	0.00189	0.00188
	(!A * !B * D * Y)	-0.00250	-0.00251	-0.00250
	(!A * !B * !D * Y)	0.00115	0.00115	0.00115
	(!A * !B * !D * Y)	-0.00249	-0.00251	-0.00250
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00187	0.00189	0.00187
	(A * B * !D * Y)	-0.00258	-0.00260	-0.00258
	(A * !B * D * Y)	0.00364	0.00366	0.00364
	(A * !B * D * Y)	-0.00259	-0.00260	-0.00259
	(A * !B * !D * Y)	0.00209	0.00210	0.00209
	(A * !B * !D * Y)	-0.00259	-0.00260	-0.00259
	(!A * B * D * Y)	0.00353	0.00356	0.00354
	(!A * B * D * Y)	-0.00259	-0.00260	-0.00260
	(!A * B * !D * Y)	0.00209	0.00209	0.00209
	(!A * B * !D * Y)	-0.00260	-0.00261	-0.00260
	(!A * !B * D * Y)	0.00364	0.00367	0.00364
	(!A * !B * D * Y)	-0.00259	-0.00261	-0.00259
	(!A * !B * !D * Y)	0.00217	0.00217	0.00216
	(!A * !B * !D * Y)	-0.00259	-0.00260	-0.00259

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)	-0.00045	-0.00045	-0.00045
	(A * B * !D * Y)	0.00130	0.00130	0.00130
	(A * !B * D * Y)	-0.00087	-0.00090	-0.00090
	(A * !B * D * Y)	0.00128	0.00130	0.00129
	(A * !B * !D * Y)	-0.00052	-0.00052	-0.00051
	(A * !B * !D * Y)	0.00129	0.00130	0.00130
	(!A * B * D * Y)	-0.00083	-0.00088	-0.00087
	(!A * B * D * Y)	0.00129	0.00130	0.00129
	(!A * B * !D * Y)	-0.00052	-0.00051	-0.00051
	(!A * B * !D * Y)	0.00130	0.00130	0.00130
	(!A * !B * D * Y)	-0.00087	-0.00091	-0.00090
	(!A * !B * D * Y)	0.00128	0.00130	0.00129
	(!A * !B * !D * Y)	-0.00053	-0.00054	-0.00053
	(!A * !B * !D * Y)	0.00129	0.00130	0.00130
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00096	-0.00096	-0.00096
	(A * B * !D * Y)	0.00253	0.00254	0.00252
	(A * !B * D * Y)	-0.00182	-0.00188	-0.00188
	(A * !B * D * Y)	0.00252	0.00253	0.00251
	(A * !B * !D * Y)	-0.00111	-0.00112	-0.00111
	(A * !B * !D * Y)	0.00250	0.00251	0.00251
	(!A * B * D * Y)	-0.00173	-0.00184	-0.00184
	(!A * B * D * Y)	0.00252	0.00253	0.00251
	(!A * B * !D * Y)	-0.00112	-0.00113	-0.00113
	(!A * B * !D * Y)	0.00253	0.00252	0.00252
	(!A * !B * D * Y)	-0.00182	-0.00189	-0.00188
	(!A * !B * D * Y)	0.00252	0.00253	0.00251
	(!A * !B * !D * Y)	-0.00115	-0.00115	-0.00115
	(!A * !B * !D * Y)	0.00250	0.00251	0.00251

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00180	-0.00181	-0.00181
	(A * B * !D * Y)	0.00264	0.00265	0.00262
	(A * !B * D * Y)	-0.00353	-0.00366	-0.00364
	(A * !B * D * Y)	0.00261	0.00262	0.00260
	(A * !B * !D * Y)	-0.00209	-0.00210	-0.00209
	(A * !B * !D * Y)	0.00259	0.00260	0.00260
	(!A * B * D * Y)	-0.00333	-0.00356	-0.00354
	(!A * B * D * Y)	0.00262	0.00262	0.00260
	(!A * B * !D * Y)	-0.00209	-0.00209	-0.00209
	(!A * B * !D * Y)	0.00262	0.00262	0.00261
	(!A * !B * D * Y)	-0.00353	-0.00367	-0.00364
	(!A * !B * D * Y)	0.00261	0.00262	0.00260
	(!A * !B * !D * Y)	-0.00217	-0.00217	-0.00216
	(!A * !B * !D * Y)	0.00259	0.00260	0.00260

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)	0.00090	0.00091	0.00090
	(A * B * !C * Y)	-0.00134	-0.00135	-0.00134
	(A * !B * C * Y)	0.00088	0.00089	0.00089
	(A * !B * C * Y)	-0.00134	-0.00134	-0.00134
	(A * !B * !C * Y)	0.00090	0.00091	0.00090
	(A * !B * !C * Y)	-0.00134	-0.00135	-0.00134
	(!A * B * C * Y)	0.00088	0.00089	0.00088
	(!A * B * C * Y)	-0.00134	-0.00135	-0.00134
	(!A * !C * Y)	0.00090	0.00091	0.00090
	(!A * !C * Y)	-0.00134	-0.00135	-0.00134
	(!A * !B * C * Y)	0.00088	0.00089	0.00089
	(!A * !B * C * Y)	-0.00134	-0.00135	-0.00134

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00191	0.00191	0.00192
	(A * B * !C * Y)	-0.00246	-0.00247	-0.00247
	(A * !B * C * Y)	0.00185	0.00186	0.00185
	(A * !B * C * Y)	-0.00246	-0.00248	-0.00247
	(A * !B * !C * Y)	0.00192	0.00193	0.00192
	(A * !B * !C * Y)	-0.00247	-0.00248	-0.00247
	(!A * B * C * Y)	0.00184	0.00186	0.00184
	(!A * B * C * Y)	-0.00246	-0.00248	-0.00247
	(!A * !C * Y)	0.00191	0.00192	0.00191
	(!A * !C * Y)	-0.00247	-0.00248	-0.00247
	(!A * !B * C * Y)	0.00185	0.00186	0.00185
	(!A * !B * C * Y)	-0.00246	-0.00248	-0.00247
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00383	0.00388	0.00385
	(A * B * !C * Y)	-0.00264	-0.00266	-0.00265
	(A * !B * C * Y)	0.00372	0.00375	0.00372
	(A * !B * C * Y)	-0.00265	-0.00266	-0.00265
	(A * !B * !C * Y)	0.00383	0.00387	0.00385
	(A * !B * !C * Y)	-0.00264	-0.00266	-0.00265
	(!A * B * C * Y)	0.00369	0.00372	0.00369
	(!A * B * C * Y)	-0.00265	-0.00266	-0.00265
	(!A * !C * Y)	0.00383	0.00387	0.00384
	(!A * !C * Y)	-0.00264	-0.00266	-0.00265
	(!A * !B * C * Y)	0.00372	0.00375	0.00372
	(!A * !B * C * Y)	-0.00265	-0.00266	-0.00265

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)**	-0.00088	-0.00091	-0.00090
	(A * B * !C * Y)	0.00134	0.00135	0.00135
	(A * !B * C * Y)	-0.00085	-0.00089	-0.00089
	(A * !B * C * Y)	0.00135	0.00135	0.00135
	(A * !B * !C * Y)	-0.00088	-0.00091	-0.00090
	(A * !B * !C * Y)	0.00134	0.00135	0.00135
	(!A * B * C * Y)	-0.00083	-0.00089	-0.00088
	(!A * B * C * Y)	0.00134	0.00135	0.00135
	(!A * !C * Y)	-0.00088	-0.00091	-0.00090
	(!A * !C * Y)	0.00134	0.00135	0.00135
	(!A * !B * C * Y)	-0.00085	-0.00089	-0.00089
	(!A * !B * C * Y)	0.00135	0.00135	0.00135
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00188	-0.00191	-0.00192
	(A * B * !C * Y)	0.00248	0.00249	0.00247
	(A * !B * C * Y)	-0.00177	-0.00186	-0.00185
	(A * !B * C * Y)	0.00249	0.00249	0.00248
	(A * !B * !C * Y)	-0.00188	-0.00193	-0.00192
	(A * !B * !C * Y)	0.00249	0.00249	0.00248
	(!A * B * C * Y)	-0.00174	-0.00186	-0.00184
	(!A * B * C * Y)	0.00249	0.00248	0.00248
	(!A * !C * Y)	-0.00188	-0.00192	-0.00191
	(!A * !C * Y)	0.00249	0.00249	0.00248
	(!A * !B * C * Y)	-0.00177	-0.00186	-0.00185
	(!A * !B * C * Y)	0.00248	0.00249	0.00248

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00375	-0.00386	-0.00385
	(A * B * !C * Y)	0.00266	0.00267	0.00265
	(A * !B * C * Y)	-0.00354	-0.00375	-0.00372
	(A * !B * C * Y)	0.00265	0.00267	0.00265
	(A * !B * !C * Y)	-0.00375	-0.00387	-0.00385
	(A * !B * !C * Y)	0.00266	0.00267	0.00265
	(!A * B * C * Y)	-0.00349	-0.00372	-0.00369
	(!A * B * C * Y)	0.00267	0.00266	0.00266
	(!A * !C * Y)	-0.00375	-0.00386	-0.00384
	(!A * !C * Y)	0.00266	0.00267	0.00265
	(!A * !B * C * Y)	-0.00354	-0.00375	-0.00372
	(!A * !B * C * Y)	0.00265	0.00267	0.00265

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B_N	Y
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2b_1	7.99200
sky130_fd_sc_hs__nor2b_2	11.18880
sky130_fd_sc_hs__nor2b_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	Y
sky130_fd_sc_hs__nor2b_1	0.00257	0.00208	0.16242
sky130_fd_sc_hs__nor2b_2	0.00504	0.00244	0.31002
sky130_fd_sc_hs__nor2b_4	0.00836	0.00350	0.62067

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.00013	0.00014
sky130_fd_sc_hs__nor2b_2	0.00000	0.00024	0.00028
sky130_fd_sc_hs__nor2b_4	0.00000	0.00037	0.00043

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)	0.23256	1.82475	13.48750
	B_N->Y (RR)	0.24479	1.51007	8.99110
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.21194	1.60361	13.48990
	B_N->Y (RR)	0.20184	1.28314	9.03346
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.16244	1.37809	13.46530
	B_N->Y (RR)	0.17633	1.11035	9.21767

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.03648	0.51255	4.08112
	B_N->Y (FF)	0.19832	0.91056	5.07254
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.03405	0.46888	4.05812
	B_N->Y (FF)	0.23116	0.95512	5.46917
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.04214	0.55534	5.31191
	B_N->Y (FF)	0.22471	0.96229	5.76614

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00047	0.00043	0.00041
	A	0.00309	0.00305	0.00306
	B_N	0.00482	0.00466	0.00460
	B_N	0.00268	0.00252	0.00247
sky130_fd_sc_hs__nor2b_2	A	0.00100	0.00093	0.00093
	A	0.00625	0.00617	0.00618
	B_N	0.00703	0.00690	0.00684
	B_N	0.00493	0.00483	0.00473
sky130_fd_sc_hs__nor2b_4	A	0.00157	0.00149	0.00153
	A	0.01017	0.01012	0.01012
	B_N	0.01047	0.01030	0.01026
	B_N	0.00736	0.00719	0.00718

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00300	0.00294	0.00289
	A	0.00040	0.00031	0.00028
	B_N	0.00262	0.00255	0.00252
	B_N	0.00475	0.00467	0.00465
sky130_fd_sc_hs__nor2b_2	A	0.00554	0.00533	0.00524
	A	0.00037	0.00012	0.00005
	B_N	0.00434	0.00426	0.00440
	B_N	0.00646	0.00649	0.00652
sky130_fd_sc_hs__nor2b_4	A	0.00875	0.00837	0.00851
	A	0.00023	-0.00022	-0.00025
	B_N	0.00638	0.00647	0.00688
	B_N	0.00948	0.00967	0.00977

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00100	0.00101	0.00100
	(!B_N * !Y)	-0.00137	-0.00139	-0.00139
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00207	0.00207	0.00205
	(!B_N * !Y)	-0.00248	-0.00253	-0.00251
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00255	0.00255	0.00252
	(!B_N * !Y)	-0.00497	-0.00507	-0.00503

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00100	-0.00100	-0.00100
	(!B_N * !Y)	0.00138	0.00140	0.00139
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00205	-0.00206	-0.00205
	(!B_N * !Y)	0.00250	0.00253	0.00251
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00253	-0.00254	-0.00252
	(!B_N * !Y)	0.00505	0.00508	0.00503

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00302	0.00285	0.00277
	(A * !Y)	0.00069	0.00051	0.00044
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00403	0.00383	0.00370
	(A * !Y)	0.00138	0.00118	0.00106
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00631	0.00600	0.00583
	(A * !Y)	0.00237	0.00206	0.00189

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00103	0.00091	0.00090
	(A * !Y)	0.00337	0.00324	0.00323
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00207	0.00191	0.00189
	(A * !Y)	0.00471	0.00455	0.00452
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00252	0.00231	0.00228
	(A * !Y)	0.00645	0.00625	0.00621

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
x	1	0
1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2_1	4.79520
sky130_fd_sc_hs__nor2_2	7.99200
sky130_fd_sc_hs__nor2_4	14.38560
sky130_fd_sc_hs__nor2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nor2_1	0.00259	0.00268	0.16233
sky130_fd_sc_hs__nor2_2	0.00407	0.00393	0.30957
sky130_fd_sc_hs__nor2_4	0.00774	0.00785	0.60293
sky130_fd_sc_hs__nor2_8	0.01510	0.01548	1.15179

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.00008	0.00010
sky130_fd_sc_hs__nor2_2	0.00000	0.00015	0.00019
sky130_fd_sc_hs__nor2_4	0.00000	0.00029	0.00039
sky130_fd_sc_hs__nor2_8	0.00000	0.00058	0.00077

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)	0.22756	1.82034	13.48020
	B->Y (FR)	0.19297	1.73066	13.11410
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.17173	1.56727	13.46360
	B->Y (FR)	0.11911	1.46325	13.08750
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.17096	1.39508	13.45420
	B->Y (FR)	0.11884	1.28978	13.10940
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.16126	1.25013	13.40160
	B->Y (FR)	0.11788	1.16586	13.12040

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.03667	0.51250	4.07872
	B->Y (RF)	0.03501	0.50400	4.06406
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.04160	0.59946	5.23014
	B->Y (RF)	0.03727	0.58372	5.21229
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.04128	0.54992	5.21072
	B->Y (RF)	0.03670	0.52804	5.16156
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.04001	0.50073	5.13944
	B->Y (RF)	0.04267	0.48803	5.13174

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00028	-0.00032	-0.00034
	A	0.00307	0.00302	0.00303
	B	-0.00034	-0.00039	-0.00041
	B	0.00259	0.00253	0.00251
sky130_fd_sc_hs__nor2_2	A	-0.00058	-0.00061	-0.00062
	A	0.00489	0.00485	0.00485
	B	-0.00041	-0.00045	-0.00044
	B	0.00382	0.00378	0.00377
sky130_fd_sc_hs__nor2_4	A	0.00023	0.00014	0.00014
	A	0.01075	0.01070	0.01072
	B	-0.00005	-0.00015	-0.00011
	B	0.00852	0.00828	0.00842
sky130_fd_sc_hs__nor2_8	A	-0.00016	-0.00031	-0.00026
	A	0.02056	0.02036	0.02052
	B	-0.00080	-0.00097	-0.00087
	B	0.01612	0.01596	0.01609

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00365	0.00357	0.00352
	A	0.00034	0.00025	0.00021
	B	0.00283	0.00281	0.00278
	B	-0.00009	-0.00012	-0.00015
sky130_fd_sc_hs__nor2_2	A	0.00573	0.00554	0.00560
	A	0.00038	0.00018	0.00010
	B	0.00327	0.00325	0.00336
	B	-0.00095	-0.00097	-0.00097
sky130_fd_sc_hs__nor2_4	A	0.01093	0.01051	0.01051
	A	0.00060	0.00014	0.00006
	B	0.00650	0.00640	0.00668
	B	-0.00204	-0.00218	-0.00207
sky130_fd_sc_hs__nor2_8	A	0.02098	0.02006	0.02052
	A	0.00066	-0.00035	-0.00038
	B	0.01283	0.01256	0.01340
	B	-0.00406	-0.00434	-0.00398

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00108	0.00109	0.00108
	(B * !Y)	-0.00117	-0.00120	-0.00120
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00139	0.00138	0.00137
	(B * !Y)	-0.00234	-0.00241	-0.00239
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00221	0.00221	0.00219
	(B * !Y)	-0.00473	-0.00486	-0.00481
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00426	0.00428	0.00422
	(B * !Y)	-0.00936	-0.00963	-0.00957

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00108	-0.00108	-0.00108
	(B * !Y)	0.00120	0.00120	0.00120
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00137	-0.00138	-0.00137
	(B * !Y)	0.00238	0.00241	0.00239
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00220	-0.00220	-0.00219
	(B * !Y)	0.00486	0.00486	0.00481
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00424	-0.00425	-0.00422
	(B * !Y)	0.00961	0.00963	0.00957

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00123	0.00123	0.00123
	(A * !Y)	-0.00073	-0.00073	-0.00073
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00136	0.00137	0.00136
	(A * !Y)	-0.00147	-0.00148	-0.00148
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00275	0.00276	0.00276
	(A * !Y)	-0.00291	-0.00292	-0.00292
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00540	0.00542	0.00542
	(A * !Y)	-0.00578	-0.00579	-0.00579

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00120	-0.00120	-0.00123
	(A * !Y)	0.00076	0.00076	0.00074
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00126	-0.00127	-0.00136
	(A * !Y)	0.00158	0.00158	0.00150
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00256	-0.00258	-0.00275
	(A * !Y)	0.00309	0.00310	0.00297
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00506	-0.00511	-0.00542
	(A * !Y)	0.00609	0.00611	0.00588

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C_N	Y
0	x	0	0
0	0	1	1
x	1	1	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3b_1	9.59040
sky130_fd_sc_hs__nor3b_2	15.98400
sky130_fd_sc_hs__nor3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	Y
sky130_fd_sc_hs__nor3b_1	0.00253	0.00265	0.00202	0.10034
sky130_fd_sc_hs__nor3b_2	0.00493	0.00494	0.00243	0.19536
sky130_fd_sc_hs__nor3b_4	0.00993	0.00986	0.00342	0.36173

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	0.00014	0.00018
sky130_fd_sc_hs__nor3b_2	0.00000	0.00025	0.00037
sky130_fd_sc_hs__nor3b_4	0.00000	0.00043	0.00063

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)	0.45687	2.21867	13.32260
	B->Y (FR)	0.42955	2.18204	13.53440
	C_N->Y (RR)	0.38449	1.82714	9.11732
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.41238	1.95047	13.44460
	B->Y (FR)	0.37863	1.90649	13.68180
	C_N->Y (RR)	0.30126	1.53712	9.29024
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.40340	1.73779	13.30100
	B->Y (FR)	0.37219	1.69693	13.56510
	C_N->Y (RR)	0.32722	1.41734	9.53413

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.03790	0.47867	3.44230
	B->Y (RF)	0.03989	0.47981	3.47152
	C_N->Y (FF)	0.20221	0.89005	4.83497
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.03398	0.43664	3.40509
	B->Y (RF)	0.03469	0.42924	3.38248
	C_N->Y (FF)	0.23381	0.93467	5.23183
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.03383	0.40873	3.38544
	B->Y (RF)	0.03467	0.40246	3.36799
	C_N->Y (FF)	0.25484	0.94078	5.17866

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00110	0.00104	0.00102
	A	0.00418	0.00411	0.00410
	B	0.00097	0.00091	0.00089
	B	0.00377	0.00370	0.00368
	C_N	0.00518	0.00498	0.00490
	C_N	0.00337	0.00318	0.00310
sky130_fd_sc_hs__nor3b_2	A	0.00164	0.00155	0.00152
	A	0.00810	0.00799	0.00799
	B	0.00163	0.00152	0.00151
	B	0.00715	0.00703	0.00701
	C_N	0.00761	0.00743	0.00735
	C_N	0.00591	0.00572	0.00565
sky130_fd_sc_hs__nor3b_4	A	0.00300	0.00280	0.00277
	A	0.01598	0.01580	0.01579
	B	0.00314	0.00293	0.00292
	B	0.01429	0.01406	0.01404
	C_N	0.01374	0.01356	0.01348
	C_N	0.01175	0.01156	0.01149

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00385	0.00376	0.00365
	A	0.00083	0.00072	0.00064
	B	0.00319	0.00312	0.00305
	B	0.00042	0.00034	0.00027
	C_N	0.00280	0.00273	0.00271
	C_N	0.00460	0.00453	0.00451
sky130_fd_sc_hs__nor3b_2	A	0.00757	0.00737	0.00713
	A	0.00128	0.00102	0.00084
	B	0.00584	0.00566	0.00551
	B	0.00038	0.00016	0.00004
	C_N	0.00476	0.00477	0.00480
	C_N	0.00647	0.00647	0.00651
sky130_fd_sc_hs__nor3b_4	A	0.01505	0.01460	0.01420
	A	0.00234	0.00182	0.00150
	B	0.01167	0.01126	0.01102
	B	0.00061	0.00014	-0.00006
	C_N	0.01025	0.01039	0.01053
	C_N	0.01224	0.01237	0.01253

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)	0.00101	0.00101	0.00100
	(B * C_N * !Y)	-0.00115	-0.00118	-0.00117
	(B * !C_N * !Y)	0.00096	0.00097	0.00096
	(B * !C_N * !Y)	-0.00119	-0.00121	-0.00121
	(!B * !C_N * !Y)	0.00096	0.00096	0.00096
	(!B * !C_N * !Y)	-0.00113	-0.00116	-0.00116
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00203	0.00205	0.00203
	(B * C_N * !Y)	-0.00237	-0.00245	-0.00242
	(B * !C_N * !Y)	0.00203	0.00205	0.00203
	(B * !C_N * !Y)	-0.00237	-0.00245	-0.00242
	(!B * !C_N * !Y)	0.00204	0.00203	0.00203
	(!B * !C_N * !Y)	-0.00227	-0.00232	-0.00232
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00437	0.00439	0.00434
	(B * C_N * !Y)	-0.00449	-0.00467	-0.00462
	(B * !C_N * !Y)	0.00403	0.00407	0.00403
	(B * !C_N * !Y)	-0.00483	-0.00499	-0.00495
	(!B * !C_N * !Y)	0.00406	0.00404	0.00402
	(!B * !C_N * !Y)	-0.00466	-0.00475	-0.00476

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)	-0.00100	-0.00101	-0.00100
	(B * C_N * !Y)	0.00116	0.00118	0.00117
	(B * !C_N * !Y)	-0.00096	-0.00096	-0.00096
	(B * !C_N * !Y)	0.00121	0.00121	0.00121
	(!B * !C_N * !Y)	-0.00096	-0.00096	-0.00096
	(!B * !C_N * !Y)	0.00116	0.00116	0.00116
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00202	-0.00203	-0.00202
	(B * C_N * !Y)	0.00241	0.00245	0.00242
	(B * !C_N * !Y)	-0.00203	-0.00203	-0.00202
	(B * !C_N * !Y)	0.00244	0.00245	0.00242
	(!B * !C_N * !Y)	-0.00202	-0.00203	-0.00203
	(!B * !C_N * !Y)	0.00232	0.00232	0.00232
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00436	-0.00437	-0.00434
	(B * C_N * !Y)	0.00463	0.00467	0.00462
	(B * !C_N * !Y)	-0.00402	-0.00405	-0.00403
	(B * !C_N * !Y)	0.00493	0.00499	0.00495
	(!B * !C_N * !Y)	-0.00401	-0.00402	-0.00402
	(!B * !C_N * !Y)	0.00474	0.00475	0.00476

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)	0.00118	0.00118	0.00118
	(A * C_N * !Y)	-0.00080	-0.00080	-0.00080
	(A * !C_N * !Y)	0.00100	0.00101	0.00100
	(A * !C_N * !Y)	-0.00101	-0.00101	-0.00101
	(!A * !C_N * !Y)	0.00100	0.00101	0.00100
	(!A * !C_N * !Y)	-0.00132	-0.00134	-0.00133
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00209	0.00209	0.00209
	(A * C_N * !Y)	-0.00169	-0.00168	-0.00168
	(A * !C_N * !Y)	0.00202	0.00203	0.00202
	(A * !C_N * !Y)	-0.00182	-0.00183	-0.00182
	(!A * !C_N * !Y)	0.00203	0.00202	0.00201
	(!A * !C_N * !Y)	-0.00246	-0.00250	-0.00249
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00423	0.00424	0.00422
	(A * C_N * !Y)	-0.00332	-0.00333	-0.00335
	(A * !C_N * !Y)	0.00406	0.00407	0.00406
	(A * !C_N * !Y)	-0.00367	-0.00366	-0.00366
	(!A * !C_N * !Y)	0.00403	0.00407	0.00404
	(!A * !C_N * !Y)	-0.00493	-0.00501	-0.00498

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)	-0.00117	-0.00117	-0.00117
	(A * C_N * !Y)	0.00081	0.00081	0.00082
	(A * !C_N * !Y)	-0.00100	-0.00100	-0.00100
	(A * !C_N * !Y)	0.00101	0.00101	0.00101
	(!A * !C_N * !Y)	-0.00100	-0.00101	-0.00100
	(!A * !C_N * !Y)	0.00133	0.00134	0.00133
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00207	-0.00207	-0.00208
	(A * C_N * !Y)	0.00170	0.00170	0.00171
	(A * !C_N * !Y)	-0.00201	-0.00201	-0.00201
	(A * !C_N * !Y)	0.00182	0.00183	0.00182
	(!A * !C_N * !Y)	-0.00201	-0.00202	-0.00201
	(!A * !C_N * !Y)	0.00249	0.00251	0.00249
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00419	-0.00420	-0.00421
	(A * C_N * !Y)	0.00337	0.00338	0.00340
	(A * !C_N * !Y)	-0.00405	-0.00405	-0.00405
	(A * !C_N * !Y)	0.00367	0.00366	0.00366
	(!A * !C_N * !Y)	-0.00402	-0.00405	-0.00403
	(!A * !C_N * !Y)	0.00497	0.00502	0.00498

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00296	0.00279	0.00271
	(B * !Y)	0.00073	0.00056	0.00049
	(A * !B * !Y)	0.00303	0.00287	0.00277
	(A * !B * !Y)	0.00077	0.00059	0.00050
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00399	0.00379	0.00366
	(B * !Y)	0.00139	0.00118	0.00106
	(A * !B * !Y)	0.00415	0.00395	0.00378
	(A * !B * !Y)	0.00147	0.00125	0.00110
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00653	0.00625	0.00606
	(B * !Y)	0.00261	0.00232	0.00214
	(A * !B * !Y)	0.00684	0.00656	0.00625
	(A * !B * !Y)	0.00275	0.00245	0.00219

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00107	0.00095	0.00094
	(B * !Y)	0.00330	0.00317	0.00316
	(A * !B * !Y)	0.00107	0.00095	0.00094
	(A * !B * !Y)	0.00330	0.00318	0.00317
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00204	0.00189	0.00186
	(B * !Y)	0.00464	0.00448	0.00446
	(A * !B * !Y)	0.00204	0.00189	0.00186
	(A * !B * !Y)	0.00464	0.00449	0.00446
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00484	0.00462	0.00458
	(B * !Y)	0.00875	0.00854	0.00849
	(A * !B * !Y)	0.00484	0.00462	0.00458
	(A * !B * !Y)	0.00877	0.00855	0.00851

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	Y
0	0	0	1
0	x	1	0
x	1	x	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3_1	6.39360
sky130_fd_sc_hs__nor3_2	11.18880
sky130_fd_sc_hs__nor3_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nor3_1	0.00263	0.00286	0.00273	0.10146
sky130_fd_sc_hs__nor3_2	0.00403	0.00422	0.00399	0.20042
sky130_fd_sc_hs__nor3_4	0.00880	0.00877	0.00854	0.36528

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3_1	0.00000	0.00009	0.00013
sky130_fd_sc_hs__nor3_2	0.00000	0.00016	0.00019
sky130_fd_sc_hs__nor3_4	0.00000	0.00032	0.00039

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)	0.47089	2.23340	13.38640
	B->Y (FR)	0.44915	2.20216	13.59740
	C->Y (FR)	0.34973	2.04391	13.02430
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.34406	1.87713	13.42210
	B->Y (FR)	0.31622	1.83970	13.61480
	C->Y (FR)	0.19051	1.65578	13.04280
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.36067	1.70184	13.30080
	B->Y (FR)	0.31772	1.64284	13.49760
	C->Y (FR)	0.19283	1.46489	12.92660

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.03893	0.48163	3.45690
	B->Y (RF)	0.04140	0.48192	3.47946
	C->Y (RF)	0.03865	0.47185	3.46672
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.04491	0.56791	4.46232
	B->Y (RF)	0.04605	0.55584	4.42929
	C->Y (RF)	0.04043	0.53724	4.40669
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.04223	0.52188	4.34436
	B->Y (RF)	0.04528	0.51535	4.35360
	C->Y (RF)	0.04569	0.49697	4.32852

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00016	0.00009	0.00007
	A	0.00436	0.00429	0.00427
	B	0.00020	0.00012	0.00009
	B	0.00397	0.00388	0.00385
	C	0.00015	0.00007	0.00004
	C	0.00347	0.00338	0.00324
sky130_fd_sc_hs__nor3_2	A	0.00007	0.00002	0.00000
	A	0.00660	0.00653	0.00655
	B	0.00027	0.00021	0.00020
	B	0.00593	0.00587	0.00586
	C	0.00027	0.00018	0.00017
	C	0.00474	0.00468	0.00468
sky130_fd_sc_hs__nor3_4	A	-0.00011	-0.00024	-0.00025
	A	0.01404	0.01388	0.01391
	B	-0.00008	-0.00024	-0.00024
	B	0.01183	0.01165	0.01165
	C	-0.00047	-0.00061	-0.00063
	C	0.00968	0.00952	0.00901

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00498	0.00488	0.00476
	A	0.00086	0.00075	0.00066
	B	0.00422	0.00413	0.00404
	B	0.00049	0.00039	0.00032
	C	0.00323	0.00322	0.00317
	C	-0.00007	-0.00009	-0.00015
sky130_fd_sc_hs__nor3_2	A	0.00770	0.00747	0.00728
	A	0.00138	0.00113	0.00100
	B	0.00603	0.00584	0.00569
	B	0.00050	0.00029	0.00018
	C	0.00358	0.00357	0.00354
	C	-0.00089	-0.00091	-0.00095
sky130_fd_sc_hs__nor3_4	A	0.01663	0.01606	0.01563
	A	0.00293	0.00231	0.00201
	B	0.01268	0.01231	0.01208
	B	0.00097	0.00053	0.00036
	C	0.00829	0.00818	0.00820
	C	-0.00183	-0.00196	-0.00196

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00111	0.00112	0.00111
	(B * C * !Y)	-0.00117	-0.00119	-0.00119
	(B * !C * !Y)	0.00111	0.00112	0.00111
	(B * !C * !Y)	-0.00116	-0.00120	-0.00119
	(!B * C * !Y)	0.00111	0.00111	0.00111
	(!B * C * !Y)	-0.00110	-0.00113	-0.00113
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00130	0.00131	0.00130
	(B * C * !Y)	-0.00229	-0.00235	-0.00234
	(B * !C * !Y)	0.00130	0.00131	0.00130
	(B * !C * !Y)	-0.00229	-0.00235	-0.00234
	(!B * C * !Y)	0.00131	0.00131	0.00130
	(!B * C * !Y)	-0.00215	-0.00223	-0.00221
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00248	0.00251	0.00248
	(B * C * !Y)	-0.00485	-0.00503	-0.00498
	(B * !C * !Y)	0.00248	0.00251	0.00248
	(B * !C * !Y)	-0.00485	-0.00502	-0.00498
	(!B * C * !Y)	0.00247	0.00250	0.00248
	(!B * C * !Y)	-0.00455	-0.00474	-0.00471

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00111	-0.00111	-0.00111
	(B * C * !Y)	0.00119	0.00119	0.00119
	(B * !C * !Y)	-0.00110	-0.00111	-0.00111
	(B * !C * !Y)	0.00119	0.00120	0.00119
	(!B * C * !Y)	-0.00110	-0.00110	-0.00110
	(!B * C * !Y)	0.00112	0.00113	0.00113
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00130	-0.00130	-0.00130
	(B * C * !Y)	0.00234	0.00235	0.00234
	(B * !C * !Y)	-0.00130	-0.00130	-0.00130
	(B * !C * !Y)	0.00234	0.00235	0.00234
	(!B * C * !Y)	-0.00130	-0.00131	-0.00130
	(!B * C * !Y)	0.00220	0.00223	0.00221
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00248	-0.00250	-0.00248
	(B * C * !Y)	0.00496	0.00503	0.00498
	(B * !C * !Y)	-0.00248	-0.00249	-0.00248
	(B * !C * !Y)	0.00496	0.00502	0.00498
	(!B * C * !Y)	-0.00247	-0.00249	-0.00248
	(!B * C * !Y)	0.00470	0.00474	0.00471

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00114	0.00115	0.00114
	(A * C * !Y)	-0.00083	-0.00083	-0.00083
	(A * !C * !Y)	0.00115	0.00115	0.00114
	(A * !C * !Y)	-0.00079	-0.00079	-0.00079
	(!A * C * !Y)	0.00114	0.00115	0.00114
	(!A * C * !Y)	-0.00112	-0.00115	-0.00114
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00115	0.00115	0.00115
	(A * C * !Y)	-0.00180	-0.00180	-0.00180
	(A * !C * !Y)	0.00117	0.00117	0.00114
	(A * !C * !Y)	-0.00172	-0.00172	-0.00174
	(!A * C * !Y)	0.00115	0.00114	0.00113
	(!A * C * !Y)	-0.00240	-0.00247	-0.00245
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00269	0.00270	0.00268
	(A * C * !Y)	-0.00336	-0.00340	-0.00338
	(A * !C * !Y)	0.00268	0.00269	0.00268
	(A * !C * !Y)	-0.00319	-0.00320	-0.00321
	(!A * C * !Y)	0.00268	0.00269	0.00268
	(!A * C * !Y)	-0.00456	-0.00468	-0.00464

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00114	-0.00114	-0.00114
	(A * C * !Y)	0.00083	0.00083	0.00083
	(A * !C * !Y)	-0.00114	-0.00114	-0.00114
	(A * !C * !Y)	0.00080	0.00080	0.00080
	(!A * C * !Y)	-0.00114	-0.00115	-0.00114
	(!A * C * !Y)	0.00114	0.00115	0.00114
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00113	-0.00114	-0.00114
	(A * C * !Y)	0.00180	0.00180	0.00180
	(A * !C * !Y)	-0.00113	-0.00113	-0.00113
	(A * !C * !Y)	0.00177	0.00177	0.00177
	(!A * C * !Y)	-0.00113	-0.00114	-0.00113
	(!A * C * !Y)	0.00244	0.00247	0.00245
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00266	-0.00268	-0.00267
	(A * C * !Y)	0.00336	0.00340	0.00338
	(A * !C * !Y)	-0.00266	-0.00267	-0.00265
	(A * !C * !Y)	0.00323	0.00325	0.00327
	(!A * C * !Y)	-0.00268	-0.00269	-0.00267
	(!A * C * !Y)	0.00465	0.00468	0.00464

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00121	0.00121	0.00121
	(B * !Y)	-0.00073	-0.00073	-0.00073
	(A * !B * !Y)	0.00121	0.00121	0.00121
	(A * !B * !Y)	-0.00073	-0.00073	-0.00073
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00135	0.00135	0.00135
	(B * !Y)	-0.00147	-0.00146	-0.00146
	(A * !B * !Y)	0.00135	0.00135	0.00135
	(A * !B * !Y)	-0.00146	-0.00146	-0.00146
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00304	0.00310	0.00306
	(B * !Y)	-0.00299	-0.00304	-0.00300
	(A * !B * !Y)	0.00305	0.00310	0.00306
	(A * !B * !Y)	-0.00298	-0.00303	-0.00299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00118	-0.00118	-0.00121
	(B * !Y)	0.00076	0.00076	0.00074
	(A * !B * !Y)	-0.00111	-0.00111	-0.00120
	(A * !B * !Y)	0.00080	0.00080	0.00074
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00125	-0.00125	-0.00135
	(B * !Y)	0.00156	0.00155	0.00149
	(A * !B * !Y)	-0.00110	-0.00111	-0.00132
	(A * !B * !Y)	0.00165	0.00164	0.00149
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00288	-0.00289	-0.00306
	(B * !Y)	0.00315	0.00315	0.00304
	(A * !B * !Y)	-0.00254	-0.00256	-0.00299
	(A * !B * !Y)	0.00333	0.00332	0.00305

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	Y
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4bb_1	15.98400
sky130_fd_sc_hs__nor4bb_2	23.97600
sky130_fd_sc_hs__nor4bb_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	Y
sky130_fd_sc_hs__nor4bb_1	0.00266	0.00274	0.00215	0.00212	0.07290
sky130_fd_sc_hs__nor4bb_2	0.00493	0.00519	0.00252	0.00239	0.13548
sky130_fd_sc_hs__nor4bb_4	0.00974	0.01036	0.00347	0.00337	0.26456

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	0.00019	0.00028
sky130_fd_sc_hs__nor4bb_2	0.00000	0.00033	0.00057
sky130_fd_sc_hs__nor4bb_4	0.00000	0.00051	0.00091

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)	0.76895	2.67396	13.46060
	B->Y (FR)	0.74747	2.63625	13.59240
	C_N->Y (RR)	0.72721	2.33816	9.63793
	D_N->Y (RR)	0.51846	2.11187	9.30931
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.72032	2.37659	13.43740
	B->Y (FR)	0.68632	2.31523	13.52450
	C_N->Y (RR)	0.65133	2.01247	9.61588
	D_N->Y (RR)	0.43353	1.77924	9.30355
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.70161	2.12283	13.43690
	B->Y (FR)	0.67013	2.07857	13.55250
	C_N->Y (RR)	0.62548	1.80560	9.85458
	D_N->Y (RR)	0.42192	1.59666	9.60666

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.03979	0.46398	3.10767
	B->Y (RF)	0.04053	0.46024	3.08284
	C_N->Y (FF)	0.24112	0.92108	4.86589
	D_N->Y (FF)	0.20952	0.88202	4.71385
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.03534	0.42224	3.02348
	B->Y (RF)	0.03649	0.42192	3.01984
	C_N->Y (FF)	0.25901	0.95231	5.20133
	D_N->Y (FF)	0.23543	0.92894	5.12456
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.03645	0.41044	3.10478
	B->Y (RF)	0.03692	0.40122	3.04682
	C_N->Y (FF)	0.26306	0.93345	5.02920
	D_N->Y (FF)	0.25520	0.92819	5.01966

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00197	0.00189	0.00187
	A	0.00533	0.00525	0.00523
	B	0.00196	0.00186	0.00184
	B	0.00493	0.00484	0.00482
	C_N	0.00668	0.00645	0.00637
	C_N	0.00482	0.00459	0.00451
	D_N	0.00565	0.00544	0.00536
	D_N	0.00400	0.00379	0.00370
sky130_fd_sc_hs__nor4bb_2	A	0.00360	0.00346	0.00344
	A	0.01012	0.00997	0.00996
	B	0.00357	0.00341	0.00339
	B	0.00929	0.00913	0.00911
	C_N	0.00976	0.00952	0.00945
	C_N	0.00811	0.00785	0.00778
	D_N	0.00852	0.00828	0.00821
	D_N	0.00706	0.00681	0.00674
sky130_fd_sc_hs__nor4bb_4	A	0.00741	0.00711	0.00709
	A	0.01998	0.01967	0.01968
	B	0.00723	0.00696	0.00693
	B	0.01854	0.01826	0.01823
	C_N	0.01774	0.01746	0.01731
	C_N	0.01587	0.01559	0.01545
	D_N	0.01525	0.01496	0.01486
	D_N	0.01352	0.01323	0.01313

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00449	0.00439	0.00423
	A	0.00120	0.00108	0.00095
	B	0.00381	0.00373	0.00359
	B	0.00086	0.00075	0.00062
	C_N	0.00392	0.00378	0.00368
	C_N	0.00578	0.00563	0.00553
	D_N	0.00295	0.00286	0.00284
	D_N	0.00460	0.00450	0.00447
sky130_fd_sc_hs__nor4bb_2	A	0.00868	0.00843	0.00806
	A	0.00237	0.00209	0.00179
	B	0.00691	0.00674	0.00648
	B	0.00125	0.00104	0.00079
	C_N	0.00680	0.00664	0.00647
	C_N	0.00848	0.00830	0.00814
	D_N	0.00501	0.00497	0.00503
	D_N	0.00648	0.00646	0.00649
sky130_fd_sc_hs__nor4bb_4	A	0.01660	0.01609	0.01544
	A	0.00444	0.00388	0.00335
	B	0.01384	0.01344	0.01288
	B	0.00271	0.00224	0.00171
	C_N	0.01248	0.01225	0.01199
	C_N	0.01436	0.01410	0.01386
	D_N	0.01034	0.01039	0.01053
	D_N	0.01205	0.01212	0.01225

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)**	0.00115	0.00115	0.00114
	(B * C_N * D_N * !Y)	-0.00115	-0.00118	-0.00117
	(B * !D_N * !Y)	0.00115	0.00115	0.00114
	(B * !D_N * !Y)	-0.00115	-0.00118	-0.00117
	(B * !C_N * D_N * !Y)	0.00106	0.00106	0.00105
	(B * !C_N * D_N * !Y)	-0.00124	-0.00127	-0.00126
	(!B * C_N * !D_N * !Y)	0.00120	0.00119	0.00116
	(!B * C_N * !D_N * !Y)	-0.00108	-0.00110	-0.00110
	(!B * !C_N * D_N * !Y)	0.00106	0.00105	0.00105
	(!B * !C_N * D_N * !Y)	-0.00118	-0.00121	-0.00121
	(!B * !C_N * !D_N * !Y)	0.00106	0.00105	0.00105
	(!B * !C_N * !D_N * !Y)	-0.00118	-0.00121	-0.00121
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00202	0.00202	0.00201
	(B * C_N * D_N * !Y)	-0.00237	-0.00243	-0.00241
	(B * !D_N * !Y)	0.00202	0.00203	0.00201
	(B * !D_N * !Y)	-0.00236	-0.00243	-0.00241
	(B * !C_N * D_N * !Y)	0.00203	0.00202	0.00201
	(B * !C_N * D_N * !Y)	-0.00238	-0.00243	-0.00241
	(!B * C_N * !D_N * !Y)	0.00214	0.00211	0.00207
	(!B * C_N * !D_N * !Y)	-0.00221	-0.00227	-0.00227
	(!B * !C_N * D_N * !Y)	0.00202	0.00201	0.00201
	(!B * !C_N * D_N * !Y)	-0.00225	-0.00231	-0.00231
	(!B * !C_N * !D_N * !Y)	0.00201	0.00201	0.00201
	(!B * !C_N * !D_N * !Y)	-0.00225	-0.00231	-0.00231

sky130_fd_sc_hs__nor4bb_4	(B * C_N * D_N * !Y)	0.00390	0.00394	0.00390
	(B * C_N * D_N * !Y)	-0.00457	-0.00471	-0.00467
	(B * !D_N * !Y)	0.00392	0.00396	0.00392
	(B * !D_N * !Y)	-0.00456	-0.00470	-0.00466
	(B * !C_N * D_N * !Y)	0.00389	0.00393	0.00390
	(B * !C_N * D_N * !Y)	-0.00458	-0.00472	-0.00468
	(!B * C_N * !D_N * !Y)	0.00415	0.00410	0.00400
	(!B * C_N * !D_N * !Y)	-0.00424	-0.00439	-0.00437
	(!B * !C_N * D_N * !Y)	0.00390	0.00392	0.00390
	(!B * !C_N * D_N * !Y)	-0.00433	-0.00447	-0.00445
	(!B * !C_N * !D_N * !Y)	0.00389	0.00392	0.00389
	(!B * !C_N * !D_N * !Y)	-0.00433	-0.00447	-0.00446

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)	-0.00114	-0.00115	-0.00114
	(B * C_N * D_N * !Y)	0.00117	0.00119	0.00117
	(B * !D_N * !Y)	-0.00114	-0.00115	-0.00114
	(B * !D_N * !Y)	0.00118	0.00119	0.00117
	(B * !C_N * D_N * !Y)	-0.00105	-0.00106	-0.00105
	(B * !C_N * D_N * !Y)	0.00126	0.00127	0.00126
	(!B * C_N * !D_N * !Y)	-0.00118	-0.00119	-0.00116
	(!B * C_N * !D_N * !Y)	0.00110	0.00110	0.00110
	(!B * !C_N * D_N * !Y)	-0.00105	-0.00105	-0.00105
	(!B * !C_N * D_N * !Y)	0.00121	0.00121	0.00121
	(!B * !C_N * !D_N * !Y)	-0.00105	-0.00105	-0.00105
	(!B * !C_N * !D_N * !Y)	0.00122	0.00121	0.00121

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00200	-0.00202	-0.00201
	(B * C_N * D_N * !Y)	0.00241	0.00243	0.00241
	(B * !D_N * !Y)	-0.00200	-0.00202	-0.00201
	(B * !D_N * !Y)	0.00239	0.00243	0.00241
	(B * !C_N * D_N * !Y)	-0.00199	-0.00201	-0.00200
	(B * !C_N * D_N * !Y)	0.00239	0.00243	0.00241
	(!B * C_N * !D_N * !Y)	-0.00210	-0.00211	-0.00207
	(!B * C_N * !D_N * !Y)	0.00225	0.00227	0.00227
	(!B * !C_N * D_N * !Y)	-0.00199	-0.00200	-0.00200
	(!B * !C_N * D_N * !Y)	0.00229	0.00231	0.00231
	(!B * !C_N * !D_N * !Y)	-0.00201	-0.00200	-0.00200
	(!B * !C_N * !D_N * !Y)	0.00231	0.00231	0.00231
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00390	-0.00392	-0.00390
	(B * C_N * D_N * !Y)	0.00468	0.00471	0.00467
	(B * !D_N * !Y)	-0.00391	-0.00394	-0.00391
	(B * !D_N * !Y)	0.00465	0.00470	0.00466
	(B * !C_N * D_N * !Y)	-0.00388	-0.00391	-0.00389
	(B * !C_N * D_N * !Y)	0.00466	0.00472	0.00468
	(!B * C_N * !D_N * !Y)	-0.00409	-0.00410	-0.00400
	(!B * C_N * !D_N * !Y)	0.00436	0.00439	0.00437
	(!B * !C_N * D_N * !Y)	-0.00388	-0.00390	-0.00389
	(!B * !C_N * D_N * !Y)	0.00444	0.00447	0.00445
	(!B * !C_N * !D_N * !Y)	-0.00388	-0.00389	-0.00389
	(!B * !C_N * !D_N * !Y)	0.00445	0.00447	0.00446

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)**	0.00123	0.00123	0.00123
	(A * C_N * D_N * !Y)	-0.00080	-0.00080	-0.00080
	(A * C_N * !D_N * !Y)	0.00130	0.00132	0.00132
	(A * C_N * !D_N * !Y)	-0.00085	-0.00085	-0.00085
	(A * !C_N * D_N * !Y)	0.00110	0.00110	0.00110
	(A * !C_N * D_N * !Y)	-0.00099	-0.00099	-0.00099
	(A * !C_N * !D_N * !Y)	0.00111	0.00110	0.00110
	(A * !C_N * !D_N * !Y)	-0.00102	-0.00102	-0.00102
	(!A * C_N * !D_N * !Y)	0.00132	0.00128	0.00125
	(!A * C_N * !D_N * !Y)	-0.00105	-0.00108	-0.00108
	(!A * !C_N * D_N * !Y)	0.00110	0.00110	0.00110
	(!A * !C_N * D_N * !Y)	-0.00127	-0.00128	-0.00128
	(!A * !C_N * !D_N * !Y)	0.00110	0.00110	0.00110
	(!A * !C_N * !D_N * !Y)	-0.00126	-0.00128	-0.00128
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00218	0.00217	0.00217
	(A * C_N * D_N * !Y)	-0.00175	-0.00174	-0.00174
	(A * C_N * !D_N * !Y)	0.00230	0.00235	0.00236
	(A * C_N * !D_N * !Y)	-0.00186	-0.00185	-0.00185
	(A * !C_N * D_N * !Y)	0.00212	0.00210	0.00210
	(A * !C_N * D_N * !Y)	-0.00197	-0.00196	-0.00196
	(A * !C_N * !D_N * !Y)	0.00212	0.00210	0.00210
	(A * !C_N * !D_N * !Y)	-0.00200	-0.00200	-0.00200
	(!A * C_N * !D_N * !Y)	0.00234	0.00228	0.00222
	(!A * C_N * !D_N * !Y)	-0.00230	-0.00235	-0.00235
	(!A * !C_N * D_N * !Y)	0.00210	0.00211	0.00210
	(!A * !C_N * D_N * !Y)	-0.00253	-0.00257	-0.00256
	(!A * !C_N * !D_N * !Y)	0.00210	0.00211	0.00210
	(!A * !C_N * !D_N * !Y)	-0.00253	-0.00257	-0.00256

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00424	0.00422	0.00419
	(A * C_N * D_N * !Y)	-0.00350	-0.00348	-0.00346
	(A * C_N * !D_N * !Y)	0.00452	0.00462	0.00462
	(A * C_N * !D_N * !Y)	-0.00365	-0.00365	-0.00362
	(A * !C_N * D_N * !Y)	0.00406	0.00406	0.00404
	(A * !C_N * D_N * !Y)	-0.00389	-0.00389	-0.00387
	(A * !C_N * !D_N * !Y)	0.00402	0.00404	0.00402
	(A * !C_N * !D_N * !Y)	-0.00398	-0.00400	-0.00398
	(!A * C_N * !D_N * !Y)	0.00461	0.00446	0.00431
	(!A * C_N * !D_N * !Y)	-0.00448	-0.00461	-0.00459
	(!A * !C_N * D_N * !Y)	0.00403	0.00405	0.00403
	(!A * !C_N * D_N * !Y)	-0.00496	-0.00504	-0.00503
	(!A * !C_N * !D_N * !Y)	0.00401	0.00404	0.00402
	(!A * !C_N * !D_N * !Y)	-0.00498	-0.00505	-0.00504

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)**	-0.00122	-0.00122	-0.00122
	(A * C_N * D_N * !Y)	0.00081	0.00081	0.00081
	(A * C_N * !D_N * !Y)	-0.00126	-0.00127	-0.00127
	(A * C_N * !D_N * !Y)	0.00085	0.00085	0.00085
	(A * !C_N * D_N * !Y)	-0.00110	-0.00110	-0.00110
	(A * !C_N * D_N * !Y)	0.00099	0.00099	0.00099
	(A * !C_N * !D_N * !Y)	-0.00110	-0.00110	-0.00110
	(A * !C_N * !D_N * !Y)	0.00102	0.00102	0.00102
	(!A * C_N * !D_N * !Y)	-0.00130	-0.00128	-0.00125
	(!A * C_N * !D_N * !Y)	0.00108	0.00108	0.00108
	(!A * !C_N * D_N * !Y)	-0.00109	-0.00110	-0.00110
	(!A * !C_N * D_N * !Y)	0.00128	0.00129	0.00128
	(!A * !C_N * !D_N * !Y)	-0.00109	-0.00110	-0.00110
	(!A * !C_N * !D_N * !Y)	0.00127	0.00129	0.00128
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00216	-0.00215	-0.00217
	(A * C_N * D_N * !Y)	0.00177	0.00176	0.00177
	(A * C_N * !D_N * !Y)	-0.00226	-0.00226	-0.00226
	(A * C_N * !D_N * !Y)	0.00186	0.00185	0.00185
	(A * !C_N * D_N * !Y)	-0.00210	-0.00209	-0.00209
	(A * !C_N * D_N * !Y)	0.00197	0.00196	0.00196
	(A * !C_N * !D_N * !Y)	-0.00209	-0.00209	-0.00209
	(A * !C_N * !D_N * !Y)	0.00200	0.00200	0.00200
	(!A * C_N * !D_N * !Y)	-0.00231	-0.00228	-0.00222
	(!A * C_N * !D_N * !Y)	0.00234	0.00235	0.00235
	(!A * !C_N * D_N * !Y)	-0.00209	-0.00211	-0.00209
	(!A * !C_N * D_N * !Y)	0.00255	0.00258	0.00256
	(!A * !C_N * !D_N * !Y)	-0.00208	-0.00210	-0.00209
	(!A * !C_N * !D_N * !Y)	0.00254	0.00258	0.00256

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00414	-0.00417	-0.00417
	(A * C_N * D_N * !Y)	0.00350	0.00353	0.00352
	(A * C_N * !D_N * !Y)	-0.00441	-0.00442	-0.00440
	(A * C_N * !D_N * !Y)	0.00365	0.00365	0.00362
	(A * !C_N * D_N * !Y)	-0.00403	-0.00404	-0.00402
	(A * !C_N * D_N * !Y)	0.00389	0.00389	0.00387
	(A * !C_N * !D_N * !Y)	-0.00401	-0.00403	-0.00401
	(A * !C_N * !D_N * !Y)	0.00398	0.00400	0.00398
	(!A * C_N * !D_N * !Y)	-0.00453	-0.00446	-0.00431
	(!A * C_N * !D_N * !Y)	0.00459	0.00461	0.00459
	(!A * !C_N * D_N * !Y)	-0.00402	-0.00403	-0.00402
	(!A * !C_N * D_N * !Y)	0.00503	0.00504	0.00503
	(!A * !C_N * !D_N * !Y)	-0.00401	-0.00402	-0.00401
	(!A * !C_N * !D_N * !Y)	0.00504	0.00505	0.00504

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00341	0.00324	0.00317
	(B * !Y)	0.00099	0.00081	0.00074
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00346	0.00329	0.00321
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00099	0.00080	0.00073
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00402	0.00384	0.00375
	(B * !Y)	0.00139	0.00120	0.00112
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00416	0.00397	0.00386
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00141	0.00122	0.00113
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00653	0.00626	0.00613
	(B * !Y)	0.00282	0.00253	0.00242
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00670	0.00642	0.00629
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00277	0.00248	0.00241

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00138	0.00124	0.00121
	(B * !Y)	0.00381	0.00367	0.00364
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00139	0.00124	0.00122
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00381	0.00367	0.00364
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00243	0.00227	0.00223
	(B * !Y)	0.00504	0.00489	0.00486
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00243	0.00227	0.00224
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00505	0.00490	0.00487
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00433	0.00410	0.00400
	(B * !Y)	0.00801	0.00779	0.00769
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00433	0.00411	0.00401
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00803	0.00781	0.00770

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)	0.00303	0.00285	0.00275
	(B * C_N * !Y)	0.00083	0.00064	0.00054
	(A * !B * C_N * !Y)	0.00311	0.00293	0.00280
	(A * !B * C_N * !Y)	0.00087	0.00068	0.00057
	(!C_N * !Y)	0.00322	0.00304	0.00296
	(!C_N * !Y)	0.00102	0.00084	0.00076
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00390	0.00372	0.00356
	(B * C_N * !Y)	0.00149	0.00130	0.00114
	(A * !B * C_N * !Y)	0.00411	0.00393	0.00369
	(A * !B * C_N * !Y)	0.00160	0.00141	0.00121
	(!C_N * !Y)	0.00407	0.00389	0.00378
	(!C_N * !Y)	0.00168	0.00150	0.00138
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00610	0.00581	0.00552
	(B * C_N * !Y)	0.00258	0.00228	0.00201
	(A * !B * C_N * !Y)	0.00645	0.00615	0.00575
	(A * !B * C_N * !Y)	0.00278	0.00248	0.00213
	(!C_N * !Y)	0.00642	0.00614	0.00594
	(!C_N * !Y)	0.00293	0.00265	0.00245

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)	0.00123	0.00110	0.00108
	(B * C_N * !Y)	0.00344	0.00330	0.00328
	(A * !B * C_N * !Y)	0.00123	0.00110	0.00108
	(A * !B * C_N * !Y)	0.00344	0.00330	0.00328
	(!C_N * !Y)	0.00099	0.00086	0.00084
	(!C_N * !Y)	0.00320	0.00306	0.00304
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00222	0.00208	0.00206
	(B * C_N * !Y)	0.00461	0.00448	0.00446
	(A * !B * C_N * !Y)	0.00222	0.00208	0.00206
	(A * !B * C_N * !Y)	0.00462	0.00448	0.00446
	(!C_N * !Y)	0.00193	0.00178	0.00176
	(!C_N * !Y)	0.00432	0.00418	0.00416
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00512	0.00492	0.00488
	(B * C_N * !Y)	0.00860	0.00841	0.00836
	(A * !B * C_N * !Y)	0.00512	0.00492	0.00488
	(A * !B * C_N * !Y)	0.00861	0.00841	0.00837
	(!C_N * !Y)	0.00457	0.00437	0.00433
	(!C_N * !Y)	0.00805	0.00786	0.00781

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	Y
0	0	x	0	0
0	0	0	1	1
0	x	1	1	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4b_1	11.18880
sky130_fd_sc_hs__nor4b_2	19.18080
sky130_fd_sc_hs__nor4b_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	Y
sky130_fd_sc_hs__nor4b_1	0.00257	0.00267	0.00266	0.00205	0.07291
sky130_fd_sc_hs__nor4b_2	0.00502	0.00511	0.00515	0.00243	0.13518
sky130_fd_sc_hs__nor4b_4	0.00985	0.00994	0.01012	0.00365	0.26016

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4b_1	0.00000	0.00014	0.00023
sky130_fd_sc_hs__nor4b_2	0.00000	0.00025	0.00046
sky130_fd_sc_hs__nor4b_4	0.00000	0.00043	0.00080

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)	0.73844	2.64397	13.42810
	B->Y (FR)	0.71215	2.60159	13.55040
	C->Y (FR)	0.62487	2.50149	13.65650
	D_N->Y (RR)	0.53290	2.12132	9.30708
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.72948	2.38273	13.42150
	B->Y (FR)	0.69276	2.32073	13.51390
	C->Y (FR)	0.60189	2.22023	13.64330
	D_N->Y (RR)	0.43928	1.78813	9.28624
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.70300	2.12721	13.37390
	B->Y (FR)	0.66637	2.06775	13.47390
	C->Y (FR)	0.57186	1.96406	13.61520
	D_N->Y (RR)	0.43839	1.60122	9.54059

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.03972	0.46715	3.13430
	B->Y (RF)	0.04107	0.46579	3.12146
	C->Y (RF)	0.04150	0.45745	3.10420
	D_N->Y (FF)	0.20841	0.88393	4.72986
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.03563	0.42278	3.02050
	B->Y (RF)	0.03673	0.42234	3.01733
	C->Y (RF)	0.03881	0.41865	3.02242
	D_N->Y (FF)	0.24124	0.93267	5.12449
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.03587	0.40255	3.04304
	B->Y (RF)	0.03624	0.39876	3.01994
	C->Y (RF)	0.03653	0.38430	2.96236
	D_N->Y (FF)	0.24816	0.91848	4.97800

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00121	0.00114	0.00112
	A	0.00497	0.00490	0.00488
	B	0.00121	0.00114	0.00111
	B	0.00455	0.00447	0.00445
	C	0.00108	0.00099	0.00097
	C	0.00412	0.00404	0.00402
	D_N	0.00542	0.00520	0.00512
	D_N	0.00377	0.00354	0.00347
sky130_fd_sc_hs__nor4b_2	A	0.00227	0.00213	0.00210
	A	0.01036	0.01021	0.01019
	B	0.00229	0.00213	0.00210
	B	0.00944	0.00929	0.00926
	C	0.00220	0.00204	0.00201
	C	0.00849	0.00832	0.00830
	D_N	0.00828	0.00806	0.00796
	D_N	0.00722	0.00698	0.00689
sky130_fd_sc_hs__nor4b_4	A	0.00447	0.00418	0.00413
	A	0.02036	0.02008	0.02006
	B	0.00446	0.00414	0.00411
	B	0.01853	0.01823	0.01820
	C	0.00425	0.00397	0.00393
	C	0.01669	0.01636	0.01633
	D_N	0.01463	0.01422	0.01417
	D_N	0.01383	0.01342	0.01338

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00498	0.00488	0.00472
	A	0.00135	0.00124	0.00111
	B	0.00427	0.00418	0.00405
	B	0.00099	0.00089	0.00077
	C	0.00353	0.00349	0.00339
	C	0.00050	0.00044	0.00035
	D_N	0.00315	0.00307	0.00305
	D_N	0.00478	0.00471	0.00468
sky130_fd_sc_hs__nor4b_2	A	0.01010	0.00985	0.00945
	A	0.00233	0.00204	0.00174
	B	0.00830	0.00812	0.00782
	B	0.00130	0.00108	0.00083
	C	0.00665	0.00653	0.00632
	C	0.00042	0.00025	0.00007
	D_N	0.00555	0.00552	0.00554
	D_N	0.00661	0.00659	0.00661
sky130_fd_sc_hs__nor4b_4	A	0.01968	0.01919	0.01843
	A	0.00437	0.00380	0.00324
	B	0.01622	0.01585	0.01528
	B	0.00244	0.00197	0.00151
	C	0.01291	0.01263	0.01225
	C	0.00060	0.00023	-0.00006
	D_N	0.01110	0.01111	0.01123
	D_N	0.01188	0.01190	0.01202

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)**	0.00102	0.00102	0.00101
	(B * C * D_N * !Y)	-0.00115	-0.00118	-0.00117
	(B * !D_N * !Y)	0.00097	0.00098	0.00097
	(B * !D_N * !Y)	-0.00119	-0.00121	-0.00121
	(B * !C * D_N * !Y)	0.00102	0.00102	0.00101
	(B * !C * D_N * !Y)	-0.00115	-0.00118	-0.00117
	(!B * C * D_N * !Y)	0.00102	0.00102	0.00101
	(!B * C * D_N * !Y)	-0.00108	-0.00111	-0.00111
	(!B * C * !D_N * !Y)	0.00097	0.00097	0.00097
	(!B * C * !D_N * !Y)	-0.00112	-0.00115	-0.00115
	(!B * !C * !D_N * !Y)	0.00097	0.00098	0.00097
	(!B * !C * !D_N * !Y)	-0.00112	-0.00114	-0.00114
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00205	0.00206	0.00205
	(B * C * D_N * !Y)	-0.00239	-0.00246	-0.00244
	(B * !D_N * !Y)	0.00205	0.00206	0.00205
	(B * !D_N * !Y)	-0.00239	-0.00246	-0.00244
	(B * !C * D_N * !Y)	0.00205	0.00206	0.00205
	(B * !C * D_N * !Y)	-0.00239	-0.00246	-0.00244
	(!B * C * D_N * !Y)	0.00205	0.00205	0.00205
	(!B * C * D_N * !Y)	-0.00225	-0.00231	-0.00231
	(!B * C * !D_N * !Y)	0.00205	0.00205	0.00205
	(!B * C * !D_N * !Y)	-0.00225	-0.00231	-0.00232
	(!B * !C * !D_N * !Y)	0.00205	0.00207	0.00205
	(!B * !C * !D_N * !Y)	-0.00223	-0.00229	-0.00229

sky130_fd_sc_hs__nor4b_4	(B * C * D_N * !Y)	0.00401	0.00403	0.00399
	(B * C * D_N * !Y)	-0.00471	-0.00485	-0.00480
	(B * !D_N * !Y)	0.00401	0.00403	0.00399
	(B * !D_N * !Y)	-0.00471	-0.00485	-0.00480
	(B * !C * D_N * !Y)	0.00401	0.00403	0.00399
	(B * !C * D_N * !Y)	-0.00471	-0.00485	-0.00480
	(!B * C * D_N * !Y)	0.00401	0.00400	0.00399
	(!B * C * D_N * !Y)	-0.00443	-0.00455	-0.00456
	(!B * C * !D_N * !Y)	0.00400	0.00400	0.00399
	(!B * C * !D_N * !Y)	-0.00443	-0.00455	-0.00456
	(!B * !C * !D_N * !Y)	0.00401	0.00404	0.00400
	(!B * !C * !D_N * !Y)	-0.00440	-0.00451	-0.00451

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)	-0.00101	-0.00102	-0.00101
	(B * C * D_N * !Y)	0.00117	0.00118	0.00117
	(B * !D_N * !Y)	-0.00097	-0.00097	-0.00097
	(B * !D_N * !Y)	0.00121	0.00121	0.00121
	(B * !C * D_N * !Y)	-0.00101	-0.00102	-0.00101
	(B * !C * D_N * !Y)	0.00117	0.00118	0.00117
	(!B * C * D_N * !Y)	-0.00101	-0.00101	-0.00101
	(!B * C * D_N * !Y)	0.00110	0.00111	0.00111
	(!B * C * !D_N * !Y)	-0.00097	-0.00097	-0.00097
	(!B * C * !D_N * !Y)	0.00116	0.00115	0.00115
	(!B * !C * !D_N * !Y)	-0.00097	-0.00097	-0.00097
	(!B * !C * !D_N * !Y)	0.00114	0.00114	0.00114

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00205	-0.00205	-0.00204
	(B * C * D_N * !Y)	0.00246	0.00246	0.00244
	(B * !D_N * !Y)	-0.00205	-0.00205	-0.00204
	(B * !D_N * !Y)	0.00246	0.00246	0.00244
	(B * !C * D_N * !Y)	-0.00204	-0.00205	-0.00204
	(B * !C * D_N * !Y)	0.00243	0.00246	0.00244
	(!B * C * D_N * !Y)	-0.00203	-0.00204	-0.00204
	(!B * C * D_N * !Y)	0.00230	0.00231	0.00231
	(!B * C * !D_N * !Y)	-0.00205	-0.00204	-0.00204
	(!B * C * !D_N * !Y)	0.00232	0.00231	0.00232
	(!B * !C * !D_N * !Y)	-0.00204	-0.00205	-0.00205
	(!B * !C * !D_N * !Y)	0.00227	0.00229	0.00229
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00400	-0.00401	-0.00398
	(B * C * D_N * !Y)	0.00484	0.00485	0.00480
	(B * !D_N * !Y)	-0.00400	-0.00401	-0.00398
	(B * !D_N * !Y)	0.00484	0.00485	0.00480
	(B * !C * D_N * !Y)	-0.00397	-0.00401	-0.00398
	(B * !C * D_N * !Y)	0.00478	0.00485	0.00480
	(!B * C * D_N * !Y)	-0.00398	-0.00398	-0.00398
	(!B * C * D_N * !Y)	0.00455	0.00455	0.00456
	(!B * C * !D_N * !Y)	-0.00397	-0.00398	-0.00398
	(!B * C * !D_N * !Y)	0.00454	0.00455	0.00456
	(!B * !C * !D_N * !Y)	-0.00399	-0.00399	-0.00399
	(!B * !C * !D_N * !Y)	0.00450	0.00451	0.00451

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)**	0.00105	0.00105	0.00105
	(A * C * D_N * !Y)	-0.00087	-0.00086	-0.00086
	(A * C * !D_N * !Y)	0.00101	0.00100	0.00100
	(A * C * !D_N * !Y)	-0.00093	-0.00093	-0.00093
	(A * !C * D_N * !Y)	0.00104	0.00104	0.00104
	(A * !C * D_N * !Y)	-0.00080	-0.00080	-0.00080
	(A * !C * !D_N * !Y)	0.00101	0.00100	0.00100
	(A * !C * !D_N * !Y)	-0.00089	-0.00089	-0.00089
	(!A * C * D_N * !Y)	0.00104	0.00105	0.00104
	(!A * C * D_N * !Y)	-0.00113	-0.00116	-0.00115
	(!A * C * !D_N * !Y)	0.00100	0.00101	0.00100
	(!A * C * !D_N * !Y)	-0.00117	-0.00120	-0.00119
	(!A * !C * !D_N * !Y)	0.00100	0.00100	0.00100
	(!A * !C * !D_N * !Y)	-0.00110	-0.00113	-0.00113
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00211	0.00209	0.00209
	(A * C * D_N * !Y)	-0.00186	-0.00186	-0.00186
	(A * C * !D_N * !Y)	0.00211	0.00209	0.00209
	(A * C * !D_N * !Y)	-0.00190	-0.00190	-0.00190
	(A * !C * D_N * !Y)	0.00209	0.00209	0.00209
	(A * !C * D_N * !Y)	-0.00173	-0.00172	-0.00172
	(A * !C * !D_N * !Y)	0.00209	0.00211	0.00210
	(A * !C * !D_N * !Y)	-0.00184	-0.00182	-0.00182
	(!A * C * D_N * !Y)	0.00209	0.00210	0.00209
	(!A * C * D_N * !Y)	-0.00240	-0.00247	-0.00245
	(!A * C * !D_N * !Y)	0.00209	0.00210	0.00208
	(!A * C * !D_N * !Y)	-0.00240	-0.00247	-0.00245
	(!A * !C * !D_N * !Y)	0.00210	0.00210	0.00209
	(!A * !C * !D_N * !Y)	-0.00227	-0.00231	-0.00232

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00406	0.00407	0.00407
	(A * C * D_N * !Y)	-0.00368	-0.00365	-0.00364
	(A * C * !D_N * !Y)	0.00411	0.00407	0.00407
	(A * C * !D_N * !Y)	-0.00372	-0.00373	-0.00373
	(A * !C * D_N * !Y)	0.00408	0.00407	0.00407
	(A * !C * D_N * !Y)	-0.00340	-0.00339	-0.00339
	(A * !C * !D_N * !Y)	0.00407	0.00410	0.00409
	(A * !C * !D_N * !Y)	-0.00362	-0.00358	-0.00358
	(!A * C * D_N * !Y)	0.00408	0.00409	0.00407
	(!A * C * D_N * !Y)	-0.00476	-0.00489	-0.00485
	(!A * C * !D_N * !Y)	0.00407	0.00409	0.00407
	(!A * C * !D_N * !Y)	-0.00476	-0.00489	-0.00485
	(!A * !C * !D_N * !Y)	0.00407	0.00410	0.00407
	(!A * !C * !D_N * !Y)	-0.00448	-0.00456	-0.00457

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)**	-0.00104	-0.00104	-0.00104
	(A * C * D_N * !Y)	0.00087	0.00086	0.00086
	(A * C * !D_N * !Y)	-0.00100	-0.00100	-0.00100
	(A * C * !D_N * !Y)	0.00093	0.00093	0.00093
	(A * !C * D_N * !Y)	-0.00104	-0.00104	-0.00104
	(A * !C * D_N * !Y)	0.00081	0.00081	0.00081
	(A * !C * !D_N * !Y)	-0.00099	-0.00100	-0.00100
	(A * !C * !D_N * !Y)	0.00089	0.00089	0.00089
	(!A * C * D_N * !Y)	-0.00104	-0.00104	-0.00104
	(!A * C * D_N * !Y)	0.00115	0.00116	0.00115
	(!A * C * !D_N * !Y)	-0.00100	-0.00100	-0.00100
	(!A * C * !D_N * !Y)	0.00120	0.00120	0.00119
	(!A * !C * !D_N * !Y)	-0.00099	-0.00100	-0.00100
	(!A * !C * !D_N * !Y)	0.00112	0.00113	0.00113
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00208	-0.00208	-0.00208
	(A * C * D_N * !Y)	0.00186	0.00186	0.00186
	(A * C * !D_N * !Y)	-0.00208	-0.00208	-0.00208
	(A * C * !D_N * !Y)	0.00190	0.00190	0.00190
	(A * !C * D_N * !Y)	-0.00209	-0.00208	-0.00208
	(A * !C * D_N * !Y)	0.00175	0.00174	0.00174
	(A * !C * !D_N * !Y)	-0.00209	-0.00209	-0.00209
	(A * !C * !D_N * !Y)	0.00184	0.00182	0.00182
	(!A * C * D_N * !Y)	-0.00208	-0.00209	-0.00208
	(!A * C * D_N * !Y)	0.00244	0.00247	0.00245
	(!A * C * !D_N * !Y)	-0.00207	-0.00209	-0.00208
	(!A * C * !D_N * !Y)	0.00243	0.00247	0.00245
	(!A * !C * !D_N * !Y)	-0.00209	-0.00209	-0.00209
	(!A * !C * !D_N * !Y)	0.00231	0.00231	0.00232

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00406	-0.00406	-0.00406
	(A * C * D_N * !Y)	0.00368	0.00365	0.00364
	(A * C * !D_N * !Y)	-0.00405	-0.00406	-0.00406
	(A * C * !D_N * !Y)	0.00372	0.00373	0.00373
	(A * !C * D_N * !Y)	-0.00405	-0.00406	-0.00405
	(A * !C * D_N * !Y)	0.00341	0.00342	0.00343
	(A * !C * !D_N * !Y)	-0.00407	-0.00407	-0.00407
	(A * !C * !D_N * !Y)	0.00362	0.00358	0.00358
	(!A * C * D_N * !Y)	-0.00405	-0.00408	-0.00406
	(!A * C * D_N * !Y)	0.00483	0.00489	0.00485
	(!A * C * !D_N * !Y)	-0.00405	-0.00408	-0.00406
	(!A * C * !D_N * !Y)	0.00484	0.00489	0.00485
	(!A * !C * !D_N * !Y)	-0.00407	-0.00407	-0.00407
	(!A * !C * !D_N * !Y)	0.00456	0.00456	0.00457

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)	0.00119	0.00119	0.00119
	(B * D_N * !Y)	-0.00080	-0.00080	-0.00080
	(B * !D_N * !Y)	0.00100	0.00101	0.00100
	(B * !D_N * !Y)	-0.00103	-0.00103	-0.00103
	(A * !B * D_N * !Y)	0.00119	0.00119	0.00119
	(A * !B * D_N * !Y)	-0.00080	-0.00079	-0.00080
	(A * !B * !D_N * !Y)	0.00101	0.00101	0.00100
	(A * !B * !D_N * !Y)	-0.00106	-0.00106	-0.00106
	(!A * !B * !D_N * !Y)	0.00100	0.00101	0.00100
	(!A * !B * !D_N * !Y)	-0.00133	-0.00134	-0.00134

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00225	0.00225	0.00225
	(B * D_N * !Y)	-0.00163	-0.00163	-0.00163
	(B * !D_N * !Y)	0.00214	0.00214	0.00214
	(B * !D_N * !Y)	-0.00185	-0.00185	-0.00184
	(A * !B * D_N * !Y)	0.00226	0.00225	0.00225
	(A * !B * D_N * !Y)	-0.00163	-0.00162	-0.00163
	(A * !B * !D_N * !Y)	0.00214	0.00214	0.00213
	(A * !B * !D_N * !Y)	-0.00190	-0.00191	-0.00190
	(!A * !B * !D_N * !Y)	0.00214	0.00213	0.00212
	(!A * !B * !D_N * !Y)	-0.00243	-0.00248	-0.00246
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00439	0.00443	0.00442
	(B * D_N * !Y)	-0.00322	-0.00325	-0.00325
	(B * !D_N * !Y)	0.00430	0.00434	0.00432
	(B * !D_N * !Y)	-0.00354	-0.00354	-0.00353
	(A * !B * D_N * !Y)	0.00442	0.00444	0.00442
	(A * !B * D_N * !Y)	-0.00322	-0.00323	-0.00324
	(A * !B * !D_N * !Y)	0.00433	0.00434	0.00431
	(A * !B * !D_N * !Y)	-0.00364	-0.00366	-0.00364
	(!A * !B * !D_N * !Y)	0.00436	0.00431	0.00429
	(!A * !B * !D_N * !Y)	-0.00474	-0.00476	-0.00477

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)**	-0.00118	-0.00118	-0.00118
	(B * D_N * !Y)	0.00081	0.00081	0.00081
	(B * !D_N * !Y)	-0.00100	-0.00100	-0.00100
	(B * !D_N * !Y)	0.00103	0.00103	0.00103
	(A * !B * D_N * !Y)	-0.00114	-0.00114	-0.00117
	(A * !B * D_N * !Y)	0.00082	0.00081	0.00081
	(A * !B * !D_N * !Y)	-0.00100	-0.00100	-0.00100
	(A * !B * !D_N * !Y)	0.00106	0.00106	0.00106
	(!A * !B * !D_N * !Y)	-0.00100	-0.00100	-0.00100
	(!A * !B * !D_N * !Y)	0.00133	0.00134	0.00134
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00223	-0.00224	-0.00224
	(B * D_N * !Y)	0.00166	0.00166	0.00166
	(B * !D_N * !Y)	-0.00213	-0.00213	-0.00212
	(B * !D_N * !Y)	0.00185	0.00185	0.00184
	(A * !B * D_N * !Y)	-0.00211	-0.00213	-0.00221
	(A * !B * D_N * !Y)	0.00168	0.00168	0.00166
	(A * !B * !D_N * !Y)	-0.00213	-0.00214	-0.00213
	(A * !B * !D_N * !Y)	0.00190	0.00191	0.00190
	(!A * !B * !D_N * !Y)	-0.00213	-0.00213	-0.00212
	(!A * !B * !D_N * !Y)	0.00246	0.00248	0.00246
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00438	-0.00438	-0.00440
	(B * D_N * !Y)	0.00331	0.00331	0.00331
	(B * !D_N * !Y)	-0.00430	-0.00430	-0.00429
	(B * !D_N * !Y)	0.00354	0.00354	0.00353
	(A * !B * D_N * !Y)	-0.00416	-0.00419	-0.00434
	(A * !B * D_N * !Y)	0.00333	0.00332	0.00330
	(A * !B * !D_N * !Y)	-0.00430	-0.00431	-0.00430
	(A * !B * !D_N * !Y)	0.00364	0.00366	0.00364
	(!A * !B * !D_N * !Y)	-0.00431	-0.00430	-0.00429
	(!A * !B * !D_N * !Y)	0.00477	0.00476	0.00477

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00306	0.00289	0.00281
	(C * !Y)	0.00075	0.00057	0.00050
	(B * !C * !Y)	0.00314	0.00297	0.00287
	(B * !C * !Y)	0.00078	0.00061	0.00052
	(A * !B * !C * !Y)	0.00322	0.00305	0.00292
	(A * !B * !C * !Y)	0.00082	0.00065	0.00054
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00403	0.00384	0.00371
	(C * !Y)	0.00137	0.00117	0.00105
	(B * !C * !Y)	0.00420	0.00401	0.00382
	(B * !C * !Y)	0.00146	0.00126	0.00110
	(A * !B * !C * !Y)	0.00440	0.00419	0.00395
	(A * !B * !C * !Y)	0.00158	0.00136	0.00117
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00628	0.00598	0.00576
	(C * !Y)	0.00236	0.00206	0.00184
	(B * !C * !Y)	0.00662	0.00630	0.00599
	(B * !C * !Y)	0.00254	0.00221	0.00196
	(A * !B * !C * !Y)	0.00701	0.00667	0.00623
	(A * !B * !C * !Y)	0.00277	0.00243	0.00207

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00104	0.00092	0.00090
	(C * !Y)	0.00336	0.00323	0.00322
	(B * !C * !Y)	0.00104	0.00092	0.00090
	(B * !C * !Y)	0.00336	0.00324	0.00322
	(A * !B * !C * !Y)	0.00104	0.00092	0.00090
	(A * !B * !C * !Y)	0.00336	0.00324	0.00322
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00204	0.00188	0.00186
	(C * !Y)	0.00469	0.00454	0.00451
	(B * !C * !Y)	0.00204	0.00188	0.00186
	(B * !C * !Y)	0.00470	0.00454	0.00451
	(A * !B * !C * !Y)	0.00204	0.00188	0.00186
	(A * !B * !C * !Y)	0.00470	0.00454	0.00451
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00421	0.00397	0.00394
	(C * !Y)	0.00811	0.00785	0.00783
	(B * !C * !Y)	0.00421	0.00397	0.00394
	(B * !C * !Y)	0.00811	0.00786	0.00784
	(A * !B * !C * !Y)	0.00421	0.00397	0.00394
	(A * !B * !C * !Y)	0.00812	0.00786	0.00784

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D	Y
0	0	0	0	1
0	0	x	1	0
0	x	1	x	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4_1	9.59040
sky130_fd_sc_hs__nor4_2	14.38560
sky130_fd_sc_hs__nor4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nor4_1	0.00251	0.00267	0.00266	0.00273	0.07314
sky130_fd_sc_hs__nor4_2	0.00385	0.00444	0.00443	0.00418	0.14294
sky130_fd_sc_hs__nor4_4	0.00759	0.00798	0.00776	0.00804	0.26607

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4_1	0.00000	0.00009	0.00017
sky130_fd_sc_hs__nor4_2	0.00000	0.00017	0.00021
sky130_fd_sc_hs__nor4_4	0.00000	0.00033	0.00042

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)	0.72384	2.62834	13.40990
	B->Y (FR)	0.70224	2.59064	13.53720
	C->Y (FR)	0.61520	2.48951	13.63350
	D->Y (FR)	0.46387	2.27922	12.93370
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.56699	2.23000	13.48940
	B->Y (FR)	0.53709	2.18103	13.59230
	C->Y (FR)	0.43384	2.05957	13.67320
	D->Y (FR)	0.25184	1.82331	12.95640
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.61931	2.05043	13.36370
	B->Y (FR)	0.58797	1.99692	13.47450
	C->Y (FR)	0.49149	1.88785	13.60350
	D->Y (FR)	0.30421	1.64372	12.90050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.03861	0.46016	3.09973
	B->Y (RF)	0.04080	0.46522	3.12417
	C->Y (RF)	0.04156	0.45805	3.11136
	D->Y (RF)	0.03923	0.44520	3.08200
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.04437	0.54460	3.96900
	B->Y (RF)	0.04794	0.54908	4.00535
	C->Y (RF)	0.04988	0.53516	3.97828
	D->Y (RF)	0.04375	0.50701	3.89089
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.04622	0.50852	3.87456
	B->Y (RF)	0.04829	0.50572	3.87227
	C->Y (RF)	0.05050	0.49756	3.88560
	D->Y (RF)	0.04459	0.47383	3.84990

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00033	0.00026	0.00024
	A	0.00496	0.00489	0.00488
	B	0.00042	0.00034	0.00032
	B	0.00459	0.00451	0.00449
	C	0.00042	0.00033	0.00031
	C	0.00412	0.00404	0.00402
	D	0.00036	0.00027	0.00023
	D	0.00371	0.00360	0.00347
sky130_fd_sc_hs__nor4_2	A	0.00038	0.00032	0.00030
	A	0.00794	0.00787	0.00786
	B	0.00015	0.00006	0.00005
	B	0.00724	0.00716	0.00716
	C	0.00033	0.00023	0.00021
	C	0.00632	0.00621	0.00619
	D	0.00015	0.00005	0.00004
	D	0.00517	0.00508	0.00506
sky130_fd_sc_hs__nor4_4	A	0.00288	0.00272	0.00270
	A	0.01833	0.01817	0.01816
	B	0.00294	0.00276	0.00273
	B	0.01670	0.01648	0.01648
	C	0.00299	0.00279	0.00278
	C	0.01474	0.01452	0.01449
	D	0.00285	0.00257	0.00254
	D	0.01273	0.01245	0.01243

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00574	0.00564	0.00546
	A	0.00126	0.00114	0.00102
	B	0.00498	0.00488	0.00473
	B	0.00090	0.00079	0.00067
	C	0.00409	0.00404	0.00393
	C	0.00043	0.00036	0.00027
	D	0.00318	0.00317	0.00310
	D	-0.00015	-0.00018	-0.00025
sky130_fd_sc_hs__nor4_2	A	0.00943	0.00919	0.00888
	A	0.00223	0.00198	0.00175
	B	0.00821	0.00804	0.00776
	B	0.00135	0.00114	0.00093
	C	0.00615	0.00602	0.00586
	C	0.00024	0.00010	-0.00004
	D	0.00410	0.00406	0.00403
	D	-0.00090	-0.00094	-0.00099
sky130_fd_sc_hs__nor4_4	A	0.01912	0.01862	0.01795
	A	0.00439	0.00385	0.00340
	B	0.01572	0.01533	0.01481
	B	0.00240	0.00195	0.00155
	C	0.01215	0.01185	0.01154
	C	0.00059	0.00027	0.00002
	D	0.00805	0.00791	0.00786
	D	-0.00179	-0.00198	-0.00202

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00105	0.00106	0.00105
	(B * D * !Y)	-0.00118	-0.00120	-0.00120
	(B * C * !D * !Y)	0.00105	0.00106	0.00105
	(B * C * !D * !Y)	-0.00118	-0.00121	-0.00120
	(B * !C * !D * !Y)	0.00105	0.00106	0.00105
	(B * !C * !D * !Y)	-0.00118	-0.00121	-0.00120
	(!B * C * D * !Y)	0.00105	0.00105	0.00105
	(!B * C * D * !Y)	-0.00111	-0.00114	-0.00114
	(!B * C * !D * !Y)	0.00105	0.00105	0.00105
	(!B * C * !D * !Y)	-0.00111	-0.00114	-0.00114
	(!B * !C * D * !Y)	0.00105	0.00106	0.00105
	(!B * !C * D * !Y)	-0.00110	-0.00113	-0.00113
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00104	0.00105	0.00104
	(B * D * !Y)	-0.00228	-0.00235	-0.00233
	(B * C * !D * !Y)	0.00104	0.00105	0.00104
	(B * C * !D * !Y)	-0.00228	-0.00235	-0.00233
	(B * !C * !D * !Y)	0.00104	0.00105	0.00104
	(B * !C * !D * !Y)	-0.00228	-0.00235	-0.00233
	(!B * C * D * !Y)	0.00105	0.00105	0.00104
	(!B * C * D * !Y)	-0.00212	-0.00219	-0.00220
	(!B * C * !D * !Y)	0.00105	0.00105	0.00104
	(!B * C * !D * !Y)	-0.00212	-0.00219	-0.00220
	(!B * !C * D * !Y)	0.00104	0.00106	0.00104
	(!B * !C * D * !Y)	-0.00209	-0.00216	-0.00217

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00218	0.00220	0.00218
	(B * D * !Y)	-0.00465	-0.00480	-0.00476
	(B * C * !D * !Y)	0.00218	0.00220	0.00218
	(B * C * !D * !Y)	-0.00464	-0.00480	-0.00476
	(B * !C * !D * !Y)	0.00218	0.00220	0.00218
	(B * !C * !D * !Y)	-0.00464	-0.00480	-0.00476
	(!B * C * D * !Y)	0.00219	0.00219	0.00218
	(!B * C * D * !Y)	-0.00439	-0.00452	-0.00452
	(!B * C * !D * !Y)	0.00220	0.00219	0.00218
	(!B * C * !D * !Y)	-0.00440	-0.00452	-0.00452
	(!B * !C * D * !Y)	0.00219	0.00221	0.00218
	(!B * !C * D * !Y)	-0.00433	-0.00446	-0.00445

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00105	-0.00104	-0.00104
	(B * D * !Y)	0.00120	0.00120	0.00120
	(B * C * !D * !Y)	-0.00105	-0.00105	-0.00104
	(B * C * !D * !Y)	0.00120	0.00121	0.00120
	(B * !C * !D * !Y)	-0.00104	-0.00105	-0.00104
	(B * !C * !D * !Y)	0.00120	0.00121	0.00120
	(!B * C * D * !Y)	-0.00105	-0.00104	-0.00104
	(!B * C * D * !Y)	0.00114	0.00114	0.00114
	(!B * C * !D * !Y)	-0.00105	-0.00104	-0.00104
	(!B * C * !D * !Y)	0.00115	0.00114	0.00114
	(!B * !C * D * !Y)	-0.00105	-0.00104	-0.00104
	(!B * !C * D * !Y)	0.00113	0.00113	0.00113

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00104	-0.00105	-0.00104
	(B * D * !Y)	0.00234	0.00235	0.00233
	(B * C * !D * !Y)	-0.00104	-0.00105	-0.00104
	(B * C * !D * !Y)	0.00234	0.00235	0.00233
	(B * !C * !D * !Y)	-0.00104	-0.00105	-0.00104
	(B * !C * !D * !Y)	0.00232	0.00235	0.00233
	(!B * C * D * !Y)	-0.00105	-0.00104	-0.00104
	(!B * C * D * !Y)	0.00221	0.00219	0.00220
	(!B * C * !D * !Y)	-0.00104	-0.00104	-0.00104
	(!B * C * !D * !Y)	0.00218	0.00219	0.00220
	(!B * !C * D * !Y)	-0.00104	-0.00104	-0.00104
	(!B * !C * D * !Y)	0.00215	0.00216	0.00217
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00218	-0.00219	-0.00217
	(B * D * !Y)	0.00479	0.00480	0.00476
	(B * C * !D * !Y)	-0.00216	-0.00219	-0.00217
	(B * C * !D * !Y)	0.00473	0.00480	0.00476
	(B * !C * !D * !Y)	-0.00217	-0.00219	-0.00217
	(B * !C * !D * !Y)	0.00475	0.00480	0.00476
	(!B * C * D * !Y)	-0.00216	-0.00217	-0.00217
	(!B * C * D * !Y)	0.00448	0.00452	0.00452
	(!B * C * !D * !Y)	-0.00217	-0.00217	-0.00217
	(!B * C * !D * !Y)	0.00450	0.00452	0.00452
	(!B * !C * D * !Y)	-0.00217	-0.00218	-0.00218
	(!B * !C * D * !Y)	0.00443	0.00446	0.00445

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)**	0.00101	0.00100	0.00100
	(A * C * D * !Y)	-0.00093	-0.00093	-0.00093
	(A * C * !D * !Y)	0.00101	0.00100	0.00100
	(A * C * !D * !Y)	-0.00091	-0.00091	-0.00091
	(A * !C * D * !Y)	0.00101	0.00101	0.00100
	(A * !C * D * !Y)	-0.00089	-0.00089	-0.00089
	(A * !C * !D * !Y)	0.00100	0.00100	0.00100
	(A * !C * !D * !Y)	-0.00085	-0.00085	-0.00085
	(!A * C * D * !Y)	0.00101	0.00101	0.00100
	(!A * C * D * !Y)	-0.00118	-0.00121	-0.00120
	(!A * C * !D * !Y)	0.00100	0.00101	0.00100
	(!A * C * !D * !Y)	-0.00118	-0.00121	-0.00120
	(!A * !C * D * !Y)	0.00100	0.00101	0.00100
	(!A * !C * D * !Y)	-0.00110	-0.00112	-0.00113
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00135	0.00134	0.00134
	(A * C * D * !Y)	-0.00189	-0.00190	-0.00189
	(A * C * !D * !Y)	0.00134	0.00133	0.00133
	(A * C * !D * !Y)	-0.00187	-0.00185	-0.00185
	(A * !C * D * !Y)	0.00132	0.00133	0.00132
	(A * !C * D * !Y)	-0.00182	-0.00181	-0.00180
	(A * !C * !D * !Y)	0.00132	0.00132	0.00132
	(A * !C * !D * !Y)	-0.00173	-0.00173	-0.00172
	(!A * C * D * !Y)	0.00134	0.00133	0.00132
	(!A * C * D * !Y)	-0.00237	-0.00244	-0.00242
	(!A * C * !D * !Y)	0.00133	0.00133	0.00132
	(!A * C * !D * !Y)	-0.00236	-0.00244	-0.00242
	(!A * !C * D * !Y)	0.00132	0.00133	0.00132
	(!A * !C * D * !Y)	-0.00222	-0.00228	-0.00228

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00226	0.00226	0.00226
	(A * C * D * !Y)	-0.00377	-0.00377	-0.00377
	(A * C * !D * !Y)	0.00228	0.00226	0.00226
	(A * C * !D * !Y)	-0.00371	-0.00369	-0.00369
	(A * !C * D * !Y)	0.00229	0.00228	0.00227
	(A * !C * D * !Y)	-0.00363	-0.00360	-0.00360
	(A * !C * !D * !Y)	0.00225	0.00226	0.00225
	(A * !C * !D * !Y)	-0.00344	-0.00344	-0.00344
	(!A * C * D * !Y)	0.00225	0.00227	0.00226
	(!A * C * D * !Y)	-0.00481	-0.00495	-0.00491
	(!A * C * !D * !Y)	0.00225	0.00227	0.00226
	(!A * C * !D * !Y)	-0.00481	-0.00495	-0.00491
	(!A * !C * D * !Y)	0.00226	0.00228	0.00226
	(!A * !C * D * !Y)	-0.00450	-0.00459	-0.00460

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)**	-0.00100	-0.00100	-0.00100
	(A * C * D * !Y)	0.00093	0.00093	0.00093
	(A * C * !D * !Y)	-0.00100	-0.00100	-0.00100
	(A * C * !D * !Y)	0.00091	0.00091	0.00091
	(A * !C * D * !Y)	-0.00100	-0.00100	-0.00100
	(A * !C * D * !Y)	0.00089	0.00089	0.00089
	(A * !C * !D * !Y)	-0.00100	-0.00100	-0.00100
	(A * !C * !D * !Y)	0.00086	0.00086	0.00086
	(!A * C * D * !Y)	-0.00100	-0.00101	-0.00100
	(!A * C * D * !Y)	0.00120	0.00121	0.00120
	(!A * C * !D * !Y)	-0.00100	-0.00101	-0.00100
	(!A * C * !D * !Y)	0.00120	0.00121	0.00120
	(!A * !C * D * !Y)	-0.00100	-0.00100	-0.00100
	(!A * !C * D * !Y)	0.00112	0.00112	0.00113
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00132	-0.00133	-0.00133
	(A * C * D * !Y)	0.00189	0.00190	0.00189
	(A * C * !D * !Y)	-0.00133	-0.00133	-0.00132
	(A * C * !D * !Y)	0.00187	0.00185	0.00185
	(A * !C * D * !Y)	-0.00132	-0.00132	-0.00132
	(A * !C * D * !Y)	0.00182	0.00181	0.00180
	(A * !C * !D * !Y)	-0.00132	-0.00132	-0.00132
	(A * !C * !D * !Y)	0.00176	0.00175	0.00175
	(!A * C * D * !Y)	-0.00132	-0.00133	-0.00132
	(!A * C * D * !Y)	0.00242	0.00244	0.00242
	(!A * C * !D * !Y)	-0.00132	-0.00133	-0.00132
	(!A * C * !D * !Y)	0.00242	0.00244	0.00242
	(!A * !C * D * !Y)	-0.00132	-0.00132	-0.00132
	(!A * !C * D * !Y)	0.00227	0.00228	0.00228

sky130_fd_sc_hs__nor4_4	(A * C * D * !Y)	-0.00225	-0.00225	-0.00225
	(A * C * D * !Y)	0.00377	0.00377	0.00377
	(A * C * !D * !Y)	-0.00226	-0.00225	-0.00225
	(A * C * !D * !Y)	0.00371	0.00369	0.00369
	(A * !C * D * !Y)	-0.00226	-0.00226	-0.00226
	(A * !C * D * !Y)	0.00363	0.00360	0.00360
	(A * !C * !D * !Y)	-0.00225	-0.00225	-0.00225
	(A * !C * !D * !Y)	0.00349	0.00347	0.00349
	(!A * C * D * !Y)	-0.00225	-0.00226	-0.00225
	(!A * C * D * !Y)	0.00493	0.00495	0.00491
	(!A * C * !D * !Y)	-0.00225	-0.00226	-0.00225
	(!A * C * !D * !Y)	0.00493	0.00495	0.00491
	(!A * !C * D * !Y)	-0.00226	-0.00226	-0.00226
	(!A * !C * D * !Y)	0.00458	0.00459	0.00460

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(B * D * !Y)	0.00102	0.00102	0.00102
	(B * D * !Y)	-0.00086	-0.00085	-0.00085
	(B * !D * !Y)	0.00104	0.00102	0.00102
	(B * !D * !Y)	-0.00082	-0.00081	-0.00081
	(A * !B * D * !Y)	0.00103	0.00102	0.00102
	(A * !B * D * !Y)	-0.00088	-0.00088	-0.00088
	(A * !B * !D * !Y)	0.00103	0.00102	0.00102
	(A * !B * !D * !Y)	-0.00080	-0.00080	-0.00081
	(!A * !B * D * !Y)	0.00102	0.00103	0.00102
	(!A * !B * D * !Y)	-0.00114	-0.00117	-0.00116

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00131	0.00132	0.00131
	(B * D * !Y)	-0.00173	-0.00173	-0.00173
	(B * !D * !Y)	0.00132	0.00132	0.00131
	(B * !D * !Y)	-0.00164	-0.00163	-0.00164
	(A * !B * D * !Y)	0.00132	0.00131	0.00131
	(A * !B * D * !Y)	-0.00178	-0.00179	-0.00178
	(A * !B * !D * !Y)	0.00133	0.00132	0.00131
	(A * !B * !D * !Y)	-0.00164	-0.00163	-0.00163
	(!A * !B * D * !Y)	0.00130	0.00131	0.00130
	(!A * !B * D * !Y)	-0.00233	-0.00238	-0.00237
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00218	0.00218	0.00218
	(B * D * !Y)	-0.00348	-0.00349	-0.00349
	(B * !D * !Y)	0.00219	0.00219	0.00217
	(B * !D * !Y)	-0.00332	-0.00332	-0.00334
	(A * !B * D * !Y)	0.00217	0.00218	0.00217
	(A * !B * D * !Y)	-0.00358	-0.00360	-0.00359
	(A * !B * !D * !Y)	0.00220	0.00220	0.00217
	(A * !B * !D * !Y)	-0.00330	-0.00330	-0.00333
	(!A * !B * D * !Y)	0.00218	0.00217	0.00216
	(!A * !B * D * !Y)	-0.00465	-0.00478	-0.00475

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00102	-0.00102	-0.00102
	(B * D * !Y)	0.00086	0.00085	0.00085
	(B * !D * !Y)	-0.00101	-0.00101	-0.00101
	(B * !D * !Y)	0.00082	0.00082	0.00082
	(A * !B * D * !Y)	-0.00102	-0.00102	-0.00102
	(A * !B * D * !Y)	0.00088	0.00088	0.00088
	(A * !B * !D * !Y)	-0.00099	-0.00099	-0.00100
	(A * !B * !D * !Y)	0.00082	0.00082	0.00082
	(!A * !B * D * !Y)	-0.00102	-0.00102	-0.00102
	(!A * !B * D * !Y)	0.00116	0.00117	0.00116
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00131	-0.00131	-0.00131
	(B * D * !Y)	0.00173	0.00173	0.00173
	(B * !D * !Y)	-0.00130	-0.00130	-0.00129
	(B * !D * !Y)	0.00167	0.00166	0.00168
	(A * !B * D * !Y)	-0.00130	-0.00131	-0.00130
	(A * !B * D * !Y)	0.00178	0.00179	0.00178
	(A * !B * !D * !Y)	-0.00121	-0.00122	-0.00127
	(A * !B * !D * !Y)	0.00167	0.00168	0.00166
	(!A * !B * D * !Y)	-0.00130	-0.00130	-0.00130
	(!A * !B * D * !Y)	0.00237	0.00238	0.00237
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00216	-0.00216	-0.00217
	(B * D * !Y)	0.00348	0.00349	0.00349
	(B * !D * !Y)	-0.00215	-0.00215	-0.00215
	(B * !D * !Y)	0.00341	0.00339	0.00340
	(A * !B * D * !Y)	-0.00217	-0.00217	-0.00217
	(A * !B * D * !Y)	0.00358	0.00360	0.00359
	(A * !B * !D * !Y)	-0.00205	-0.00205	-0.00208
	(A * !B * !D * !Y)	0.00338	0.00336	0.00339
	(!A * !B * D * !Y)	-0.00218	-0.00217	-0.00216
	(!A * !B * D * !Y)	0.00477	0.00478	0.00475

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00121	0.00119	0.00119
	(C * !Y)	-0.00075	-0.00074	-0.00074
	(B * !C * !Y)	0.00119	0.00119	0.00119
	(B * !C * !Y)	-0.00074	-0.00074	-0.00074
	(A * !B * !C * !Y)	0.00120	0.00119	0.00119
	(A * !B * !C * !Y)	-0.00074	-0.00074	-0.00074
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00148	0.00147	0.00147
	(C * !Y)	-0.00148	-0.00148	-0.00147
	(B * !C * !Y)	0.00148	0.00148	0.00147
	(B * !C * !Y)	-0.00148	-0.00147	-0.00146
	(A * !B * !C * !Y)	0.00146	0.00148	0.00147
	(A * !B * !C * !Y)	-0.00146	-0.00147	-0.00146
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00276	0.00276	0.00276
	(C * !Y)	-0.00294	-0.00293	-0.00293
	(B * !C * !Y)	0.00277	0.00276	0.00276
	(B * !C * !Y)	-0.00294	-0.00292	-0.00292
	(A * !B * !C * !Y)	0.00277	0.00276	0.00276
	(A * !B * !C * !Y)	-0.00294	-0.00293	-0.00292

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00116	-0.00116	-0.00119
	(C * !Y)	0.00077	0.00077	0.00075
	(B * !C * !Y)	-0.00108	-0.00109	-0.00118
	(B * !C * !Y)	0.00082	0.00081	0.00075
	(A * !B * !C * !Y)	-0.00100	-0.00100	-0.00116
	(A * !B * !C * !Y)	0.00087	0.00086	0.00076
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00140	-0.00142	-0.00147
	(C * !Y)	0.00152	0.00153	0.00148
	(B * !C * !Y)	-0.00121	-0.00123	-0.00143
	(B * !C * !Y)	0.00163	0.00164	0.00149
	(A * !B * !C * !Y)	-0.00104	-0.00106	-0.00138
	(A * !B * !C * !Y)	0.00173	0.00174	0.00152
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00260	-0.00261	-0.00276
	(C * !Y)	0.00308	0.00307	0.00296
	(B * !C * !Y)	-0.00229	-0.00230	-0.00270
	(B * !C * !Y)	0.00328	0.00325	0.00298
	(A * !B * !C * !Y)	-0.00188	-0.00191	-0.00258
	(A * !B * !C * !Y)	0.00349	0.00348	0.00305

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111ai_1	11.18880
sky130_fd_sc_hs__o2111ai_2	19.18080
sky130_fd_sc_hs__o2111ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__o2111ai_1	0.00250	0.00264	0.00256	0.00273	0.00269	0.16015
sky130_fd_sc_hs__o2111ai_2	0.00481	0.00493	0.00513	0.00498	0.00502	0.30246
sky130_fd_sc_hs__o2111ai_4	0.00962	0.00985	0.00746	0.00751	0.00757	0.56215

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	0.00009	0.00039
sky130_fd_sc_hs__o2111ai_2	0.00000	0.00018	0.00077
sky130_fd_sc_hs__o2111ai_4	0.00000	0.00030	0.00096

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)	0.48888	2.08786	13.67370
	A2->Y (FR)	0.45616	1.99542	13.30940
	B1->Y (FR)	0.17208	1.21815	9.33472
	C1->Y (FR)	0.15094	1.19599	9.31652
	D1->Y (FR)	0.12628	1.16994	9.28656
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.47511	1.87246	13.62240
	A2->Y (FR)	0.42535	1.75914	13.25070
	B1->Y (FR)	0.15806	1.10826	9.22540
	C1->Y (FR)	0.13507	1.08065	9.19567
	D1->Y (FR)	0.10261	1.05112	9.14781
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.47086	1.70773	13.60020
	A2->Y (FR)	0.41504	1.59948	13.24230
	B1->Y (FR)	0.27180	1.38132	12.09830
	C1->Y (FR)	0.21234	1.29534	11.76960
	D1->Y (FR)	0.15619	1.26293	11.99350

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.11955	0.70868	4.94737
	A2->Y (RF)	0.10626	0.68723	4.89141
	B1->Y (RF)	0.11162	0.73566	5.34748
	C1->Y (RF)	0.10227	0.76387	5.69648
	D1->Y (RF)	0.08775	0.76342	5.76926
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.12635	0.67173	5.05114
	A2->Y (RF)	0.10925	0.64627	4.99136
	B1->Y (RF)	0.11776	0.69469	5.45118
	C1->Y (RF)	0.10614	0.73969	5.99939
	D1->Y (RF)	0.08286	0.72806	6.08155
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.11815	0.60338	4.92926
	A2->Y (RF)	0.10859	0.59074	4.97171
	B1->Y (RF)	0.09545	0.61895	5.49192
	C1->Y (RF)	0.08414	0.65541	6.00555
	D1->Y (RF)	0.06061	0.64738	6.15768

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00148	0.00139	0.00135
	A1	0.00672	0.00663	0.00658
	A2	0.00151	0.00139	0.00134
	A2	0.00626	0.00614	0.00607
	B1	0.00087	0.00073	0.00068
	B1	0.00538	0.00523	0.00519
	C1	0.00045	0.00029	0.00025
	C1	0.00454	0.00438	0.00435
	D1	0.00012	-0.00002	-0.00005
	D1	0.00366	0.00354	0.00352
sky130_fd_sc_hs__o2111ai_2	A1	0.00222	0.00200	0.00195
	A1	0.01268	0.01248	0.01236
	A2	0.00225	0.00195	0.00190
	A2	0.01167	0.01139	0.01128
	B1	0.00098	0.00063	0.00057
	B1	0.01019	0.00985	0.00979
	C1	0.00028	-0.00009	-0.00013
	C1	0.00834	0.00786	0.00801
	D1	-0.00095	-0.00117	-0.00119
	D1	0.00604	0.00582	0.00585

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00395	0.00350	0.00337
	A1	0.02437	0.02390	0.02368
	A2	0.00387	0.00331	0.00319
	A2	0.02248	0.02196	0.02174
	B1	0.00173	0.00106	0.00100
	B1	0.01721	0.01657	0.01513
	C1	0.00037	-0.00034	-0.00036
	C1	0.01379	0.01280	0.01174
	D1	-0.00171	-0.00215	-0.00208
	D1	0.00946	0.00900	0.00872

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.00671	0.00665	0.00661
	A1	0.00133	0.00126	0.00122
	A2	0.00584	0.00584	0.00578
	A2	0.00090	0.00086	0.00084
	B1	0.00597	0.00592	0.00597
	B1	0.00140	0.00133	0.00129
	C1	0.00549	0.00542	0.00548
	C1	0.00140	0.00132	0.00129
	D1	0.00489	0.00481	0.00487
	D1	0.00137	0.00128	0.00124

sky130_fd_sc_hs__o2111ai_2	**A1**	0.01363	0.01348	0.01337
	A1	0.00286	0.00268	0.00261
	A2	0.01146	0.01138	0.01151
	A2	0.00165	0.00157	0.00154
	B1	0.01223	0.01213	0.01218
	B1	0.00287	0.00272	0.00264
	C1	0.01099	0.01086	0.01094
	C1	0.00290	0.00275	0.00269
	D1	0.00975	0.00958	0.00971
	D1	0.00286	0.00269	0.00262
sky130_fd_sc_hs__o2111ai_4	**A1**	0.02575	0.02535	0.02540
	A1	0.00475	0.00429	0.00420
	A2	0.02159	0.02135	0.02141
	A2	0.00219	0.00196	0.00203
	B1	0.02217	0.02209	0.02251
	B1	0.00638	0.00626	0.00616
	C1	0.01991	0.01980	0.01969
	C1	0.00644	0.00631	0.00624
	D1	0.01740	0.01724	0.01741
	D1	0.00641	0.00622	0.00617

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)**	0.00104	0.00106	0.00105
	(A2 * B1 * C1 * D1 * !Y)	-0.00118	-0.00120	-0.00120
	(A2 * B1 * C1 * !D1 * Y)	0.00104	0.00105	0.00104
	(A2 * B1 * C1 * !D1 * Y)	-0.00118	-0.00120	-0.00121
	(A2 * B1 * !C1 * Y)	0.00104	0.00105	0.00104
	(A2 * B1 * !C1 * Y)	-0.00118	-0.00120	-0.00121
	(A2 * !B1 * Y)	0.00104	0.00105	0.00104
	(A2 * !B1 * Y)	-0.00118	-0.00122	-0.00121
	(!A2 * B1 * C1 * !D1 * Y)	0.00095	0.00096	0.00095
	(!A2 * B1 * C1 * !D1 * Y)	-0.00123	-0.00123	-0.00123
	(!A2 * B1 * !C1 * D1 * Y)	0.00097	0.00096	0.00096
	(!A2 * B1 * !C1 * D1 * Y)	-0.00123	-0.00123	-0.00123
	(!A2 * B1 * !C1 * !D1 * Y)	0.00097	0.00097	0.00096
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00123	-0.00123	-0.00123
	(!A2 * !B1 * C1 * D1 * Y)	0.00099	0.00099	0.00098
	(!A2 * !B1 * C1 * D1 * Y)	-0.00123	-0.00123	-0.00123
	(!A2 * !B1 * !D1 * Y)	0.00099	0.00099	0.00098
	(!A2 * !B1 * !D1 * Y)	-0.00123	-0.00123	-0.00123
	(!A2 * !B1 * !C1 * D1 * Y)	0.00099	0.00099	0.00098
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00123	-0.00123	-0.00123

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00205	0.00205	0.00203
	(A2 * B1 * C1 * D1 * !Y)	-0.00236	-0.00243	-0.00241
	(A2 * B1 * C1 * !D1 * Y)	0.00203	0.00203	0.00202
	(A2 * B1 * C1 * !D1 * Y)	-0.00239	-0.00245	-0.00243
	(A2 * B1 * !C1 * Y)	0.00203	0.00204	0.00202
	(A2 * B1 * !C1 * Y)	-0.00239	-0.00245	-0.00243
	(A2 * !B1 * Y)	0.00203	0.00204	0.00202
	(A2 * !B1 * Y)	-0.00239	-0.00245	-0.00243
	(!A2 * B1 * C1 * !D1 * Y)	0.00182	0.00183	0.00182
	(!A2 * B1 * C1 * !D1 * Y)	-0.00249	-0.00250	-0.00249
	(!A2 * B1 * !C1 * D1 * Y)	0.00184	0.00186	0.00184
	(!A2 * B1 * !C1 * D1 * Y)	-0.00248	-0.00250	-0.00249
	(!A2 * B1 * !C1 * !D1 * Y)	0.00183	0.00184	0.00184
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00248	-0.00249	-0.00249
	(!A2 * !B1 * C1 * D1 * Y)	0.00187	0.00188	0.00188
	(!A2 * !B1 * C1 * D1 * Y)	-0.00248	-0.00249	-0.00249
	(!A2 * !B1 * !D1 * Y)	0.00186	0.00189	0.00188
	(!A2 * !B1 * !D1 * Y)	-0.00248	-0.00250	-0.00249
	(!A2 * !B1 * !C1 * D1 * Y)	0.00187	0.00189	0.00188
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00248	-0.00250	-0.00249

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00421	0.00417	0.00413
	(A2 * B1 * C1 * D1 * !Y)	-0.00460	-0.00470	-0.00466
	(A2 * B1 * C1 * !D1 * Y)	0.00398	0.00398	0.00395
	(A2 * B1 * C1 * !D1 * Y)	-0.00483	-0.00490	-0.00487
	(A2 * B1 * !C1 * Y)	0.00398	0.00398	0.00395
	(A2 * B1 * !C1 * Y)	-0.00483	-0.00490	-0.00487
	(A2 * !B1 * Y)	0.00398	0.00398	0.00395
	(A2 * !B1 * Y)	-0.00483	-0.00490	-0.00487
	(!A2 * B1 * C1 * !D1 * Y)	0.00359	0.00360	0.00356
	(!A2 * B1 * C1 * !D1 * Y)	-0.00498	-0.00498	-0.00496
	(!A2 * B1 * !C1 * D1 * Y)	0.00363	0.00364	0.00360
	(!A2 * B1 * !C1 * D1 * Y)	-0.00498	-0.00499	-0.00495
	(!A2 * B1 * !C1 * !D1 * Y)	0.00363	0.00364	0.00360
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00497	-0.00498	-0.00495
	(!A2 * !B1 * C1 * D1 * Y)	0.00366	0.00368	0.00368
	(!A2 * !B1 * C1 * D1 * Y)	-0.00493	-0.00496	-0.00495
	(!A2 * !B1 * !D1 * Y)	0.00370	0.00369	0.00368
	(!A2 * !B1 * !D1 * Y)	-0.00496	-0.00496	-0.00495
	(!A2 * !B1 * !C1 * D1 * Y)	0.00371	0.00369	0.00368
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00496	-0.00496	-0.00495

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)**	-0.00104	-0.00105	-0.00105
	(A2 * B1 * C1 * D1 * !Y)	0.00121	0.00120	0.00120
	(A2 * B1 * C1 * !D1 * Y)	-0.00104	-0.00104	-0.00104
	(A2 * B1 * C1 * !D1 * Y)	0.00121	0.00120	0.00121
	(A2 * B1 * !C1 * Y)	-0.00104	-0.00104	-0.00104
	(A2 * B1 * !C1 * Y)	0.00120	0.00120	0.00121
	(A2 * !B1 * Y)	-0.00104	-0.00105	-0.00104
	(A2 * !B1 * Y)	0.00120	0.00122	0.00121
	(!A2 * B1 * C1 * !D1 * Y)	-0.00089	-0.00096	-0.00095
	(!A2 * B1 * C1 * !D1 * Y)	0.00123	0.00123	0.00123
	(!A2 * B1 * !C1 * D1 * Y)	-0.00092	-0.00096	-0.00096
	(!A2 * B1 * !C1 * D1 * Y)	0.00124	0.00123	0.00123
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00092	-0.00097	-0.00096
	(!A2 * B1 * !C1 * !D1 * Y)	0.00124	0.00123	0.00123
	(!A2 * !B1 * C1 * D1 * Y)	-0.00096	-0.00099	-0.00098
	(!A2 * !B1 * C1 * D1 * Y)	0.00123	0.00124	0.00123
	(!A2 * !B1 * !D1 * Y)	-0.00096	-0.00099	-0.00098
	(!A2 * !B1 * !D1 * Y)	0.00123	0.00124	0.00123
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00096	-0.00099	-0.00098
	(!A2 * !B1 * !C1 * D1 * Y)	0.00123	0.00124	0.00123

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00203	-0.00204	-0.00203
	(A2 * B1 * C1 * D1 * !Y)	0.00240	0.00243	0.00241
	(A2 * B1 * C1 * !D1 * Y)	-0.00201	-0.00203	-0.00202
	(A2 * B1 * C1 * !D1 * Y)	0.00242	0.00245	0.00243
	(A2 * B1 * !C1 * Y)	-0.00202	-0.00203	-0.00202
	(A2 * B1 * !C1 * Y)	0.00243	0.00245	0.00243
	(A2 * !B1 * Y)	-0.00202	-0.00203	-0.00202
	(A2 * !B1 * Y)	0.00243	0.00245	0.00243
	(!A2 * B1 * C1 * !D1 * Y)	-0.00173	-0.00183	-0.00182
	(!A2 * B1 * C1 * !D1 * Y)	0.00250	0.00251	0.00249
	(!A2 * B1 * !C1 * D1 * Y)	-0.00176	-0.00186	-0.00184
	(!A2 * B1 * !C1 * D1 * Y)	0.00250	0.00250	0.00249
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00176	-0.00184	-0.00184
	(!A2 * B1 * !C1 * !D1 * Y)	0.00250	0.00250	0.00249
	(!A2 * !B1 * C1 * D1 * Y)	-0.00183	-0.00188	-0.00188
	(!A2 * !B1 * C1 * D1 * Y)	0.00250	0.00251	0.00249
	(!A2 * !B1 * !D1 * Y)	-0.00183	-0.00189	-0.00188
	(!A2 * !B1 * !D1 * Y)	0.00250	0.00251	0.00249
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00183	-0.00189	-0.00188
	(!A2 * !B1 * !C1 * D1 * Y)	0.00250	0.00251	0.00249

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00413	-0.00416	-0.00413
	(A2 * B1 * C1 * D1 * !Y)	0.00465	0.00470	0.00466
	(A2 * B1 * C1 * !D1 * Y)	-0.00392	-0.00396	-0.00394
	(A2 * B1 * C1 * !D1 * Y)	0.00483	0.00490	0.00487
	(A2 * B1 * !C1 * Y)	-0.00393	-0.00396	-0.00394
	(A2 * B1 * !C1 * Y)	0.00485	0.00490	0.00487
	(A2 * !B1 * Y)	-0.00394	-0.00396	-0.00394
	(A2 * !B1 * Y)	0.00486	0.00490	0.00487
	(!A2 * B1 * C1 * !D1 * Y)	-0.00336	-0.00360	-0.00356
	(!A2 * B1 * C1 * !D1 * Y)	0.00499	0.00498	0.00497
	(!A2 * B1 * !C1 * D1 * Y)	-0.00342	-0.00364	-0.00360
	(!A2 * B1 * !C1 * D1 * Y)	0.00499	0.00499	0.00497
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00342	-0.00364	-0.00360
	(!A2 * B1 * !C1 * !D1 * Y)	0.00499	0.00499	0.00497
	(!A2 * !B1 * C1 * D1 * Y)	-0.00355	-0.00368	-0.00368
	(!A2 * !B1 * C1 * D1 * Y)	0.00496	0.00499	0.00497
	(!A2 * !B1 * !D1 * Y)	-0.00355	-0.00369	-0.00368
	(!A2 * !B1 * !D1 * Y)	0.00496	0.00499	0.00497
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00355	-0.00369	-0.00368
	(!A2 * !B1 * !C1 * D1 * Y)	0.00496	0.00499	0.00497

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)**	0.00116	0.00115	0.00115
	(A1 * B1 * C1 * D1 * !Y)	-0.00074	-0.00073	-0.00073
	(A1 * B1 * C1 * !D1 * Y)	0.00102	0.00103	0.00102
	(A1 * B1 * C1 * !D1 * Y)	-0.00117	-0.00119	-0.00118
	(A1 * B1 * !C1 * D1 * Y)	0.00102	0.00103	0.00102
	(A1 * B1 * !C1 * D1 * Y)	-0.00117	-0.00119	-0.00118
	(A1 * B1 * !C1 * !D1 * Y)	0.00102	0.00102	0.00102
	(A1 * B1 * !C1 * !D1 * Y)	-0.00117	-0.00120	-0.00119
	(A1 * !B1 * C1 * D1 * Y)	0.00102	0.00103	0.00102
	(A1 * !B1 * C1 * D1 * Y)	-0.00117	-0.00120	-0.00119
	(A1 * !B1 * !D1 * Y)	0.00102	0.00102	0.00102
	(A1 * !B1 * !D1 * Y)	-0.00117	-0.00119	-0.00119
	(A1 * !B1 * !C1 * D1 * Y)	0.00102	0.00102	0.00102
	(A1 * !B1 * !C1 * D1 * Y)	-0.00117	-0.00119	-0.00119
	(!A1 * B1 * C1 * !D1 * Y)	0.00092	0.00093	0.00092
	(!A1 * B1 * C1 * !D1 * Y)	-0.00121	-0.00121	-0.00121
	(!A1 * B1 * !C1 * D1 * Y)	0.00093	0.00094	0.00094
	(!A1 * B1 * !C1 * D1 * Y)	-0.00121	-0.00122	-0.00121
	(!A1 * B1 * !C1 * !D1 * Y)	0.00094	0.00094	0.00093
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00121	-0.00122	-0.00121
	(!A1 * !B1 * C1 * D1 * Y)	0.00096	0.00096	0.00096
	(!A1 * !B1 * C1 * D1 * Y)	-0.00121	-0.00122	-0.00121
	(!A1 * !B1 * !D1 * Y)	0.00096	0.00096	0.00096
	(!A1 * !B1 * !D1 * Y)	-0.00120	-0.00122	-0.00121
	(!A1 * !B1 * !C1 * D1 * Y)	0.00096	0.00096	0.00095
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00120	-0.00122	-0.00121

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00225	0.00223	0.00223
	(A1 * B1 * C1 * D1 * !Y)	-0.00150	-0.00148	-0.00148
	(A1 * B1 * C1 * !D1 * Y)	0.00197	0.00198	0.00197
	(A1 * B1 * C1 * !D1 * Y)	-0.00235	-0.00241	-0.00239
	(A1 * B1 * !C1 * D1 * Y)	0.00197	0.00198	0.00197
	(A1 * B1 * !C1 * D1 * Y)	-0.00235	-0.00241	-0.00239
	(A1 * B1 * !C1 * !D1 * Y)	0.00197	0.00198	0.00197
	(A1 * B1 * !C1 * !D1 * Y)	-0.00235	-0.00241	-0.00239
	(A1 * !B1 * C1 * D1 * Y)	0.00197	0.00198	0.00197
	(A1 * !B1 * C1 * D1 * Y)	-0.00235	-0.00241	-0.00239
	(A1 * !B1 * !D1 * Y)	0.00197	0.00198	0.00197
	(A1 * !B1 * !D1 * Y)	-0.00235	-0.00241	-0.00239
	(A1 * !B1 * !C1 * D1 * Y)	0.00197	0.00198	0.00197
	(A1 * !B1 * !C1 * D1 * Y)	-0.00235	-0.00241	-0.00239
	(!A1 * B1 * C1 * !D1 * Y)	0.00178	0.00179	0.00178
	(!A1 * B1 * C1 * !D1 * Y)	-0.00245	-0.00247	-0.00245
	(!A1 * B1 * !C1 * D1 * Y)	0.00180	0.00180	0.00179
	(!A1 * B1 * !C1 * D1 * Y)	-0.00246	-0.00246	-0.00245
	(!A1 * B1 * !C1 * !D1 * Y)	0.00179	0.00181	0.00179
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00245	-0.00247	-0.00245
	(!A1 * !B1 * C1 * D1 * Y)	0.00183	0.00184	0.00183
	(!A1 * !B1 * C1 * D1 * Y)	-0.00245	-0.00246	-0.00245
	(!A1 * !B1 * !D1 * Y)	0.00183	0.00185	0.00183
	(!A1 * !B1 * !D1 * Y)	-0.00245	-0.00247	-0.00245
	(!A1 * !B1 * !C1 * D1 * Y)	0.00183	0.00185	0.00183
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00245	-0.00247	-0.00245

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00465	0.00460	0.00460
	(A1 * B1 * C1 * D1 * !Y)	-0.00300	-0.00296	-0.00295
	(A1 * B1 * C1 * !D1 * Y)	0.00402	0.00408	0.00402
	(A1 * B1 * C1 * !D1 * Y)	-0.00478	-0.00487	-0.00484
	(A1 * B1 * !C1 * D1 * Y)	0.00402	0.00406	0.00402
	(A1 * B1 * !C1 * D1 * Y)	-0.00478	-0.00487	-0.00484
	(A1 * B1 * !C1 * !D1 * Y)	0.00402	0.00403	0.00402
	(A1 * B1 * !C1 * !D1 * Y)	-0.00478	-0.00488	-0.00485
	(A1 * !B1 * C1 * D1 * Y)	0.00402	0.00406	0.00402
	(A1 * !B1 * C1 * D1 * Y)	-0.00478	-0.00487	-0.00484
	(A1 * !B1 * !D1 * Y)	0.00402	0.00403	0.00402
	(A1 * !B1 * !D1 * Y)	-0.00478	-0.00488	-0.00485
	(A1 * !B1 * !C1 * D1 * Y)	0.00402	0.00403	0.00402
	(A1 * !B1 * !C1 * D1 * Y)	-0.00478	-0.00488	-0.00485
	(!A1 * B1 * C1 * !D1 * Y)	0.00364	0.00362	0.00362
	(!A1 * B1 * C1 * !D1 * Y)	-0.00497	-0.00496	-0.00496
	(!A1 * B1 * !C1 * D1 * Y)	0.00366	0.00369	0.00366
	(!A1 * B1 * !C1 * D1 * Y)	-0.00495	-0.00497	-0.00495
	(!A1 * B1 * !C1 * !D1 * Y)	0.00366	0.00370	0.00366
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00495	-0.00498	-0.00496
	(!A1 * !B1 * C1 * D1 * Y)	0.00376	0.00375	0.00374
	(!A1 * !B1 * C1 * D1 * Y)	-0.00495	-0.00496	-0.00496
	(!A1 * !B1 * !D1 * Y)	0.00375	0.00376	0.00372
	(!A1 * !B1 * !D1 * Y)	-0.00495	-0.00498	-0.00496
	(!A1 * !B1 * !C1 * D1 * Y)	0.00376	0.00378	0.00374
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00495	-0.00499	-0.00496

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)**	-0.00111	-0.00111	-0.00115
	(A1 * B1 * C1 * D1 * !Y)	0.00075	0.00076	0.00073
	(A1 * B1 * C1 * !D1 * Y)	-0.00102	-0.00102	-0.00102
	(A1 * B1 * C1 * !D1 * Y)	0.00119	0.00119	0.00118
	(A1 * B1 * !C1 * D1 * Y)	-0.00102	-0.00102	-0.00102
	(A1 * B1 * !C1 * D1 * Y)	0.00119	0.00119	0.00118
	(A1 * B1 * !C1 * !D1 * Y)	-0.00101	-0.00102	-0.00102
	(A1 * B1 * !C1 * !D1 * Y)	0.00118	0.00120	0.00119
	(A1 * !B1 * C1 * D1 * Y)	-0.00101	-0.00102	-0.00102
	(A1 * !B1 * C1 * D1 * Y)	0.00117	0.00120	0.00119
	(A1 * !B1 * !D1 * Y)	-0.00101	-0.00102	-0.00102
	(A1 * !B1 * !D1 * Y)	0.00118	0.00120	0.00119
	(A1 * !B1 * !C1 * D1 * Y)	-0.00101	-0.00102	-0.00102
	(A1 * !B1 * !C1 * D1 * Y)	0.00118	0.00120	0.00119
	(!A1 * B1 * C1 * !D1 * Y)	-0.00086	-0.00093	-0.00092
	(!A1 * B1 * C1 * !D1 * Y)	0.00121	0.00121	0.00122
	(!A1 * B1 * !C1 * D1 * Y)	-0.00089	-0.00094	-0.00094
	(!A1 * B1 * !C1 * D1 * Y)	0.00121	0.00122	0.00122
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00089	-0.00094	-0.00093
	(!A1 * B1 * !C1 * !D1 * Y)	0.00122	0.00122	0.00122
	(!A1 * !B1 * C1 * D1 * Y)	-0.00092	-0.00096	-0.00096
	(!A1 * !B1 * C1 * D1 * Y)	0.00121	0.00122	0.00122
	(!A1 * !B1 * !D1 * Y)	-0.00092	-0.00096	-0.00096
	(!A1 * !B1 * !D1 * Y)	0.00120	0.00122	0.00122
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00092	-0.00096	-0.00095
	(!A1 * !B1 * !C1 * D1 * Y)	0.00120	0.00122	0.00122

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00212	-0.00213	-0.00222
	(A1 * B1 * C1 * D1 * !Y)	0.00158	0.00158	0.00150
	(A1 * B1 * C1 * !D1 * Y)	-0.00197	-0.00198	-0.00197
	(A1 * B1 * C1 * !D1 * Y)	0.00238	0.00241	0.00239
	(A1 * B1 * !C1 * D1 * Y)	-0.00197	-0.00198	-0.00197
	(A1 * B1 * !C1 * D1 * Y)	0.00238	0.00241	0.00239
	(A1 * B1 * !C1 * !D1 * Y)	-0.00197	-0.00198	-0.00197
	(A1 * B1 * !C1 * !D1 * Y)	0.00239	0.00241	0.00239
	(A1 * !B1 * C1 * D1 * Y)	-0.00197	-0.00198	-0.00197
	(A1 * !B1 * C1 * D1 * Y)	0.00238	0.00241	0.00239
	(A1 * !B1 * !D1 * Y)	-0.00197	-0.00198	-0.00197
	(A1 * !B1 * !D1 * Y)	0.00239	0.00241	0.00239
	(A1 * !B1 * !C1 * D1 * Y)	-0.00197	-0.00198	-0.00197
	(A1 * !B1 * !C1 * D1 * Y)	0.00239	0.00241	0.00239
	(!A1 * B1 * C1 * !D1 * Y)	-0.00168	-0.00179	-0.00178
	(!A1 * B1 * C1 * !D1 * Y)	0.00245	0.00247	0.00246
	(!A1 * B1 * !C1 * D1 * Y)	-0.00172	-0.00180	-0.00179
	(!A1 * B1 * !C1 * D1 * Y)	0.00246	0.00247	0.00246
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00172	-0.00181	-0.00179
	(!A1 * B1 * !C1 * !D1 * Y)	0.00246	0.00247	0.00246
	(!A1 * !B1 * C1 * D1 * Y)	-0.00178	-0.00184	-0.00183
	(!A1 * !B1 * C1 * D1 * Y)	0.00245	0.00247	0.00246
	(!A1 * !B1 * !D1 * Y)	-0.00178	-0.00185	-0.00183
	(!A1 * !B1 * !D1 * Y)	0.00245	0.00247	0.00246
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00178	-0.00185	-0.00183
	(!A1 * !B1 * !C1 * D1 * Y)	0.00245	0.00247	0.00246

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00435	-0.00438	-0.00459
	(A1 * B1 * C1 * D1 * !Y)	0.00317	0.00317	0.00301
	(A1 * B1 * C1 * !D1 * Y)	-0.00402	-0.00403	-0.00401
	(A1 * B1 * C1 * !D1 * Y)	0.00485	0.00487	0.00484
	(A1 * B1 * !C1 * D1 * Y)	-0.00400	-0.00403	-0.00401
	(A1 * B1 * !C1 * D1 * Y)	0.00483	0.00487	0.00484
	(A1 * B1 * !C1 * !D1 * Y)	-0.00401	-0.00403	-0.00401
	(A1 * B1 * !C1 * !D1 * Y)	0.00484	0.00488	0.00485
	(A1 * !B1 * C1 * D1 * Y)	-0.00401	-0.00403	-0.00401
	(A1 * !B1 * C1 * D1 * Y)	0.00484	0.00487	0.00484
	(A1 * !B1 * !D1 * Y)	-0.00400	-0.00403	-0.00401
	(A1 * !B1 * !D1 * Y)	0.00483	0.00488	0.00485
	(A1 * !B1 * !C1 * D1 * Y)	-0.00400	-0.00403	-0.00401
	(A1 * !B1 * !C1 * D1 * Y)	0.00483	0.00488	0.00485
	(!A1 * B1 * C1 * !D1 * Y)	-0.00342	-0.00362	-0.00362
	(!A1 * B1 * C1 * !D1 * Y)	0.00498	0.00499	0.00497
	(!A1 * B1 * !C1 * D1 * Y)	-0.00348	-0.00369	-0.00366
	(!A1 * B1 * !C1 * D1 * Y)	0.00498	0.00499	0.00497
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00348	-0.00370	-0.00366
	(!A1 * B1 * !C1 * !D1 * Y)	0.00498	0.00498	0.00497
	(!A1 * !B1 * C1 * D1 * Y)	-0.00361	-0.00375	-0.00374
	(!A1 * !B1 * C1 * D1 * Y)	0.00495	0.00499	0.00497
	(!A1 * !B1 * !D1 * Y)	-0.00361	-0.00376	-0.00372
	(!A1 * !B1 * !D1 * Y)	0.00495	0.00499	0.00497
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00361	-0.00376	-0.00374
	(!A1 * !B1 * !C1 * D1 * Y)	0.00495	0.00499	0.00497

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)**	0.00089	0.00091	0.00090
	(A2 * C1 * !D1 * Y)	-0.00122	-0.00123	-0.00123
	(A2 * !C1 * D1 * Y)	0.00092	0.00093	0.00093
	(A2 * !C1 * D1 * Y)	-0.00122	-0.00123	-0.00123
	(A2 * !C1 * !D1 * Y)	0.00093	0.00093	0.00093
	(A2 * !C1 * !D1 * Y)	-0.00123	-0.00123	-0.00123
	(A1 * !A2 * C1 * !D1 * Y)	0.00090	0.00090	0.00090
	(A1 * !A2 * C1 * !D1 * Y)	-0.00122	-0.00122	-0.00123
	(A1 * !A2 * !C1 * D1 * Y)	0.00093	0.00093	0.00093
	(A1 * !A2 * !C1 * D1 * Y)	-0.00123	-0.00123	-0.00123
	(A1 * !A2 * !C1 * !D1 * Y)	0.00092	0.00093	0.00093
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00122	-0.00123	-0.00123
	(!A1 * !A2 * C1 * D1 * Y)	0.00051	0.00051	0.00051
	(!A1 * !A2 * C1 * D1 * Y)	-0.00119	-0.00121	-0.00119
	(!A1 * !A2 * C1 * !D1 * Y)	0.00055	0.00055	0.00055
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00123	-0.00123	-0.00123
	(!A1 * !A2 * !C1 * D1 * Y)	0.00059	0.00059	0.00058
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00123	-0.00123	-0.00123
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00060	0.00060	0.00060
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00122	-0.00123	-0.00123

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00191	0.00192	0.00191
	(A2 * C1 * !D1 * Y)	-0.00255	-0.00256	-0.00255
	(A2 * !C1 * D1 * Y)	0.00196	0.00198	0.00196
	(A2 * !C1 * D1 * Y)	-0.00254	-0.00256	-0.00255
	(A2 * !C1 * !D1 * Y)	0.00196	0.00198	0.00196
	(A2 * !C1 * !D1 * Y)	-0.00254	-0.00256	-0.00255
	(A1 * !A2 * C1 * !D1 * Y)	0.00190	0.00191	0.00191
	(A1 * !A2 * C1 * !D1 * Y)	-0.00255	-0.00255	-0.00255
	(A1 * !A2 * !C1 * D1 * Y)	0.00197	0.00198	0.00196
	(A1 * !A2 * !C1 * D1 * Y)	-0.00255	-0.00256	-0.00255
	(A1 * !A2 * !C1 * !D1 * Y)	0.00196	0.00198	0.00197
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00254	-0.00256	-0.00255
	(!A1 * !A2 * C1 * D1 * Y)	0.00108	0.00108	0.00109
	(!A1 * !A2 * C1 * D1 * Y)	-0.00249	-0.00250	-0.00248
	(!A1 * !A2 * C1 * !D1 * Y)	0.00117	0.00118	0.00117
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00255	-0.00257	-0.00255
	(!A1 * !A2 * !C1 * D1 * Y)	0.00121	0.00122	0.00121
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00255	-0.00256	-0.00255
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00125	0.00125	0.00124
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00255	-0.00256	-0.00255

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00365	0.00369	0.00365
	(A2 * C1 * !D1 * Y)	-0.00267	-0.00269	-0.00267
	(A2 * !C1 * D1 * Y)	0.00378	0.00381	0.00377
	(A2 * !C1 * D1 * Y)	-0.00266	-0.00268	-0.00267
	(A2 * !C1 * !D1 * Y)	0.00378	0.00380	0.00377
	(A2 * !C1 * !D1 * Y)	-0.00266	-0.00268	-0.00267
	(A1 * !A2 * C1 * !D1 * Y)	0.00363	0.00367	0.00365
	(A1 * !A2 * C1 * !D1 * Y)	-0.00266	-0.00268	-0.00267
	(A1 * !A2 * !C1 * D1 * Y)	0.00376	0.00379	0.00377
	(A1 * !A2 * !C1 * D1 * Y)	-0.00266	-0.00267	-0.00267
	(A1 * !A2 * !C1 * !D1 * Y)	0.00377	0.00380	0.00377
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00266	-0.00268	-0.00267
	(!A1 * !A2 * C1 * D1 * Y)	0.00200	0.00201	0.00202
	(!A1 * !A2 * C1 * D1 * Y)	-0.00256	-0.00256	-0.00253
	(!A1 * !A2 * C1 * !D1 * Y)	0.00217	0.00218	0.00217
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00268	-0.00270	-0.00268
	(!A1 * !A2 * !C1 * D1 * Y)	0.00224	0.00226	0.00224
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00267	-0.00268	-0.00267
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00231	0.00232	0.00231
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00267	-0.00268	-0.00267

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)**	-0.00085	-0.00091	-0.00090
	(A2 * C1 * !D1 * Y)	0.00123	0.00124	0.00123
	(A2 * !C1 * D1 * Y)	-0.00091	-0.00093	-0.00093
	(A2 * !C1 * D1 * Y)	0.00123	0.00124	0.00123
	(A2 * !C1 * !D1 * Y)	-0.00091	-0.00093	-0.00093
	(A2 * !C1 * !D1 * Y)	0.00123	0.00124	0.00123
	(A1 * !A2 * C1 * !D1 * Y)	-0.00084	-0.00090	-0.00090
	(A1 * !A2 * C1 * !D1 * Y)	0.00123	0.00124	0.00123
	(A1 * !A2 * !C1 * D1 * Y)	-0.00091	-0.00093	-0.00093
	(A1 * !A2 * !C1 * D1 * Y)	0.00124	0.00124	0.00123
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00091	-0.00093	-0.00093
	(A1 * !A2 * !C1 * !D1 * Y)	0.00124	0.00124	0.00123
	(!A1 * !A2 * C1 * D1 * Y)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * C1 * D1 * Y)	0.00124	0.00124	0.00123
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00055	-0.00055	-0.00055
	(!A1 * !A2 * C1 * !D1 * Y)	0.00123	0.00123	0.00123
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00059	-0.00059	-0.00058
	(!A1 * !A2 * !C1 * D1 * Y)	0.00123	0.00123	0.00123
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00123	0.00123	0.00123

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00184	-0.00192	-0.00191
	(A2 * C1 * !D1 * Y)	0.00256	0.00257	0.00256
	(A2 * !C1 * D1 * Y)	-0.00191	-0.00198	-0.00196
	(A2 * !C1 * D1 * Y)	0.00254	0.00258	0.00256
	(A2 * !C1 * !D1 * Y)	-0.00192	-0.00198	-0.00196
	(A2 * !C1 * !D1 * Y)	0.00254	0.00258	0.00256
	(A1 * !A2 * C1 * !D1 * Y)	-0.00181	-0.00191	-0.00191
	(A1 * !A2 * C1 * !D1 * Y)	0.00257	0.00258	0.00256
	(A1 * !A2 * !C1 * D1 * Y)	-0.00192	-0.00198	-0.00196
	(A1 * !A2 * !C1 * D1 * Y)	0.00256	0.00258	0.00256
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00192	-0.00198	-0.00197
	(A1 * !A2 * !C1 * !D1 * Y)	0.00256	0.00258	0.00256
	(!A1 * !A2 * C1 * D1 * Y)	-0.00103	-0.00103	-0.00103
	(!A1 * !A2 * C1 * D1 * Y)	0.00256	0.00256	0.00256
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00117	-0.00118	-0.00117
	(!A1 * !A2 * C1 * !D1 * Y)	0.00255	0.00257	0.00256
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00121	-0.00122	-0.00121
	(!A1 * !A2 * !C1 * D1 * Y)	0.00255	0.00256	0.00256
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00125	-0.00125	-0.00124
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00255	0.00256	0.00256

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00348	-0.00369	-0.00365
	(A2 * C1 * !D1 * Y)	0.00269	0.00270	0.00268
	(A2 * !C1 * D1 * Y)	-0.00367	-0.00381	-0.00377
	(A2 * !C1 * D1 * Y)	0.00266	0.00269	0.00267
	(A2 * !C1 * !D1 * Y)	-0.00367	-0.00380	-0.00377
	(A2 * !C1 * !D1 * Y)	0.00266	0.00269	0.00267
	(A1 * !A2 * C1 * !D1 * Y)	-0.00345	-0.00367	-0.00365
	(A1 * !A2 * C1 * !D1 * Y)	0.00269	0.00270	0.00268
	(A1 * !A2 * !C1 * D1 * Y)	-0.00366	-0.00379	-0.00377
	(A1 * !A2 * !C1 * D1 * Y)	0.00267	0.00269	0.00267
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00366	-0.00380	-0.00377
	(A1 * !A2 * !C1 * !D1 * Y)	0.00267	0.00269	0.00267
	(!A1 * !A2 * C1 * D1 * Y)	-0.00190	-0.00191	-0.00190
	(!A1 * !A2 * C1 * D1 * Y)	0.00270	0.00272	0.00269
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00217	-0.00218	-0.00217
	(!A1 * !A2 * C1 * !D1 * Y)	0.00268	0.00271	0.00269
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00224	-0.00226	-0.00224
	(!A1 * !A2 * !C1 * D1 * Y)	0.00269	0.00269	0.00268
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00231	-0.00232	-0.00231
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00267	0.00269	0.00268

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)**	0.00094	0.00095	0.00095
	(A2 * B1 * !D1 * Y)	-0.00127	-0.00128	-0.00127
	(A2 * !B1 * D1 * Y)	0.00052	0.00052	0.00051
	(A2 * !B1 * D1 * Y)	-0.00127	-0.00127	-0.00126
	(A2 * !B1 * !D1 * Y)	0.00055	0.00055	0.00055
	(A2 * !B1 * !D1 * Y)	-0.00127	-0.00127	-0.00127
	(A1 * !A2 * B1 * !D1 * Y)	0.00095	0.00095	0.00095
	(A1 * !A2 * B1 * !D1 * Y)	-0.00127	-0.00128	-0.00127
	(!A2 * !B1 * D1 * Y)	0.00051	0.00052	0.00051
	(!A2 * !B1 * D1 * Y)	-0.00127	-0.00127	-0.00126
	(!A2 * !B1 * !D1 * Y)	0.00055	0.00055	0.00055
	(!A2 * !B1 * !D1 * Y)	-0.00127	-0.00127	-0.00127
	(!A1 * !A2 * B1 * D1 * Y)	0.00050	0.00050	0.00049
	(!A1 * !A2 * B1 * D1 * Y)	-0.00127	-0.00128	-0.00126
	(!A1 * !A2 * B1 * !D1 * Y)	0.00058	0.00058	0.00058
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00127	-0.00127	-0.00127

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00186	0.00187	0.00186
	(A2 * B1 * !D1 * Y)	-0.00248	-0.00249	-0.00248
	(A2 * !B1 * D1 * Y)	0.00102	0.00103	0.00103
	(A2 * !B1 * D1 * Y)	-0.00247	-0.00249	-0.00247
	(A2 * !B1 * !D1 * Y)	0.00112	0.00113	0.00112
	(A2 * !B1 * !D1 * Y)	-0.00248	-0.00249	-0.00249
	(A1 * !A2 * B1 * !D1 * Y)	0.00185	0.00187	0.00186
	(A1 * !A2 * B1 * !D1 * Y)	-0.00248	-0.00249	-0.00248
	(!A2 * !B1 * D1 * Y)	0.00102	0.00103	0.00103
	(!A2 * !B1 * D1 * Y)	-0.00247	-0.00249	-0.00247
	(!A2 * !B1 * !D1 * Y)	0.00112	0.00113	0.00112
	(!A2 * !B1 * !D1 * Y)	-0.00248	-0.00249	-0.00249
	(!A1 * !A2 * B1 * D1 * Y)	0.00096	0.00098	0.00099
	(!A1 * !A2 * B1 * D1 * Y)	-0.00246	-0.00249	-0.00246
	(!A1 * !A2 * B1 * !D1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00248	-0.00250	-0.00249

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00368	0.00371	0.00369
	(A2 * B1 * !D1 * Y)	-0.00263	-0.00264	-0.00264
	(A2 * !B1 * D1 * Y)	0.00194	0.00195	0.00194
	(A2 * !B1 * D1 * Y)	-0.00264	-0.00264	-0.00262
	(A2 * !B1 * !D1 * Y)	0.00210	0.00210	0.00209
	(A2 * !B1 * !D1 * Y)	-0.00265	-0.00266	-0.00266
	(A1 * !A2 * B1 * !D1 * Y)	0.00369	0.00372	0.00370
	(A1 * !A2 * B1 * !D1 * Y)	-0.00263	-0.00264	-0.00264
	(!A2 * !B1 * D1 * Y)	0.00194	0.00194	0.00194
	(!A2 * !B1 * D1 * Y)	-0.00264	-0.00263	-0.00262
	(!A2 * !B1 * !D1 * Y)	0.00210	0.00210	0.00209
	(!A2 * !B1 * !D1 * Y)	-0.00265	-0.00266	-0.00266
	(!A1 * !A2 * B1 * D1 * Y)	0.00186	0.00187	0.00188
	(!A1 * !A2 * B1 * D1 * Y)	-0.00263	-0.00263	-0.00261
	(!A1 * !A2 * B1 * !D1 * Y)	0.00220	0.00220	0.00219
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00263	-0.00266	-0.00265

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)**	-0.00092	-0.00095	-0.00095
	(A2 * B1 * !D1 * Y)	0.00128	0.00129	0.00128
	(A2 * !B1 * D1 * Y)	-0.00049	-0.00049	-0.00050
	(A2 * !B1 * D1 * Y)	0.00129	0.00130	0.00128
	(A2 * !B1 * !D1 * Y)	-0.00055	-0.00055	-0.00055
	(A2 * !B1 * !D1 * Y)	0.00127	0.00127	0.00127
	(A1 * !A2 * B1 * !D1 * Y)	-0.00092	-0.00095	-0.00095
	(A1 * !A2 * B1 * !D1 * Y)	0.00127	0.00129	0.00128
	(!A2 * !B1 * D1 * Y)	-0.00049	-0.00049	-0.00050
	(!A2 * !B1 * D1 * Y)	0.00129	0.00129	0.00128
	(!A2 * !B1 * !D1 * Y)	-0.00055	-0.00055	-0.00055
	(!A2 * !B1 * !D1 * Y)	0.00127	0.00127	0.00127
	(!A1 * !A2 * B1 * D1 * Y)	-0.00047	-0.00047	-0.00048
	(!A1 * !A2 * B1 * D1 * Y)	0.00129	0.00130	0.00128
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * B1 * !D1 * Y)	0.00127	0.00128	0.00128

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00181	-0.00187	-0.00186
	(A2 * B1 * !D1 * Y)	0.00249	0.00251	0.00249
	(A2 * !B1 * D1 * Y)	-0.00096	-0.00096	-0.00099
	(A2 * !B1 * D1 * Y)	0.00254	0.00255	0.00250
	(A2 * !B1 * !D1 * Y)	-0.00112	-0.00113	-0.00112
	(A2 * !B1 * !D1 * Y)	0.00249	0.00249	0.00250
	(A1 * !A2 * B1 * !D1 * Y)	-0.00179	-0.00187	-0.00186
	(A1 * !A2 * B1 * !D1 * Y)	0.00248	0.00251	0.00249
	(!A2 * !B1 * D1 * Y)	-0.00096	-0.00096	-0.00099
	(!A2 * !B1 * D1 * Y)	0.00254	0.00255	0.00250
	(!A2 * !B1 * !D1 * Y)	-0.00112	-0.00113	-0.00112
	(!A2 * !B1 * !D1 * Y)	0.00249	0.00249	0.00249
	(!A1 * !A2 * B1 * D1 * Y)	-0.00093	-0.00094	-0.00096
	(!A1 * !A2 * B1 * D1 * Y)	0.00254	0.00255	0.00250
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00115	-0.00116	-0.00115
	(!A1 * !A2 * B1 * !D1 * Y)	0.00250	0.00250	0.00249

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00356	-0.00371	-0.00369
	(A2 * B1 * !D1 * Y)	0.00265	0.00267	0.00264
	(A2 * !B1 * D1 * Y)	-0.00182	-0.00183	-0.00188
	(A2 * !B1 * D1 * Y)	0.00276	0.00276	0.00266
	(A2 * !B1 * !D1 * Y)	-0.00210	-0.00210	-0.00209
	(A2 * !B1 * !D1 * Y)	0.00265	0.00266	0.00266
	(A1 * !A2 * B1 * !D1 * Y)	-0.00355	-0.00372	-0.00370
	(A1 * !A2 * B1 * !D1 * Y)	0.00266	0.00264	0.00264
	(!A2 * !B1 * D1 * Y)	-0.00182	-0.00183	-0.00188
	(!A2 * !B1 * D1 * Y)	0.00276	0.00276	0.00266
	(!A2 * !B1 * !D1 * Y)	-0.00210	-0.00210	-0.00209
	(!A2 * !B1 * !D1 * Y)	0.00265	0.00266	0.00266
	(!A1 * !A2 * B1 * D1 * Y)	-0.00178	-0.00179	-0.00183
	(!A1 * !A2 * B1 * D1 * Y)	0.00276	0.00276	0.00266
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00220	-0.00220	-0.00219
	(!A1 * !A2 * B1 * !D1 * Y)	0.00263	0.00267	0.00265

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00038	0.00038	0.00037
	(A2 * !C1 * Y)	-0.00148	-0.00149	-0.00150
	(A2 * !B1 * C1 * Y)	0.00039	0.00039	0.00037
	(A2 * !B1 * C1 * Y)	-0.00144	-0.00145	-0.00149
	(!A2 * !C1 * Y)	0.00038	0.00038	0.00037
	(!A2 * !C1 * Y)	-0.00147	-0.00149	-0.00150
	(!A2 * !B1 * C1 * Y)	0.00039	0.00039	0.00037
	(!A2 * !B1 * C1 * Y)	-0.00144	-0.00145	-0.00149
	(!A1 * !A2 * B1 * C1 * Y)	0.00043	0.00043	0.00038
	(!A1 * !A2 * B1 * C1 * Y)	-0.00137	-0.00138	-0.00148

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00087	0.00087	0.00083
	(A2 * !C1 * Y)	-0.00281	-0.00283	-0.00288
	(A2 * !B1 * C1 * Y)	0.00087	0.00087	0.00080
	(A2 * !B1 * C1 * Y)	-0.00273	-0.00275	-0.00286
	(!A2 * !C1 * Y)	0.00087	0.00087	0.00083
	(!A2 * !C1 * Y)	-0.00281	-0.00283	-0.00288
	(!A2 * !B1 * C1 * Y)	0.00087	0.00087	0.00080
	(!A2 * !B1 * C1 * Y)	-0.00272	-0.00275	-0.00286
	(!A1 * !A2 * B1 * C1 * Y)	0.00092	0.00092	0.00080
	(!A1 * !A2 * B1 * C1 * Y)	-0.00259	-0.00262	-0.00284
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00156	0.00156	0.00149
	(A2 * !C1 * Y)	-0.00338	-0.00340	-0.00349
	(A2 * !B1 * C1 * Y)	0.00157	0.00157	0.00144
	(A2 * !B1 * C1 * Y)	-0.00322	-0.00324	-0.00346
	(!A2 * !C1 * Y)	0.00155	0.00156	0.00149
	(!A2 * !C1 * Y)	-0.00336	-0.00339	-0.00349
	(!A2 * !B1 * C1 * Y)	0.00156	0.00157	0.00144
	(!A2 * !B1 * C1 * Y)	-0.00320	-0.00324	-0.00346
	(!A1 * !A2 * B1 * C1 * Y)	0.00167	0.00167	0.00146
	(!A1 * !A2 * B1 * C1 * Y)	-0.00296	-0.00299	-0.00341

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00036	-0.00037	-0.00036
	(A2 * !C1 * Y)	0.00149	0.00150	0.00150
	(A2 * !B1 * C1 * Y)	-0.00036	-0.00036	-0.00036
	(A2 * !B1 * C1 * Y)	0.00149	0.00150	0.00150
	(!A2 * !C1 * Y)	-0.00037	-0.00037	-0.00036
	(!A2 * !C1 * Y)	0.00150	0.00151	0.00150
	(!A2 * !B1 * C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * C1 * Y)	0.00149	0.00151	0.00150
	(!A1 * !A2 * B1 * C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * B1 * C1 * Y)	0.00149	0.00150	0.00150
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00081	-0.00081	-0.00081
	(A2 * !C1 * Y)	0.00288	0.00289	0.00288
	(A2 * !B1 * C1 * Y)	-0.00079	-0.00079	-0.00079
	(A2 * !B1 * C1 * Y)	0.00288	0.00289	0.00288
	(!A2 * !C1 * Y)	-0.00081	-0.00081	-0.00081
	(!A2 * !C1 * Y)	0.00289	0.00289	0.00288
	(!A2 * !B1 * C1 * Y)	-0.00080	-0.00079	-0.00079
	(!A2 * !B1 * C1 * Y)	0.00289	0.00289	0.00288
	(!A1 * !A2 * B1 * C1 * Y)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * B1 * C1 * Y)	0.00289	0.00289	0.00288
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00145	-0.00147	-0.00146
	(A2 * !C1 * Y)	0.00348	0.00351	0.00349
	(A2 * !B1 * C1 * Y)	-0.00142	-0.00143	-0.00142
	(A2 * !B1 * C1 * Y)	0.00347	0.00350	0.00349
	(!A2 * !C1 * Y)	-0.00146	-0.00146	-0.00146
	(!A2 * !C1 * Y)	0.00349	0.00350	0.00349
	(!A2 * !B1 * C1 * Y)	-0.00143	-0.00143	-0.00142
	(!A2 * !B1 * C1 * Y)	0.00348	0.00350	0.00349
	(!A1 * !A2 * B1 * C1 * Y)	-0.00142	-0.00142	-0.00141
	(!A1 * !A2 * B1 * C1 * Y)	0.00348	0.00349	0.00349

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111a_1	12.78720
sky130_fd_sc_hs__o2111a_2	15.98400
sky130_fd_sc_hs__o2111a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__o2111a_1	0.00241	0.00250	0.00230	0.00252	0.00255	0.35644
sky130_fd_sc_hs__o2111a_2	0.00244	0.00246	0.00243	0.00253	0.00265	0.72178
sky130_fd_sc_hs__o2111a_4	0.00464	0.00505	0.00426	0.00440	0.00450	1.38701

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	0.00017	0.00032
sky130_fd_sc_hs__o2111a_2	0.00000	0.00028	0.00053
sky130_fd_sc_hs__o2111a_4	0.00000	0.00052	0.00073

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)	0.26297	1.27165	8.98456
	A2->X (RR)	0.24368	1.24893	8.91142
	B1->X (RR)	0.25389	1.28326	8.97324
	C1->X (RR)	0.24577	1.29178	8.94986
	D1->X (RR)	0.23276	1.26646	8.73925
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.28674	1.15674	9.11432
	A2->X (RR)	0.26699	1.13414	9.05155
	B1->X (RR)	0.27872	1.17329	9.14064
	C1->X (RR)	0.26991	1.18767	9.14753
	D1->X (RR)	0.25533	1.16831	8.95811
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.32386	1.07636	9.17414
	A2->X (RR)	0.30812	1.06750	9.15085
	B1->X (RR)	0.31463	1.10049	9.24559
	C1->X (RR)	0.30544	1.13416	9.31540
	D1->X (RR)	0.28298	1.10564	9.08624

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.64876	1.48222	7.33195
	A2->X (FF)	0.61611	1.39344	6.83315
	B1->X (FF)	0.30279	1.10432	6.32709
	C1->X (FF)	0.27543	1.07404	6.22530
	D1->X (FF)	0.23616	1.03228	6.09269
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.78588	1.63156	7.72062
	A2->X (FF)	0.75290	1.54099	7.28408
	B1->X (FF)	0.31802	1.11698	6.68187
	C1->X (FF)	0.29475	1.09171	6.59496
	D1->X (FF)	0.25946	1.05383	6.47404
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.86194	1.67973	7.81020
	A2->X (FF)	0.83401	1.59281	7.45310
	B1->X (FF)	0.39588	1.16193	6.78016
	C1->X (FF)	0.36654	1.13020	6.68726
	D1->X (FF)	0.32193	1.08518	6.55442

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.00848	0.00853	0.00851
	A1	0.00329	0.00333	0.00333
	A2	0.00765	0.00766	0.00761
	A2	0.00291	0.00291	0.00288
	B1	0.00769	0.00773	0.00769
	B1	0.00348	0.00351	0.00350
	C1	0.00720	0.00722	0.00718
	C1	0.00348	0.00348	0.00347
	D1	0.00671	0.00666	0.00659
	D1	0.00347	0.00342	0.00337
sky130_fd_sc_hs__o2111a_2	A1	0.01045	0.01066	0.01073
	A1	0.00525	0.00547	0.00558
	A2	0.00958	0.00977	0.00980
	A2	0.00488	0.00507	0.00515
	B1	0.00967	0.00984	0.00990
	B1	0.00532	0.00549	0.00562
	C1	0.00914	0.00928	0.00934
	C1	0.00532	0.00545	0.00557
	D1	0.00866	0.00872	0.00874
	D1	0.00530	0.00536	0.00542

sky130_fd_sc_hs__o2111a_4	**A1**	0.02138	0.02174	0.02181
	A1	0.01083	0.01117	0.01137
	A2	0.01998	0.02033	0.02045
	A2	0.01007	0.01041	0.01065
	B1	0.01980	0.02011	0.02025
	B1	0.01119	0.01149	0.01174
	C1	0.01874	0.01900	0.01914
	C1	0.01118	0.01144	0.01169
	D1	0.01754	0.01767	0.01778
	D1	0.01115	0.01131	0.01147

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00335	0.00340	0.00407
	A1	0.00833	0.00840	0.00831
	A2	0.00338	0.00339	0.00413
	A2	0.00791	0.00792	0.00783
	B1	0.00284	0.00275	0.00272
	B1	0.00696	0.00688	0.00681
	C1	0.00253	0.00241	0.00241
	C1	0.00625	0.00611	0.00606
	D1	0.00218	0.00201	0.00198
	D1	0.00545	0.00526	0.00522

sky130_fd_sc_hs__o2111a_2	**A1**	0.00491	0.00519	0.00535
	A1	0.00991	0.01020	0.01017
	A2	0.00499	0.00522	0.00560
	A2	0.00946	0.00969	0.00966
	B1	0.00445	0.00444	0.00503
	B1	0.00871	0.00883	0.00880
	C1	0.00414	0.00415	0.00422
	C1	0.00796	0.00802	0.00800
	D1	0.00373	0.00373	0.00399
	D1	0.00712	0.00711	0.00709
sky130_fd_sc_hs__o2111a_4	**A1**	0.00952	0.00996	0.01016
	A1	0.01967	0.02010	0.02011
	A2	0.00955	0.00982	0.00989
	A2	0.01900	0.01927	0.01924
	B1	0.00856	0.00879	0.00971
	B1	0.01706	0.01735	0.01734
	C1	0.00800	0.00797	0.00989
	C1	0.01552	0.01566	0.01569
	D1	0.00693	0.00667	0.00902
	D1	0.01339	0.01349	0.01358

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)**	0.00105	0.00106	0.00105
	(A2 * B1 * C1 * D1 * X)	-0.00108	-0.00110	-0.00110
	(A2 * B1 * C1 * !D1 * !X)	0.00105	0.00106	0.00105
	(A2 * B1 * C1 * !D1 * !X)	-0.00109	-0.00110	-0.00110
	(A2 * B1 * !C1 * !X)	0.00105	0.00106	0.00105
	(A2 * B1 * !C1 * !X)	-0.00109	-0.00110	-0.00110
	(A2 * !B1 * !X)	0.00106	0.00106	0.00105
	(A2 * !B1 * !X)	-0.00109	-0.00110	-0.00110
	(!A2 * B1 * C1 * !D1 * !X)	0.00095	0.00096	0.00095
	(!A2 * B1 * C1 * !D1 * !X)	-0.00112	-0.00113	-0.00113
	(!A2 * B1 * !C1 * D1 * !X)	0.00096	0.00097	0.00097
	(!A2 * B1 * !C1 * D1 * !X)	-0.00112	-0.00113	-0.00113
	(!A2 * B1 * !C1 * !D1 * !X)	0.00096	0.00097	0.00097
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00112	-0.00113	-0.00113
	(!A2 * !B1 * C1 * D1 * !X)	0.00099	0.00099	0.00099
	(!A2 * !B1 * C1 * D1 * !X)	-0.00112	-0.00113	-0.00113
	(!A2 * !B1 * !D1 * !X)	0.00099	0.00099	0.00099
	(!A2 * !B1 * !D1 * !X)	-0.00112	-0.00112	-0.00113
	(!A2 * !B1 * !C1 * D1 * !X)	0.00099	0.00099	0.00098
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00112	-0.00113	-0.00113

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00109	0.00110	0.00109
	(A2 * B1 * C1 * D1 * X)	-0.00107	-0.00109	-0.00109
	(A2 * B1 * C1 * !D1 * !X)	0.00110	0.00110	0.00109
	(A2 * B1 * C1 * !D1 * !X)	-0.00108	-0.00109	-0.00109
	(A2 * B1 * !C1 * !X)	0.00110	0.00110	0.00109
	(A2 * B1 * !C1 * !X)	-0.00108	-0.00109	-0.00109
	(A2 * !B1 * !X)	0.00110	0.00110	0.00109
	(A2 * !B1 * !X)	-0.00108	-0.00109	-0.00109
	(!A2 * B1 * C1 * !D1 * !X)	0.00100	0.00100	0.00100
	(!A2 * B1 * C1 * !D1 * !X)	-0.00111	-0.00112	-0.00111
	(!A2 * B1 * !C1 * D1 * !X)	0.00101	0.00102	0.00101
	(!A2 * B1 * !C1 * D1 * !X)	-0.00111	-0.00112	-0.00111
	(!A2 * B1 * !C1 * !D1 * !X)	0.00101	0.00102	0.00101
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * C1 * D1 * !X)	0.00104	0.00104	0.00103
	(!A2 * !B1 * C1 * D1 * !X)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * !D1 * !X)	0.00104	0.00104	0.00103
	(!A2 * !B1 * !D1 * !X)	-0.00111	-0.00112	-0.00111
	(!A2 * !B1 * !C1 * D1 * !X)	0.00104	0.00104	0.00103
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00111	-0.00112	-0.00111

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00211	0.00213	0.00211
	(A2 * B1 * C1 * D1 * X)	-0.00207	-0.00216	-0.00213
	(A2 * B1 * C1 * !D1 * !X)	0.00193	0.00196	0.00194
	(A2 * B1 * C1 * !D1 * !X)	-0.00226	-0.00233	-0.00231
	(A2 * B1 * !C1 * !X)	0.00193	0.00196	0.00194
	(A2 * B1 * !C1 * !X)	-0.00226	-0.00233	-0.00231
	(A2 * !B1 * !X)	0.00193	0.00196	0.00194
	(A2 * !B1 * !X)	-0.00226	-0.00233	-0.00231
	(!A2 * B1 * C1 * !D1 * !X)	0.00175	0.00177	0.00176
	(!A2 * B1 * C1 * !D1 * !X)	-0.00236	-0.00237	-0.00236
	(!A2 * B1 * !C1 * D1 * !X)	0.00177	0.00178	0.00177
	(!A2 * B1 * !C1 * D1 * !X)	-0.00236	-0.00237	-0.00236
	(!A2 * B1 * !C1 * !D1 * !X)	0.00177	0.00178	0.00177
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00236	-0.00237	-0.00236
	(!A2 * !B1 * C1 * D1 * !X)	0.00180	0.00183	0.00181
	(!A2 * !B1 * C1 * D1 * !X)	-0.00235	-0.00237	-0.00236
	(!A2 * !B1 * !D1 * !X)	0.00181	0.00183	0.00181
	(!A2 * !B1 * !D1 * !X)	-0.00236	-0.00237	-0.00236
	(!A2 * !B1 * !C1 * D1 * !X)	0.00181	0.00183	0.00181
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00236	-0.00237	-0.00236

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)**	-0.00105	-0.00105	-0.00105
	(A2 * B1 * C1 * D1 * X)	0.00111	0.00110	0.00110
	(A2 * B1 * C1 * !D1 * !X)	-0.00105	-0.00105	-0.00105
	(A2 * B1 * C1 * !D1 * !X)	0.00111	0.00110	0.00110
	(A2 * B1 * !C1 * !X)	-0.00105	-0.00105	-0.00105
	(A2 * B1 * !C1 * !X)	0.00111	0.00110	0.00110
	(A2 * !B1 * !X)	-0.00105	-0.00105	-0.00105
	(A2 * !B1 * !X)	0.00110	0.00110	0.00110
	(!A2 * B1 * C1 * !D1 * !X)	-0.00090	-0.00096	-0.00095
	(!A2 * B1 * C1 * !D1 * !X)	0.00112	0.00113	0.00113
	(!A2 * B1 * !C1 * D1 * !X)	-0.00092	-0.00097	-0.00097
	(!A2 * B1 * !C1 * D1 * !X)	0.00113	0.00113	0.00113
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00092	-0.00097	-0.00097
	(!A2 * B1 * !C1 * !D1 * !X)	0.00113	0.00113	0.00113
	(!A2 * !B1 * C1 * D1 * !X)	-0.00096	-0.00099	-0.00099
	(!A2 * !B1 * C1 * D1 * !X)	0.00112	0.00113	0.00113
	(!A2 * !B1 * !D1 * !X)	-0.00096	-0.00099	-0.00099
	(!A2 * !B1 * !D1 * !X)	0.00112	0.00114	0.00113
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00096	-0.00099	-0.00098
	(!A2 * !B1 * !C1 * D1 * !X)	0.00112	0.00114	0.00113

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00109	-0.00109	-0.00109
	(A2 * B1 * C1 * D1 * X)	0.00110	0.00109	0.00109
	(A2 * B1 * C1 * !D1 * !X)	-0.00109	-0.00109	-0.00109
	(A2 * B1 * C1 * !D1 * !X)	0.00110	0.00109	0.00109
	(A2 * B1 * !C1 * !X)	-0.00109	-0.00109	-0.00109
	(A2 * B1 * !C1 * !X)	0.00110	0.00109	0.00109
	(A2 * !B1 * !X)	-0.00109	-0.00109	-0.00109
	(A2 * !B1 * !X)	0.00110	0.00109	0.00109
	(!A2 * B1 * C1 * !D1 * !X)	-0.00094	-0.00100	-0.00100
	(!A2 * B1 * C1 * !D1 * !X)	0.00111	0.00112	0.00112
	(!A2 * B1 * !C1 * D1 * !X)	-0.00096	-0.00102	-0.00101
	(!A2 * B1 * !C1 * D1 * !X)	0.00112	0.00112	0.00112
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00096	-0.00102	-0.00101
	(!A2 * B1 * !C1 * !D1 * !X)	0.00112	0.00112	0.00112
	(!A2 * !B1 * C1 * D1 * !X)	-0.00100	-0.00104	-0.00103
	(!A2 * !B1 * C1 * D1 * !X)	0.00111	0.00112	0.00112
	(!A2 * !B1 * !D1 * !X)	-0.00100	-0.00104	-0.00103
	(!A2 * !B1 * !D1 * !X)	0.00111	0.00112	0.00112
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00100	-0.00104	-0.00103
	(!A2 * !B1 * !C1 * D1 * !X)	0.00111	0.00112	0.00112

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00211	-0.00212	-0.00211
	(A2 * B1 * C1 * D1 * X)	0.00213	0.00216	0.00213
	(A2 * B1 * C1 * !D1 * !X)	-0.00193	-0.00195	-0.00193
	(A2 * B1 * C1 * !D1 * !X)	0.00230	0.00233	0.00231
	(A2 * B1 * !C1 * !X)	-0.00193	-0.00195	-0.00193
	(A2 * B1 * !C1 * !X)	0.00232	0.00233	0.00231
	(A2 * !B1 * !X)	-0.00193	-0.00195	-0.00193
	(A2 * !B1 * !X)	0.00230	0.00233	0.00231
	(!A2 * B1 * C1 * !D1 * !X)	-0.00169	-0.00177	-0.00176
	(!A2 * B1 * C1 * !D1 * !X)	0.00237	0.00238	0.00236
	(!A2 * B1 * !C1 * D1 * !X)	-0.00171	-0.00178	-0.00177
	(!A2 * B1 * !C1 * D1 * !X)	0.00237	0.00238	0.00236
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00171	-0.00178	-0.00177
	(!A2 * B1 * !C1 * !D1 * !X)	0.00237	0.00238	0.00236
	(!A2 * !B1 * C1 * D1 * !X)	-0.00177	-0.00183	-0.00181
	(!A2 * !B1 * C1 * D1 * !X)	0.00236	0.00237	0.00237
	(!A2 * !B1 * !D1 * !X)	-0.00177	-0.00183	-0.00181
	(!A2 * !B1 * !D1 * !X)	0.00236	0.00237	0.00237
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00177	-0.00183	-0.00181
	(!A2 * !B1 * !C1 * D1 * !X)	0.00236	0.00237	0.00237

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)**	0.00111	0.00110	0.00110
	(A1 * B1 * C1 * D1 * X)	-0.00069	-0.00068	-0.00068
	(A1 * B1 * C1 * !D1 * !X)	0.00100	0.00100	0.00100
	(A1 * B1 * C1 * !D1 * !X)	-0.00106	-0.00108	-0.00108
	(A1 * B1 * !C1 * D1 * !X)	0.00100	0.00100	0.00100
	(A1 * B1 * !C1 * D1 * !X)	-0.00106	-0.00108	-0.00108
	(A1 * B1 * !C1 * !D1 * !X)	0.00100	0.00100	0.00100
	(A1 * B1 * !C1 * !D1 * !X)	-0.00106	-0.00108	-0.00108
	(A1 * !B1 * C1 * D1 * !X)	0.00100	0.00100	0.00100
	(A1 * !B1 * C1 * D1 * !X)	-0.00106	-0.00109	-0.00108
	(A1 * !B1 * !D1 * !X)	0.00100	0.00100	0.00100
	(A1 * !B1 * !D1 * !X)	-0.00106	-0.00108	-0.00108
	(A1 * !B1 * !C1 * D1 * !X)	0.00100	0.00100	0.00100
	(A1 * !B1 * !C1 * D1 * !X)	-0.00106	-0.00108	-0.00108
	(!A1 * B1 * C1 * !D1 * !X)	0.00090	0.00091	0.00090
	(!A1 * B1 * C1 * !D1 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * B1 * !C1 * D1 * !X)	0.00091	0.00092	0.00091
	(!A1 * B1 * !C1 * D1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * B1 * !C1 * !D1 * !X)	0.00091	0.00092	0.00091
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !B1 * C1 * D1 * !X)	0.00094	0.00095	0.00094
	(!A1 * !B1 * C1 * D1 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * !B1 * !D1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !B1 * !D1 * !X)	-0.00110	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * D1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00110	-0.00111	-0.00111

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00111	0.00110	0.00110
	(A1 * B1 * C1 * D1 * X)	-0.00067	-0.00066	-0.00066
	(A1 * B1 * C1 * !D1 * !X)	0.00100	0.00100	0.00100
	(A1 * B1 * C1 * !D1 * !X)	-0.00104	-0.00105	-0.00106
	(A1 * B1 * !C1 * D1 * !X)	0.00100	0.00100	0.00100
	(A1 * B1 * !C1 * D1 * !X)	-0.00104	-0.00105	-0.00106
	(A1 * B1 * !C1 * !D1 * !X)	0.00101	0.00100	0.00100
	(A1 * B1 * !C1 * !D1 * !X)	-0.00104	-0.00106	-0.00106
	(A1 * !B1 * C1 * D1 * !X)	0.00100	0.00100	0.00100
	(A1 * !B1 * C1 * D1 * !X)	-0.00104	-0.00105	-0.00106
	(A1 * !B1 * !D1 * !X)	0.00100	0.00100	0.00100
	(A1 * !B1 * !D1 * !X)	-0.00104	-0.00106	-0.00106
	(A1 * !B1 * !C1 * D1 * !X)	0.00100	0.00100	0.00100
	(A1 * !B1 * !C1 * D1 * !X)	-0.00104	-0.00106	-0.00106
	(!A1 * B1 * C1 * !D1 * !X)	0.00091	0.00092	0.00091
	(!A1 * B1 * C1 * !D1 * !X)	-0.00108	-0.00108	-0.00108
	(!A1 * B1 * !C1 * D1 * !X)	0.00092	0.00093	0.00092
	(!A1 * B1 * !C1 * D1 * !X)	-0.00108	-0.00108	-0.00108
	(!A1 * B1 * !C1 * !D1 * !X)	0.00092	0.00093	0.00092
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00108	-0.00108	-0.00108
	(!A1 * !B1 * C1 * D1 * !X)	0.00095	0.00095	0.00095
	(!A1 * !B1 * C1 * D1 * !X)	-0.00107	-0.00108	-0.00108
	(!A1 * !B1 * !D1 * !X)	0.00095	0.00095	0.00095
	(!A1 * !B1 * !D1 * !X)	-0.00108	-0.00108	-0.00108
	(!A1 * !B1 * !C1 * D1 * !X)	0.00095	0.00095	0.00095
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00107	-0.00108	-0.00108

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00245	0.00242	0.00242
	(A1 * B1 * C1 * D1 * X)	-0.00138	-0.00135	-0.00135
	(A1 * B1 * C1 * !D1 * !X)	0.00204	0.00207	0.00204
	(A1 * B1 * C1 * !D1 * !X)	-0.00229	-0.00234	-0.00232
	(A1 * B1 * !C1 * D1 * !X)	0.00204	0.00207	0.00204
	(A1 * B1 * !C1 * D1 * !X)	-0.00229	-0.00234	-0.00232
	(A1 * B1 * !C1 * !D1 * !X)	0.00204	0.00205	0.00204
	(A1 * B1 * !C1 * !D1 * !X)	-0.00229	-0.00234	-0.00232
	(A1 * !B1 * C1 * D1 * !X)	0.00204	0.00207	0.00204
	(A1 * !B1 * C1 * D1 * !X)	-0.00229	-0.00234	-0.00232
	(A1 * !B1 * !D1 * !X)	0.00204	0.00205	0.00204
	(A1 * !B1 * !D1 * !X)	-0.00229	-0.00234	-0.00232
	(A1 * !B1 * !C1 * D1 * !X)	0.00204	0.00205	0.00204
	(A1 * !B1 * !C1 * D1 * !X)	-0.00229	-0.00234	-0.00232
	(!A1 * B1 * C1 * !D1 * !X)	0.00183	0.00186	0.00184
	(!A1 * B1 * C1 * !D1 * !X)	-0.00238	-0.00239	-0.00238
	(!A1 * B1 * !C1 * D1 * !X)	0.00185	0.00187	0.00185
	(!A1 * B1 * !C1 * D1 * !X)	-0.00238	-0.00239	-0.00238
	(!A1 * B1 * !C1 * !D1 * !X)	0.00185	0.00187	0.00185
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00238	-0.00239	-0.00238
	(!A1 * !B1 * C1 * D1 * !X)	0.00189	0.00191	0.00189
	(!A1 * !B1 * C1 * D1 * !X)	-0.00238	-0.00239	-0.00238
	(!A1 * !B1 * !D1 * !X)	0.00190	0.00192	0.00190
	(!A1 * !B1 * !D1 * !X)	-0.00238	-0.00239	-0.00238
	(!A1 * !B1 * !C1 * D1 * !X)	0.00190	0.00192	0.00190
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00238	-0.00239	-0.00238

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)**	-0.00107	-0.00107	-0.00110
	(A1 * B1 * C1 * D1 * X)	0.00071	0.00071	0.00069
	(A1 * B1 * C1 * !D1 * !X)	-0.00100	-0.00099	-0.00099
	(A1 * B1 * C1 * !D1 * !X)	0.00109	0.00108	0.00108
	(A1 * B1 * !C1 * D1 * !X)	-0.00100	-0.00099	-0.00099
	(A1 * B1 * !C1 * D1 * !X)	0.00109	0.00108	0.00108
	(A1 * B1 * !C1 * !D1 * !X)	-0.00100	-0.00099	-0.00099
	(A1 * B1 * !C1 * !D1 * !X)	0.00108	0.00108	0.00108
	(A1 * !B1 * C1 * D1 * !X)	-0.00100	-0.00100	-0.00099
	(A1 * !B1 * C1 * D1 * !X)	0.00109	0.00109	0.00108
	(A1 * !B1 * !D1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !B1 * !D1 * !X)	0.00108	0.00108	0.00108
	(A1 * !B1 * !C1 * D1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !B1 * !C1 * D1 * !X)	0.00108	0.00108	0.00108
	(!A1 * B1 * C1 * !D1 * !X)	-0.00084	-0.00091	-0.00090
	(!A1 * B1 * C1 * !D1 * !X)	0.00110	0.00111	0.00111
	(!A1 * B1 * !C1 * D1 * !X)	-0.00087	-0.00092	-0.00091
	(!A1 * B1 * !C1 * D1 * !X)	0.00111	0.00111	0.00111
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00087	-0.00092	-0.00091
	(!A1 * B1 * !C1 * !D1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !B1 * C1 * D1 * !X)	-0.00091	-0.00094	-0.00094
	(!A1 * !B1 * C1 * D1 * !X)	0.00110	0.00111	0.00111
	(!A1 * !B1 * !D1 * !X)	-0.00091	-0.00094	-0.00094
	(!A1 * !B1 * !D1 * !X)	0.00110	0.00111	0.00111
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00091	-0.00094	-0.00094
	(!A1 * !B1 * !C1 * D1 * !X)	0.00110	0.00111	0.00111

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00107	-0.00107	-0.00110
	(A1 * B1 * C1 * D1 * X)	0.00069	0.00069	0.00067
	(A1 * B1 * C1 * !D1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * B1 * C1 * !D1 * !X)	0.00106	0.00105	0.00106
	(A1 * B1 * !C1 * D1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * B1 * !C1 * D1 * !X)	0.00106	0.00105	0.00106
	(A1 * B1 * !C1 * !D1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * B1 * !C1 * !D1 * !X)	0.00106	0.00106	0.00106
	(A1 * !B1 * C1 * D1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * !B1 * C1 * D1 * !X)	0.00106	0.00105	0.00106
	(A1 * !B1 * !D1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * !B1 * !D1 * !X)	0.00106	0.00106	0.00106
	(A1 * !B1 * !C1 * D1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * !B1 * !C1 * D1 * !X)	0.00106	0.00106	0.00106
	(!A1 * B1 * C1 * !D1 * !X)	-0.00086	-0.00092	-0.00091
	(!A1 * B1 * C1 * !D1 * !X)	0.00108	0.00108	0.00108
	(!A1 * B1 * !C1 * D1 * !X)	-0.00088	-0.00093	-0.00092
	(!A1 * B1 * !C1 * D1 * !X)	0.00108	0.00108	0.00108
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00088	-0.00093	-0.00092
	(!A1 * B1 * !C1 * !D1 * !X)	0.00109	0.00108	0.00108
	(!A1 * !B1 * C1 * D1 * !X)	-0.00091	-0.00095	-0.00095
	(!A1 * !B1 * C1 * D1 * !X)	0.00107	0.00108	0.00108
	(!A1 * !B1 * !D1 * !X)	-0.00091	-0.00095	-0.00095
	(!A1 * !B1 * !D1 * !X)	0.00108	0.00108	0.00108
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00091	-0.00095	-0.00095
	(!A1 * !B1 * !C1 * D1 * !X)	0.00107	0.00108	0.00108

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00235	-0.00235	-0.00242
	(A1 * B1 * C1 * D1 * X)	0.00142	0.00142	0.00137
	(A1 * B1 * C1 * !D1 * !X)	-0.00204	-0.00205	-0.00204
	(A1 * B1 * C1 * !D1 * !X)	0.00234	0.00234	0.00232
	(A1 * B1 * !C1 * D1 * !X)	-0.00204	-0.00205	-0.00204
	(A1 * B1 * !C1 * D1 * !X)	0.00232	0.00234	0.00232
	(A1 * B1 * !C1 * !D1 * !X)	-0.00204	-0.00205	-0.00204
	(A1 * B1 * !C1 * !D1 * !X)	0.00232	0.00234	0.00232
	(A1 * !B1 * C1 * D1 * !X)	-0.00204	-0.00205	-0.00204
	(A1 * !B1 * C1 * D1 * !X)	0.00232	0.00234	0.00232
	(A1 * !B1 * !D1 * !X)	-0.00203	-0.00205	-0.00204
	(A1 * !B1 * !D1 * !X)	0.00232	0.00234	0.00232
	(A1 * !B1 * !C1 * D1 * !X)	-0.00203	-0.00205	-0.00204
	(A1 * !B1 * !C1 * D1 * !X)	0.00232	0.00234	0.00232
	(!A1 * B1 * C1 * !D1 * !X)	-0.00173	-0.00186	-0.00184
	(!A1 * B1 * C1 * !D1 * !X)	0.00239	0.00239	0.00238
	(!A1 * B1 * !C1 * D1 * !X)	-0.00176	-0.00187	-0.00185
	(!A1 * B1 * !C1 * D1 * !X)	0.00239	0.00239	0.00238
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00176	-0.00187	-0.00185
	(!A1 * B1 * !C1 * !D1 * !X)	0.00239	0.00239	0.00238
	(!A1 * !B1 * C1 * D1 * !X)	-0.00183	-0.00191	-0.00189
	(!A1 * !B1 * C1 * D1 * !X)	0.00238	0.00239	0.00238
	(!A1 * !B1 * !D1 * !X)	-0.00183	-0.00191	-0.00190
	(!A1 * !B1 * !D1 * !X)	0.00238	0.00239	0.00238
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00184	-0.00191	-0.00190
	(!A1 * !B1 * !C1 * D1 * !X)	0.00238	0.00239	0.00238

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)**	0.00088	0.00088	0.00088
	(A2 * C1 * !D1 * !X)	-0.00096	-0.00096	-0.00096
	(A2 * !C1 * D1 * !X)	0.00090	0.00091	0.00090
	(A2 * !C1 * D1 * !X)	-0.00096	-0.00096	-0.00096
	(A2 * !C1 * !D1 * !X)	0.00090	0.00091	0.00090
	(A2 * !C1 * !D1 * !X)	-0.00095	-0.00096	-0.00096
	(A1 * !A2 * C1 * !D1 * !X)	0.00087	0.00088	0.00088
	(A1 * !A2 * C1 * !D1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * !A2 * !C1 * D1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A2 * !C1 * D1 * !X)	-0.00095	-0.00096	-0.00096
	(A1 * !A2 * !C1 * !D1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00095	-0.00096	-0.00096
	(!A1 * !A2 * C1 * D1 * !X)	0.00049	0.00050	0.00049
	(!A1 * !A2 * C1 * D1 * !X)	-0.00093	-0.00094	-0.00093
	(!A1 * !A2 * C1 * !D1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00096	-0.00096	-0.00096
	(!A1 * !A2 * !C1 * D1 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00096	-0.00096	-0.00096
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00058	0.00057	0.00057
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00096	-0.00096	-0.00096

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00090	0.00091	0.00091
	(A2 * C1 * !D1 * !X)	-0.00111	-0.00111	-0.00111
	(A2 * !C1 * D1 * !X)	0.00092	0.00093	0.00093
	(A2 * !C1 * D1 * !X)	-0.00111	-0.00111	-0.00111
	(A2 * !C1 * !D1 * !X)	0.00093	0.00093	0.00093
	(A2 * !C1 * !D1 * !X)	-0.00111	-0.00111	-0.00111
	(A1 * !A2 * C1 * !D1 * !X)	0.00090	0.00091	0.00091
	(A1 * !A2 * C1 * !D1 * !X)	-0.00110	-0.00111	-0.00111
	(A1 * !A2 * !C1 * D1 * !X)	0.00093	0.00093	0.00093
	(A1 * !A2 * !C1 * D1 * !X)	-0.00111	-0.00111	-0.00111
	(A1 * !A2 * !C1 * !D1 * !X)	0.00093	0.00093	0.00093
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * C1 * D1 * !X)	0.00053	0.00053	0.00052
	(!A1 * !A2 * C1 * D1 * !X)	-0.00108	-0.00108	-0.00107
	(!A1 * !A2 * C1 * !D1 * !X)	0.00057	0.00057	0.00057
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * !C1 * D1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00111	-0.00111	-0.00111
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00061	0.00061	0.00060
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00111	-0.00111	-0.00111

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00177	0.00179	0.00178
	(A2 * C1 * !D1 * !X)	-0.00188	-0.00190	-0.00189
	(A2 * !C1 * D1 * !X)	0.00181	0.00183	0.00182
	(A2 * !C1 * D1 * !X)	-0.00188	-0.00190	-0.00189
	(A2 * !C1 * !D1 * !X)	0.00181	0.00183	0.00182
	(A2 * !C1 * !D1 * !X)	-0.00188	-0.00190	-0.00189
	(A1 * !A2 * C1 * !D1 * !X)	0.00177	0.00178	0.00177
	(A1 * !A2 * C1 * !D1 * !X)	-0.00189	-0.00190	-0.00189
	(A1 * !A2 * !C1 * D1 * !X)	0.00181	0.00183	0.00181
	(A1 * !A2 * !C1 * D1 * !X)	-0.00189	-0.00190	-0.00189
	(A1 * !A2 * !C1 * !D1 * !X)	0.00181	0.00183	0.00181
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00189	-0.00190	-0.00189
	(!A1 * !A2 * C1 * D1 * !X)	0.00098	0.00098	0.00098
	(!A1 * !A2 * C1 * D1 * !X)	-0.00183	-0.00184	-0.00182
	(!A1 * !A2 * C1 * !D1 * !X)	0.00107	0.00108	0.00108
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00189	-0.00190	-0.00190
	(!A1 * !A2 * !C1 * D1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00189	-0.00190	-0.00189
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00112	0.00112	0.00112
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00189	-0.00190	-0.00189

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)**	-0.00083	-0.00088	-0.00088
	(A2 * C1 * !D1 * !X)	0.00096	0.00097	0.00096
	(A2 * !C1 * D1 * !X)	-0.00088	-0.00091	-0.00090
	(A2 * !C1 * D1 * !X)	0.00096	0.00097	0.00096
	(A2 * !C1 * !D1 * !X)	-0.00088	-0.00091	-0.00090
	(A2 * !C1 * !D1 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * C1 * !D1 * !X)	-0.00082	-0.00088	-0.00088
	(A1 * !A2 * C1 * !D1 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * !C1 * D1 * !X)	-0.00087	-0.00091	-0.00090
	(A1 * !A2 * !C1 * D1 * !X)	0.00095	0.00097	0.00096
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00087	-0.00091	-0.00090
	(A1 * !A2 * !C1 * !D1 * !X)	0.00095	0.00097	0.00096
	(!A1 * !A2 * C1 * D1 * !X)	-0.00047	-0.00046	-0.00046
	(!A1 * !A2 * C1 * D1 * !X)	0.00099	0.00098	0.00097
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * C1 * !D1 * !X)	0.00096	0.00096	0.00096
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00056	-0.00056	-0.00056
	(!A1 * !A2 * !C1 * D1 * !X)	0.00096	0.00096	0.00096
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00058	-0.00057	-0.00057
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00096	0.00096	0.00096

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00086	-0.00091	-0.00091
	(A2 * C1 * !D1 * !X)	0.00111	0.00112	0.00111
	(A2 * !C1 * D1 * !X)	-0.00091	-0.00093	-0.00093
	(A2 * !C1 * D1 * !X)	0.00111	0.00112	0.00111
	(A2 * !C1 * !D1 * !X)	-0.00091	-0.00093	-0.00093
	(A2 * !C1 * !D1 * !X)	0.00111	0.00112	0.00111
	(A1 * !A2 * C1 * !D1 * !X)	-0.00085	-0.00091	-0.00091
	(A1 * !A2 * C1 * !D1 * !X)	0.00111	0.00112	0.00111
	(A1 * !A2 * !C1 * D1 * !X)	-0.00091	-0.00093	-0.00093
	(A1 * !A2 * !C1 * D1 * !X)	0.00112	0.00112	0.00111
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00091	-0.00093	-0.00093
	(A1 * !A2 * !C1 * !D1 * !X)	0.00112	0.00112	0.00111
	(!A1 * !A2 * C1 * D1 * !X)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * C1 * D1 * !X)	0.00113	0.00112	0.00112
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * C1 * !D1 * !X)	0.00112	0.00111	0.00111
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * !C1 * D1 * !X)	0.00111	0.00111	0.00111
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00061	-0.00061	-0.00060
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00111	0.00111	0.00111

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00169	-0.00179	-0.00178
	(A2 * C1 * !D1 * !X)	0.00189	0.00190	0.00189
	(A2 * !C1 * D1 * !X)	-0.00177	-0.00183	-0.00182
	(A2 * !C1 * D1 * !X)	0.00188	0.00191	0.00189
	(A2 * !C1 * !D1 * !X)	-0.00177	-0.00183	-0.00182
	(A2 * !C1 * !D1 * !X)	0.00188	0.00191	0.00189
	(A1 * !A2 * C1 * !D1 * !X)	-0.00168	-0.00178	-0.00177
	(A1 * !A2 * C1 * !D1 * !X)	0.00190	0.00191	0.00189
	(A1 * !A2 * !C1 * D1 * !X)	-0.00177	-0.00183	-0.00181
	(A1 * !A2 * !C1 * D1 * !X)	0.00190	0.00191	0.00189
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00177	-0.00183	-0.00181
	(A1 * !A2 * !C1 * !D1 * !X)	0.00190	0.00191	0.00189
	(!A1 * !A2 * C1 * D1 * !X)	-0.00093	-0.00091	-0.00091
	(!A1 * !A2 * C1 * D1 * !X)	0.00194	0.00191	0.00190
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00107	-0.00108	-0.00108
	(!A1 * !A2 * C1 * !D1 * !X)	0.00190	0.00190	0.00190
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00109	-0.00110	-0.00109
	(!A1 * !A2 * !C1 * D1 * !X)	0.00190	0.00190	0.00190
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00112	-0.00112	-0.00112
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00189	0.00190	0.00190

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)**	0.00090	0.00091	0.00090
	(A2 * B1 * !D1 * !X)	-0.00102	-0.00103	-0.00102
	(A2 * !B1 * D1 * !X)	0.00046	0.00046	0.00046
	(A2 * !B1 * D1 * !X)	-0.00102	-0.00102	-0.00102
	(A2 * !B1 * !D1 * !X)	0.00049	0.00049	0.00049
	(A2 * !B1 * !D1 * !X)	-0.00102	-0.00102	-0.00102
	(A1 * !A2 * B1 * !D1 * !X)	0.00090	0.00091	0.00090
	(A1 * !A2 * B1 * !D1 * !X)	-0.00102	-0.00103	-0.00102
	(!A2 * !B1 * D1 * !X)	0.00046	0.00046	0.00046
	(!A2 * !B1 * D1 * !X)	-0.00102	-0.00102	-0.00102
	(!A2 * !B1 * !D1 * !X)	0.00049	0.00049	0.00049
	(!A2 * !B1 * !D1 * !X)	-0.00102	-0.00102	-0.00102
	(!A1 * !A2 * B1 * D1 * !X)	0.00047	0.00047	0.00046
	(!A1 * !A2 * B1 * D1 * !X)	-0.00102	-0.00102	-0.00101
	(!A1 * !A2 * B1 * !D1 * !X)	0.00055	0.00055	0.00054
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00102	-0.00102	-0.00102

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00091	0.00092	0.00091
	(A2 * B1 * !D1 * !X)	-0.00115	-0.00115	-0.00115
	(A2 * !B1 * D1 * !X)	0.00049	0.00049	0.00049
	(A2 * !B1 * D1 * !X)	-0.00115	-0.00115	-0.00114
	(A2 * !B1 * !D1 * !X)	0.00053	0.00053	0.00053
	(A2 * !B1 * !D1 * !X)	-0.00115	-0.00115	-0.00115
	(A1 * !A2 * B1 * !D1 * !X)	0.00091	0.00092	0.00091
	(A1 * !A2 * B1 * !D1 * !X)	-0.00115	-0.00115	-0.00115
	(!A2 * !B1 * D1 * !X)	0.00049	0.00049	0.00049
	(!A2 * !B1 * D1 * !X)	-0.00115	-0.00115	-0.00114
	(!A2 * !B1 * !D1 * !X)	0.00053	0.00053	0.00053
	(!A2 * !B1 * !D1 * !X)	-0.00115	-0.00115	-0.00115
	(!A1 * !A2 * B1 * D1 * !X)	0.00048	0.00048	0.00048
	(!A1 * !A2 * B1 * D1 * !X)	-0.00115	-0.00115	-0.00114
	(!A1 * !A2 * B1 * !D1 * !X)	0.00057	0.00058	0.00057
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00115	-0.00115	-0.00115

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00188	0.00189	0.00188
	(A2 * B1 * !D1 * !X)	-0.00195	-0.00195	-0.00194
	(A2 * !B1 * D1 * !X)	0.00100	0.00100	0.00101
	(A2 * !B1 * D1 * !X)	-0.00193	-0.00195	-0.00194
	(A2 * !B1 * !D1 * !X)	0.00108	0.00109	0.00109
	(A2 * !B1 * !D1 * !X)	-0.00194	-0.00195	-0.00195
	(A1 * !A2 * B1 * !D1 * !X)	0.00186	0.00188	0.00188
	(A1 * !A2 * B1 * !D1 * !X)	-0.00193	-0.00195	-0.00194
	(!A2 * !B1 * D1 * !X)	0.00100	0.00100	0.00101
	(!A2 * !B1 * D1 * !X)	-0.00194	-0.00195	-0.00194
	(!A2 * !B1 * !D1 * !X)	0.00109	0.00109	0.00109
	(!A2 * !B1 * !D1 * !X)	-0.00195	-0.00195	-0.00195
	(!A1 * !A2 * B1 * D1 * !X)	0.00095	0.00096	0.00098
	(!A1 * !A2 * B1 * D1 * !X)	-0.00193	-0.00194	-0.00192
	(!A1 * !A2 * B1 * !D1 * !X)	0.00114	0.00116	0.00114
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00195	-0.00196	-0.00195

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)**	-0.00088	-0.00091	-0.00090
	(A2 * B1 * !D1 * !X)	0.00103	0.00103	0.00102
	(A2 * !B1 * D1 * !X)	-0.00045	-0.00044	-0.00045
	(A2 * !B1 * D1 * !X)	0.00106	0.00104	0.00102
	(A2 * !B1 * !D1 * !X)	-0.00049	-0.00049	-0.00049
	(A2 * !B1 * !D1 * !X)	0.00102	0.00102	0.00102
	(A1 * !A2 * B1 * !D1 * !X)	-0.00087	-0.00091	-0.00090
	(A1 * !A2 * B1 * !D1 * !X)	0.00102	0.00103	0.00102
	(!A2 * !B1 * D1 * !X)	-0.00045	-0.00044	-0.00045
	(!A2 * !B1 * D1 * !X)	0.00106	0.00104	0.00102
	(!A2 * !B1 * !D1 * !X)	-0.00049	-0.00049	-0.00049
	(!A2 * !B1 * !D1 * !X)	0.00102	0.00102	0.00102
	(!A1 * !A2 * B1 * D1 * !X)	-0.00044	-0.00043	-0.00044
	(!A1 * !A2 * B1 * D1 * !X)	0.00106	0.00104	0.00102
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00055	-0.00055	-0.00054
	(!A1 * !A2 * B1 * !D1 * !X)	0.00102	0.00102	0.00102

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00089	-0.00092	-0.00091
	(A2 * B1 * !D1 * !X)	0.00116	0.00116	0.00115
	(A2 * !B1 * D1 * !X)	-0.00047	-0.00046	-0.00047
	(A2 * !B1 * D1 * !X)	0.00119	0.00118	0.00116
	(A2 * !B1 * !D1 * !X)	-0.00053	-0.00053	-0.00053
	(A2 * !B1 * !D1 * !X)	0.00115	0.00115	0.00115
	(A1 * !A2 * B1 * !D1 * !X)	-0.00089	-0.00092	-0.00091
	(A1 * !A2 * B1 * !D1 * !X)	0.00115	0.00116	0.00115
	(!A2 * !B1 * D1 * !X)	-0.00047	-0.00046	-0.00047
	(!A2 * !B1 * D1 * !X)	0.00119	0.00118	0.00116
	(!A2 * !B1 * !D1 * !X)	-0.00053	-0.00053	-0.00053
	(!A2 * !B1 * !D1 * !X)	0.00115	0.00115	0.00115
	(!A1 * !A2 * B1 * D1 * !X)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * B1 * D1 * !X)	0.00119	0.00118	0.00116
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00057	-0.00058	-0.00057
	(!A1 * !A2 * B1 * !D1 * !X)	0.00115	0.00115	0.00115

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00182	-0.00189	-0.00188
	(A2 * B1 * !D1 * !X)	0.00195	0.00196	0.00195
	(A2 * !B1 * D1 * !X)	-0.00096	-0.00095	-0.00097
	(A2 * !B1 * D1 * !X)	0.00204	0.00200	0.00196
	(A2 * !B1 * !D1 * !X)	-0.00108	-0.00109	-0.00109
	(A2 * !B1 * !D1 * !X)	0.00195	0.00195	0.00196
	(A1 * !A2 * B1 * !D1 * !X)	-0.00181	-0.00188	-0.00188
	(A1 * !A2 * B1 * !D1 * !X)	0.00194	0.00196	0.00195
	(!A2 * !B1 * D1 * !X)	-0.00096	-0.00095	-0.00097
	(!A2 * !B1 * D1 * !X)	0.00204	0.00200	0.00196
	(!A2 * !B1 * !D1 * !X)	-0.00109	-0.00109	-0.00109
	(!A2 * !B1 * !D1 * !X)	0.00195	0.00195	0.00196
	(!A1 * !A2 * B1 * D1 * !X)	-0.00094	-0.00092	-0.00094
	(!A1 * !A2 * B1 * D1 * !X)	0.00204	0.00201	0.00196
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00114	-0.00116	-0.00114
	(!A1 * !A2 * B1 * !D1 * !X)	0.00195	0.00196	0.00196

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00039	0.00039	0.00038
	(A2 * !C1 * !X)	-0.00124	-0.00125	-0.00126
	(A2 * !B1 * C1 * !X)	0.00040	0.00040	0.00037
	(A2 * !B1 * C1 * !X)	-0.00121	-0.00121	-0.00126
	(!A2 * !C1 * !X)	0.00039	0.00039	0.00038
	(!A2 * !C1 * !X)	-0.00124	-0.00125	-0.00126
	(!A2 * !B1 * C1 * !X)	0.00040	0.00040	0.00037
	(!A2 * !B1 * C1 * !X)	-0.00121	-0.00121	-0.00126
	(!A1 * !A2 * B1 * C1 * !X)	0.00044	0.00044	0.00039
	(!A1 * !A2 * B1 * C1 * !X)	-0.00114	-0.00115	-0.00125

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00041	0.00041	0.00040
	(A2 * !C1 * !X)	-0.00139	-0.00140	-0.00142
	(A2 * !B1 * C1 * !X)	0.00041	0.00041	0.00038
	(A2 * !B1 * C1 * !X)	-0.00136	-0.00137	-0.00142
	(!A2 * !C1 * !X)	0.00041	0.00041	0.00040
	(!A2 * !C1 * !X)	-0.00140	-0.00140	-0.00142
	(!A2 * !B1 * C1 * !X)	0.00041	0.00041	0.00038
	(!A2 * !B1 * C1 * !X)	-0.00136	-0.00137	-0.00142
	(!A1 * !A2 * B1 * C1 * !X)	0.00045	0.00045	0.00039
	(!A1 * !A2 * B1 * C1 * !X)	-0.00129	-0.00130	-0.00141
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00085	0.00086	0.00081
	(A2 * !C1 * !X)	-0.00228	-0.00230	-0.00236
	(A2 * !B1 * C1 * !X)	0.00083	0.00084	0.00077
	(A2 * !B1 * C1 * !X)	-0.00220	-0.00223	-0.00234
	(!A2 * !C1 * !X)	0.00085	0.00086	0.00081
	(!A2 * !C1 * !X)	-0.00228	-0.00230	-0.00235
	(!A2 * !B1 * C1 * !X)	0.00083	0.00084	0.00077
	(!A2 * !B1 * C1 * !X)	-0.00220	-0.00223	-0.00234
	(!A1 * !A2 * B1 * C1 * !X)	0.00089	0.00089	0.00077
	(!A1 * !A2 * B1 * C1 * !X)	-0.00208	-0.00210	-0.00232

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00038	-0.00038	-0.00038
	(A2 * !C1 * !X)	0.00127	0.00127	0.00126
	(A2 * !B1 * C1 * !X)	-0.00038	-0.00037	-0.00037
	(A2 * !B1 * C1 * !X)	0.00127	0.00126	0.00126
	(!A2 * !C1 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !C1 * !X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * C1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * C1 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * B1 * C1 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B1 * C1 * !X)	0.00126	0.00127	0.00126
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00040	-0.00039	-0.00039
	(A2 * !C1 * !X)	0.00144	0.00143	0.00142
	(A2 * !B1 * C1 * !X)	-0.00039	-0.00038	-0.00038
	(A2 * !B1 * C1 * !X)	0.00144	0.00143	0.00142
	(!A2 * !C1 * !X)	-0.00040	-0.00039	-0.00039
	(!A2 * !C1 * !X)	0.00144	0.00143	0.00142
	(!A2 * !B1 * C1 * !X)	-0.00039	-0.00038	-0.00038
	(!A2 * !B1 * C1 * !X)	0.00144	0.00143	0.00142
	(!A1 * !A2 * B1 * C1 * !X)	-0.00039	-0.00038	-0.00038
	(!A1 * !A2 * B1 * C1 * !X)	0.00144	0.00142	0.00142
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00079	-0.00080	-0.00079
	(A2 * !C1 * !X)	0.00235	0.00237	0.00236
	(A2 * !B1 * C1 * !X)	-0.00076	-0.00077	-0.00077
	(A2 * !B1 * C1 * !X)	0.00235	0.00237	0.00236
	(!A2 * !C1 * !X)	-0.00079	-0.00080	-0.00079
	(!A2 * !C1 * !X)	0.00235	0.00236	0.00236
	(!A2 * !B1 * C1 * !X)	-0.00077	-0.00077	-0.00077
	(!A2 * !B1 * C1 * !X)	0.00235	0.00236	0.00236
	(!A1 * !A2 * B1 * C1 * !X)	-0.00076	-0.00077	-0.00077
	(!A1 * !A2 * B1 * C1 * !X)	0.00235	0.00236	0.00236

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211ai_1	9.59040
sky130_fd_sc_hs__o211ai_2	15.98400
sky130_fd_sc_hs__o211ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__o211ai_1	0.00251	0.00265	0.00269	0.00266	0.15978
sky130_fd_sc_hs__o211ai_2	0.00484	0.00505	0.00505	0.00498	0.30566
sky130_fd_sc_hs__o211ai_4	0.00953	0.00996	0.00716	0.00750	0.58974

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	0.00010	0.00029
sky130_fd_sc_hs__o211ai_2	0.00000	0.00019	0.00058
sky130_fd_sc_hs__o211ai_4	0.00000	0.00032	0.00077

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)	0.43471	2.02625	13.59440
	A2->Y (FR)	0.40126	1.93378	13.22940
	B1->Y (FR)	0.15391	1.20427	9.35779
	C1->Y (FR)	0.12564	1.17407	9.32873
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.38928	1.78742	13.61280
	A2->Y (FR)	0.34110	1.68159	13.23430
	B1->Y (FR)	0.12619	1.07252	9.21725
	C1->Y (FR)	0.09134	1.04140	9.15503
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.35921	1.58640	13.54770
	A2->Y (FR)	0.31359	1.48895	13.20240
	B1->Y (FR)	0.18244	1.28234	12.02590
	C1->Y (FR)	0.11948	1.21508	11.88100

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.09161	0.64683	4.71823
	A2->Y (RF)	0.08151	0.62947	4.67495
	B1->Y (RF)	0.08450	0.69056	5.19452
	C1->Y (RF)	0.07261	0.69687	5.30540
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.08404	0.58511	4.66334
	A2->Y (RF)	0.07532	0.57114	4.65568
	B1->Y (RF)	0.07793	0.64505	5.31393
	C1->Y (RF)	0.06126	0.64333	5.43898
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.08307	0.54972	4.77703
	A2->Y (RF)	0.07053	0.52645	4.70859
	B1->Y (RF)	0.07066	0.59530	5.41085
	C1->Y (RF)	0.05617	0.61227	5.73911

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00115	0.00106	0.00102
	A1	0.00573	0.00565	0.00561
	A2	0.00117	0.00105	0.00101
	A2	0.00528	0.00517	0.00511
	B1	0.00053	0.00037	0.00034
	B1	0.00447	0.00432	0.00430
	C1	0.00009	-0.00005	-0.00007
	C1	0.00347	0.00334	0.00334
sky130_fd_sc_hs__o211ai_2	A1	0.00124	0.00108	0.00102
	A1	0.01047	0.01031	0.01026
	A2	0.00126	0.00102	0.00096
	A2	0.00948	0.00925	0.00915
	B1	0.00032	-0.00003	-0.00005
	B1	0.00818	0.00771	0.00783
	C1	-0.00095	-0.00113	-0.00114
	C1	0.00574	0.00556	0.00560
sky130_fd_sc_hs__o211ai_4	A1	0.00243	0.00204	0.00195
	A1	0.02029	0.01990	0.01983
	A2	0.00240	0.00186	0.00177
	A2	0.01834	0.01777	0.01763
	B1	0.00027	-0.00030	-0.00031
	B1	0.01289	0.01220	0.01125
	C1	-0.00195	-0.00225	-0.00219
	C1	0.00856	0.00826	0.00752

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00604	0.00597	0.00596
	A1	0.00137	0.00130	0.00126
	A2	0.00516	0.00515	0.00515
	A2	0.00093	0.00089	0.00086
	B1	0.00537	0.00532	0.00531
	B1	0.00142	0.00135	0.00131
	C1	0.00477	0.00469	0.00464
	C1	0.00142	0.00133	0.00130
sky130_fd_sc_hs__o211ai_2	A1	0.01145	0.01129	0.01128
	A1	0.00205	0.00188	0.00179
	A2	0.00930	0.00926	0.00925
	A2	0.00082	0.00076	0.00074
	B1	0.00993	0.00980	0.00979
	B1	0.00206	0.00190	0.00185
	C1	0.00861	0.00844	0.00861
	C1	0.00202	0.00186	0.00178
sky130_fd_sc_hs__o211ai_4	A1	0.02070	0.02036	0.02027
	A1	0.00250	0.00211	0.00199
	A2	0.01650	0.01634	0.01640
	A2	0.00004	-0.00015	-0.00008
	B1	0.01687	0.01677	0.01687
	B1	0.00423	0.00412	0.00403
	C1	0.01455	0.01436	0.01480
	C1	0.00421	0.00404	0.00399

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)**	0.00104	0.00106	0.00105
	(A2 * B1 * C1 * !Y)	-0.00117	-0.00120	-0.00119
	(A2 * B1 * !C1 * Y)	0.00105	0.00106	0.00105
	(A2 * B1 * !C1 * Y)	-0.00117	-0.00119	-0.00119
	(A2 * !B1 * Y)	0.00105	0.00106	0.00105
	(A2 * !B1 * Y)	-0.00117	-0.00120	-0.00119
	(!A2 * B1 * !C1 * Y)	0.00097	0.00097	0.00097
	(!A2 * B1 * !C1 * Y)	-0.00122	-0.00122	-0.00122
	(!A2 * !B1 * C1 * Y)	0.00099	0.00099	0.00099
	(!A2 * !B1 * C1 * Y)	-0.00121	-0.00122	-0.00122
	(!A2 * !B1 * !C1 * Y)	0.00099	0.00099	0.00099
	(!A2 * !B1 * !C1 * Y)	-0.00121	-0.00123	-0.00122
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00208	0.00208	0.00206
	(A2 * B1 * C1 * !Y)	-0.00237	-0.00244	-0.00242
	(A2 * B1 * !C1 * Y)	0.00206	0.00206	0.00205
	(A2 * B1 * !C1 * Y)	-0.00240	-0.00246	-0.00244
	(A2 * !B1 * Y)	0.00206	0.00207	0.00205
	(A2 * !B1 * Y)	-0.00240	-0.00246	-0.00244
	(!A2 * B1 * !C1 * Y)	0.00190	0.00191	0.00190
	(!A2 * B1 * !C1 * Y)	-0.00251	-0.00252	-0.00251
	(!A2 * !B1 * C1 * Y)	0.00194	0.00194	0.00192
	(!A2 * !B1 * C1 * Y)	-0.00250	-0.00252	-0.00251
	(!A2 * !B1 * !C1 * Y)	0.00194	0.00194	0.00192
	(!A2 * !B1 * !C1 * Y)	-0.00250	-0.00252	-0.00251

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00405	0.00406	0.00402
	(A2 * B1 * C1 * !Y)	-0.00473	-0.00486	-0.00481
	(A2 * B1 * !C1 * Y)	0.00403	0.00405	0.00401
	(A2 * B1 * !C1 * Y)	-0.00476	-0.00488	-0.00483
	(A2 * !B1 * Y)	0.00403	0.00405	0.00401
	(A2 * !B1 * Y)	-0.00476	-0.00488	-0.00483
	(!A2 * B1 * !C1 * Y)	0.00367	0.00367	0.00366
	(!A2 * B1 * !C1 * Y)	-0.00498	-0.00498	-0.00497
	(!A2 * !B1 * C1 * Y)	0.00373	0.00375	0.00372
	(!A2 * !B1 * C1 * Y)	-0.00498	-0.00499	-0.00497
	(!A2 * !B1 * !C1 * Y)	0.00373	0.00374	0.00372
	(!A2 * !B1 * !C1 * Y)	-0.00497	-0.00498	-0.00497

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)**	-0.00104	-0.00105	-0.00105
	(A2 * B1 * C1 * !Y)	0.00120	0.00121	0.00119
	(A2 * B1 * !C1 * Y)	-0.00105	-0.00105	-0.00105
	(A2 * B1 * !C1 * Y)	0.00119	0.00119	0.00119
	(A2 * !B1 * Y)	-0.00105	-0.00105	-0.00105
	(A2 * !B1 * Y)	0.00119	0.00121	0.00119
	(!A2 * B1 * !C1 * Y)	-0.00093	-0.00097	-0.00097
	(!A2 * B1 * !C1 * Y)	0.00123	0.00122	0.00122
	(!A2 * !B1 * C1 * Y)	-0.00096	-0.00099	-0.00099
	(!A2 * !B1 * C1 * Y)	0.00121	0.00123	0.00122
	(!A2 * !B1 * !C1 * Y)	-0.00096	-0.00099	-0.00099
	(!A2 * !B1 * !C1 * Y)	0.00121	0.00123	0.00122

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00207	-0.00207	-0.00206
	(A2 * B1 * C1 * !Y)	0.00244	0.00244	0.00242
	(A2 * B1 * !C1 * Y)	-0.00206	-0.00206	-0.00204
	(A2 * B1 * !C1 * Y)	0.00247	0.00246	0.00244
	(A2 * !B1 * Y)	-0.00204	-0.00206	-0.00204
	(A2 * !B1 * Y)	0.00243	0.00246	0.00244
	(!A2 * B1 * !C1 * Y)	-0.00182	-0.00191	-0.00190
	(!A2 * B1 * !C1 * Y)	0.00253	0.00252	0.00252
	(!A2 * !B1 * C1 * Y)	-0.00186	-0.00193	-0.00192
	(!A2 * !B1 * C1 * Y)	0.00250	0.00253	0.00252
	(!A2 * !B1 * !C1 * Y)	-0.00186	-0.00193	-0.00192
	(!A2 * !B1 * !C1 * Y)	0.00250	0.00253	0.00252
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00404	-0.00404	-0.00402
	(A2 * B1 * C1 * !Y)	0.00485	0.00486	0.00481
	(A2 * B1 * !C1 * Y)	-0.00400	-0.00402	-0.00400
	(A2 * B1 * !C1 * Y)	0.00482	0.00488	0.00483
	(A2 * !B1 * Y)	-0.00399	-0.00402	-0.00400
	(A2 * !B1 * Y)	0.00482	0.00488	0.00483
	(!A2 * B1 * !C1 * Y)	-0.00348	-0.00367	-0.00366
	(!A2 * B1 * !C1 * Y)	0.00500	0.00501	0.00499
	(!A2 * !B1 * C1 * Y)	-0.00361	-0.00375	-0.00372
	(!A2 * !B1 * C1 * Y)	0.00500	0.00501	0.00498
	(!A2 * !B1 * !C1 * Y)	-0.00361	-0.00374	-0.00372
	(!A2 * !B1 * !C1 * Y)	0.00500	0.00502	0.00498

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)**	0.00115	0.00114	0.00114
	(A1 * B1 * C1 * !Y)	-0.00076	-0.00075	-0.00075
	(A1 * B1 * !C1 * Y)	0.00102	0.00103	0.00102
	(A1 * B1 * !C1 * Y)	-0.00118	-0.00119	-0.00120
	(A1 * !B1 * C1 * Y)	0.00102	0.00103	0.00102
	(A1 * !B1 * C1 * Y)	-0.00118	-0.00121	-0.00120
	(A1 * !B1 * !C1 * Y)	0.00102	0.00103	0.00102
	(A1 * !B1 * !C1 * Y)	-0.00118	-0.00121	-0.00120
	(!A1 * B1 * !C1 * Y)	0.00094	0.00095	0.00094
	(!A1 * B1 * !C1 * Y)	-0.00123	-0.00123	-0.00123
	(!A1 * !B1 * C1 * Y)	0.00097	0.00097	0.00096
	(!A1 * !B1 * C1 * Y)	-0.00122	-0.00124	-0.00123
	(!A1 * !B1 * !C1 * Y)	0.00096	0.00096	0.00096
	(!A1 * !B1 * !C1 * Y)	-0.00122	-0.00124	-0.00123
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00238	0.00235	0.00235
	(A1 * B1 * C1 * !Y)	-0.00149	-0.00146	-0.00146
	(A1 * B1 * !C1 * Y)	0.00206	0.00206	0.00206
	(A1 * B1 * !C1 * Y)	-0.00237	-0.00242	-0.00241
	(A1 * !B1 * C1 * Y)	0.00206	0.00206	0.00206
	(A1 * !B1 * C1 * Y)	-0.00237	-0.00242	-0.00241
	(A1 * !B1 * !C1 * Y)	0.00207	0.00208	0.00206
	(A1 * !B1 * !C1 * Y)	-0.00239	-0.00243	-0.00241
	(!A1 * B1 * !C1 * Y)	0.00190	0.00191	0.00189
	(!A1 * B1 * !C1 * Y)	-0.00248	-0.00248	-0.00248
	(!A1 * !B1 * C1 * Y)	0.00192	0.00191	0.00191
	(!A1 * !B1 * C1 * Y)	-0.00247	-0.00247	-0.00248
	(!A1 * !B1 * !C1 * Y)	0.00191	0.00193	0.00192
	(!A1 * !B1 * !C1 * Y)	-0.00247	-0.00249	-0.00248

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00458	0.00459	0.00458
	(A1 * B1 * C1 * !Y)	-0.00296	-0.00297	-0.00296
	(A1 * B1 * !C1 * Y)	0.00401	0.00403	0.00401
	(A1 * B1 * !C1 * Y)	-0.00475	-0.00486	-0.00483
	(A1 * !B1 * C1 * Y)	0.00401	0.00403	0.00401
	(A1 * !B1 * C1 * Y)	-0.00474	-0.00486	-0.00483
	(A1 * !B1 * !C1 * Y)	0.00401	0.00403	0.00401
	(A1 * !B1 * !C1 * Y)	-0.00476	-0.00487	-0.00484
	(!A1 * B1 * !C1 * Y)	0.00363	0.00368	0.00365
	(!A1 * B1 * !C1 * Y)	-0.00497	-0.00501	-0.00499
	(!A1 * !B1 * C1 * Y)	0.00371	0.00370	0.00371
	(!A1 * !B1 * C1 * Y)	-0.00498	-0.00498	-0.00499
	(!A1 * !B1 * !C1 * Y)	0.00373	0.00375	0.00372
	(!A1 * !B1 * !C1 * Y)	-0.00499	-0.00502	-0.00499

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)**	-0.00111	-0.00111	-0.00114
	(A1 * B1 * C1 * !Y)	0.00078	0.00078	0.00076
	(A1 * B1 * !C1 * Y)	-0.00102	-0.00102	-0.00102
	(A1 * B1 * !C1 * Y)	0.00121	0.00119	0.00120
	(A1 * !B1 * C1 * Y)	-0.00102	-0.00103	-0.00102
	(A1 * !B1 * C1 * Y)	0.00121	0.00121	0.00120
	(A1 * !B1 * !C1 * Y)	-0.00102	-0.00103	-0.00102
	(A1 * !B1 * !C1 * Y)	0.00119	0.00121	0.00120
	(!A1 * B1 * !C1 * Y)	-0.00090	-0.00095	-0.00094
	(!A1 * B1 * !C1 * Y)	0.00123	0.00123	0.00123
	(!A1 * !B1 * C1 * Y)	-0.00093	-0.00097	-0.00096
	(!A1 * !B1 * C1 * Y)	0.00122	0.00124	0.00123
	(!A1 * !B1 * !C1 * Y)	-0.00093	-0.00096	-0.00096
	(!A1 * !B1 * !C1 * Y)	0.00122	0.00124	0.00123
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00223	-0.00224	-0.00234
	(A1 * B1 * C1 * !Y)	0.00157	0.00156	0.00149
	(A1 * B1 * !C1 * Y)	-0.00206	-0.00206	-0.00205
	(A1 * B1 * !C1 * Y)	0.00242	0.00242	0.00241
	(A1 * !B1 * C1 * Y)	-0.00205	-0.00206	-0.00205
	(A1 * !B1 * C1 * Y)	0.00241	0.00242	0.00241
	(A1 * !B1 * !C1 * Y)	-0.00205	-0.00206	-0.00205
	(A1 * !B1 * !C1 * Y)	0.00241	0.00243	0.00241
	(!A1 * B1 * !C1 * Y)	-0.00180	-0.00190	-0.00189
	(!A1 * B1 * !C1 * Y)	0.00248	0.00248	0.00249
	(!A1 * !B1 * C1 * Y)	-0.00185	-0.00191	-0.00191
	(!A1 * !B1 * C1 * Y)	0.00247	0.00250	0.00248
	(!A1 * !B1 * !C1 * Y)	-0.00185	-0.00193	-0.00192
	(!A1 * !B1 * !C1 * Y)	0.00247	0.00250	0.00248

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00439	-0.00441	-0.00458
	(A1 * B1 * C1 * !Y)	0.00315	0.00314	0.00300
	(A1 * B1 * !C1 * Y)	-0.00399	-0.00402	-0.00400
	(A1 * B1 * !C1 * Y)	0.00481	0.00486	0.00483
	(A1 * !B1 * C1 * Y)	-0.00400	-0.00402	-0.00400
	(A1 * !B1 * C1 * Y)	0.00482	0.00486	0.00483
	(A1 * !B1 * !C1 * Y)	-0.00399	-0.00402	-0.00400
	(A1 * !B1 * !C1 * Y)	0.00483	0.00487	0.00484
	(!A1 * B1 * !C1 * Y)	-0.00347	-0.00368	-0.00365
	(!A1 * B1 * !C1 * Y)	0.00501	0.00501	0.00500
	(!A1 * !B1 * C1 * Y)	-0.00359	-0.00370	-0.00371
	(!A1 * !B1 * C1 * Y)	0.00498	0.00503	0.00500
	(!A1 * !B1 * !C1 * Y)	-0.00360	-0.00374	-0.00372
	(!A1 * !B1 * !C1 * Y)	0.00499	0.00502	0.00500

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00093	0.00094	0.00094
	(A2 * !C1 * Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !C1 * Y)	0.00093	0.00094	0.00094
	(A1 * !A2 * !C1 * Y)	-0.00129	-0.00129	-0.00129
	(!A1 * !A2 * C1 * Y)	0.00052	0.00052	0.00052
	(!A1 * !A2 * C1 * Y)	-0.00129	-0.00129	-0.00128
	(!A1 * !A2 * !C1 * Y)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !C1 * Y)	-0.00129	-0.00130	-0.00129
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00187	0.00188	0.00188
	(A2 * !C1 * Y)	-0.00253	-0.00254	-0.00253
	(A1 * !A2 * !C1 * Y)	0.00187	0.00188	0.00188
	(A1 * !A2 * !C1 * Y)	-0.00253	-0.00254	-0.00253
	(!A1 * !A2 * C1 * Y)	0.00099	0.00099	0.00099
	(!A1 * !A2 * C1 * Y)	-0.00253	-0.00254	-0.00251
	(!A1 * !A2 * !C1 * Y)	0.00111	0.00112	0.00111
	(!A1 * !A2 * !C1 * Y)	-0.00254	-0.00255	-0.00254
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00368	0.00373	0.00371
	(A2 * !C1 * Y)	-0.00253	-0.00255	-0.00254
	(A1 * !A2 * !C1 * Y)	0.00371	0.00374	0.00371
	(A1 * !A2 * !C1 * Y)	-0.00254	-0.00256	-0.00254
	(!A1 * !A2 * C1 * Y)	0.00190	0.00191	0.00193
	(!A1 * !A2 * C1 * Y)	-0.00252	-0.00253	-0.00251
	(!A1 * !A2 * !C1 * Y)	0.00215	0.00217	0.00216
	(!A1 * !A2 * !C1 * Y)	-0.00255	-0.00256	-0.00256

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00092	-0.00094	-0.00094
	(A2 * !C1 * Y)	0.00130	0.00130	0.00129
	(A1 * !A2 * !C1 * Y)	-0.00092	-0.00094	-0.00094
	(A1 * !A2 * !C1 * Y)	0.00130	0.00130	0.00129
	(!A1 * !A2 * C1 * Y)	-0.00048	-0.00049	-0.00050
	(!A1 * !A2 * C1 * Y)	0.00132	0.00132	0.00130
	(!A1 * !A2 * !C1 * Y)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * !C1 * Y)	0.00129	0.00130	0.00130
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00183	-0.00188	-0.00188
	(A2 * !C1 * Y)	0.00255	0.00256	0.00254
	(A1 * !A2 * !C1 * Y)	-0.00182	-0.00188	-0.00188
	(A1 * !A2 * !C1 * Y)	0.00255	0.00256	0.00254
	(!A1 * !A2 * C1 * Y)	-0.00092	-0.00092	-0.00095
	(!A1 * !A2 * C1 * Y)	0.00260	0.00260	0.00255
	(!A1 * !A2 * !C1 * Y)	-0.00111	-0.00112	-0.00111
	(!A1 * !A2 * !C1 * Y)	0.00254	0.00255	0.00255
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00363	-0.00373	-0.00371
	(A2 * !C1 * Y)	0.00256	0.00257	0.00255
	(A1 * !A2 * !C1 * Y)	-0.00360	-0.00374	-0.00371
	(A1 * !A2 * !C1 * Y)	0.00256	0.00257	0.00255
	(!A1 * !A2 * C1 * Y)	-0.00180	-0.00180	-0.00185
	(!A1 * !A2 * C1 * Y)	0.00266	0.00266	0.00257
	(!A1 * !A2 * !C1 * Y)	-0.00215	-0.00217	-0.00216
	(!A1 * !A2 * !C1 * Y)	0.00255	0.00256	0.00256

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00040	0.00040	0.00039
	(A2 * !B1 * Y)	-0.00146	-0.00146	-0.00148
	(!A2 * !B1 * Y)	0.00040	0.00040	0.00039
	(!A2 * !B1 * Y)	-0.00145	-0.00146	-0.00148
	(!A1 * !A2 * B1 * Y)	0.00042	0.00042	0.00038
	(!A1 * !A2 * B1 * Y)	-0.00140	-0.00141	-0.00147
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00085	0.00085	0.00080
	(A2 * !B1 * Y)	-0.00282	-0.00284	-0.00289
	(!A2 * !B1 * Y)	0.00084	0.00085	0.00080
	(!A2 * !B1 * Y)	-0.00281	-0.00284	-0.00289
	(!A1 * !A2 * B1 * Y)	0.00084	0.00084	0.00076
	(!A1 * !A2 * B1 * Y)	-0.00270	-0.00273	-0.00287
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00162	0.00162	0.00154
	(A2 * !B1 * Y)	-0.00330	-0.00332	-0.00342
	(!A2 * !B1 * Y)	0.00161	0.00161	0.00154
	(!A2 * !B1 * Y)	-0.00329	-0.00332	-0.00342
	(!A1 * !A2 * B1 * Y)	0.00163	0.00162	0.00146
	(!A1 * !A2 * B1 * Y)	-0.00308	-0.00310	-0.00338

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00038	-0.00038	-0.00038
	(A2 * !B1 * Y)	0.00148	0.00149	0.00148
	(!A2 * !B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * Y)	0.00148	0.00149	0.00148
	(!A1 * !A2 * B1 * Y)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B1 * Y)	0.00148	0.00149	0.00148
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00078	-0.00078	-0.00078
	(A2 * !B1 * Y)	0.00290	0.00290	0.00289
	(!A2 * !B1 * Y)	-0.00078	-0.00078	-0.00078
	(!A2 * !B1 * Y)	0.00290	0.00291	0.00289
	(!A1 * !A2 * B1 * Y)	-0.00076	-0.00076	-0.00075
	(!A1 * !A2 * B1 * Y)	0.00290	0.00290	0.00289
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00150	-0.00152	-0.00150
	(A2 * !B1 * Y)	0.00341	0.00346	0.00342
	(!A2 * !B1 * Y)	-0.00152	-0.00151	-0.00150
	(!A2 * !B1 * Y)	0.00344	0.00344	0.00342
	(!A1 * !A2 * B1 * Y)	-0.00147	-0.00146	-0.00145
	(!A1 * !A2 * B1 * Y)	0.00343	0.00343	0.00342

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211a_1	14.38560
sky130_fd_sc_hs__o211a_2	12.78720
sky130_fd_sc_hs__o211a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__o211a_1	0.00242	0.00263	0.00243	0.00241	0.36714
sky130_fd_sc_hs__o211a_2	0.00259	0.00260	0.00260	0.00256	0.72246
sky130_fd_sc_hs__o211a_4	0.00464	0.00446	0.00463	0.00411	1.38076

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211a_1	0.00000	0.00019	0.00038
sky130_fd_sc_hs__o211a_2	0.00000	0.00028	0.00042
sky130_fd_sc_hs__o211a_4	0.00000	0.00051	0.00065

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)	0.23972	1.25372	8.96185
	A2->X (RR)	0.22192	1.23107	8.88493
	B1->X (RR)	0.22990	1.26666	8.93363
	C1->X (RR)	0.21879	1.24603	8.72816
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.23862	1.10860	9.01632
	A2->X (RR)	0.21619	1.08447	8.94900
	B1->X (RR)	0.23011	1.13583	9.04872
	C1->X (RR)	0.21914	1.12250	8.88104
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.23472	1.00545	9.11982
	A2->X (RR)	0.22814	0.98962	9.04902
	B1->X (RR)	0.22489	1.02291	9.11815
	C1->X (RR)	0.21179	1.00287	8.92606

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.59608	1.42958	7.25949
	A2->X (FF)	0.56155	1.34394	6.75772
	B1->X (FF)	0.23692	1.04472	6.28369
	C1->X (FF)	0.21332	1.01529	6.16892
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.72018	1.55682	7.58504
	A2->X (FF)	0.68246	1.46387	7.13643
	B1->X (FF)	0.29257	1.08942	6.58784
	C1->X (FF)	0.26518	1.05988	6.48125
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.64938	1.45026	7.44903
	A2->X (FF)	0.61115	1.35536	6.96699
	B1->X (FF)	0.29436	1.05218	6.45710
	C1->X (FF)	0.28757	1.04473	6.39302

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00794	0.00796	0.00792
	A1	0.00345	0.00346	0.00344
	A2	0.00737	0.00735	0.00730
	A2	0.00308	0.00305	0.00302
	B1	0.00726	0.00723	0.00718
	B1	0.00348	0.00345	0.00342
	C1	0.00675	0.00668	0.00663
	C1	0.00346	0.00339	0.00334
sky130_fd_sc_hs__o211a_2	A1	0.00979	0.00998	0.00999
	A1	0.00503	0.00522	0.00524
	A2	0.00893	0.00905	0.00909
	A2	0.00462	0.00475	0.00483
	B1	0.00907	0.00920	0.00924
	B1	0.00507	0.00521	0.00529
	C1	0.00852	0.00858	0.00860
	C1	0.00507	0.00513	0.00521
sky130_fd_sc_hs__o211a_4	A1	0.01796	0.01832	0.01850
	A1	0.00947	0.00983	0.01003
	A2	0.01603	0.01640	0.01651
	A2	0.00861	0.00897	0.00917
	B1	0.01683	0.01712	0.01729
	B1	0.00984	0.01013	0.01039
	C1	0.01535	0.01554	0.01566
	C1	0.00984	0.01004	0.01025

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00320	0.00321	0.00373
	A1	0.00757	0.00761	0.00752
	A2	0.00293	0.00293	0.00337
	A2	0.00710	0.00708	0.00701
	B1	0.00267	0.00257	0.00284
	B1	0.00645	0.00632	0.00628
	C1	0.00239	0.00222	0.00221
	C1	0.00569	0.00556	0.00552
sky130_fd_sc_hs__o211a_2	A1	0.00457	0.00477	0.00479
	A1	0.00921	0.00942	0.00939
	A2	0.00459	0.00476	0.00494
	A2	0.00876	0.00893	0.00890
	B1	0.00414	0.00413	0.00424
	B1	0.00815	0.00822	0.00820
	C1	0.00384	0.00383	0.00421
	C1	0.00732	0.00735	0.00735
sky130_fd_sc_hs__o211a_4	A1	0.00858	0.00919	0.00929
	A1	0.01684	0.01748	0.01750
	A2	0.00887	0.00933	0.01041
	A2	0.01603	0.01649	0.01653
	B1	0.00749	0.00761	0.00779
	B1	0.01444	0.01464	0.01470
	C1	0.00733	0.00756	0.00767
	C1	0.01290	0.01311	0.01320

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)**	0.00101	0.00102	0.00101
	(A2 * B1 * C1 * X)	-0.00108	-0.00110	-0.00109
	(A2 * B1 * !C1 * !X)	0.00089	0.00089	0.00089
	(A2 * B1 * !C1 * !X)	-0.00120	-0.00122	-0.00122
	(A2 * !B1 * !X)	0.00089	0.00089	0.00089
	(A2 * !B1 * !X)	-0.00120	-0.00122	-0.00122
	(!A2 * B1 * !C1 * !X)	0.00081	0.00081	0.00081
	(!A2 * B1 * !C1 * !X)	-0.00124	-0.00124	-0.00124
	(!A2 * !B1 * C1 * !X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * C1 * !X)	-0.00125	-0.00125	-0.00125
	(!A2 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A2 * !B1 * !C1 * !X)	-0.00125	-0.00125	-0.00125
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00114	0.00115	0.00114
	(A2 * B1 * C1 * X)	-0.00105	-0.00106	-0.00106
	(A2 * B1 * !C1 * !X)	0.00098	0.00098	0.00097
	(A2 * B1 * !C1 * !X)	-0.00121	-0.00123	-0.00123
	(A2 * !B1 * !X)	0.00098	0.00098	0.00097
	(A2 * !B1 * !X)	-0.00121	-0.00124	-0.00123
	(!A2 * B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(!A2 * B1 * !C1 * !X)	-0.00125	-0.00125	-0.00125
	(!A2 * !B1 * C1 * !X)	0.00092	0.00092	0.00092
	(!A2 * !B1 * C1 * !X)	-0.00125	-0.00125	-0.00125
	(!A2 * !B1 * !C1 * !X)	0.00092	0.00092	0.00092
	(!A2 * !B1 * !C1 * !X)	-0.00125	-0.00126	-0.00125

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00201	0.00202	0.00200
	(A2 * B1 * C1 * X)	-0.00212	-0.00219	-0.00217
	(A2 * B1 * !C1 * !X)	0.00196	0.00199	0.00197
	(A2 * B1 * !C1 * !X)	-0.00216	-0.00222	-0.00221
	(A2 * !B1 * !X)	0.00196	0.00199	0.00197
	(A2 * !B1 * !X)	-0.00216	-0.00222	-0.00221
	(!A2 * B1 * !C1 * !X)	0.00182	0.00182	0.00181
	(!A2 * B1 * !C1 * !X)	-0.00227	-0.00227	-0.00226
	(!A2 * !B1 * C1 * !X)	0.00186	0.00187	0.00186
	(!A2 * !B1 * C1 * !X)	-0.00226	-0.00227	-0.00226
	(!A2 * !B1 * !C1 * !X)	0.00186	0.00187	0.00186
	(!A2 * !B1 * !C1 * !X)	-0.00226	-0.00227	-0.00226

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)**	-0.00101	-0.00101	-0.00101
	(A2 * B1 * C1 * X)	0.00110	0.00110	0.00109
	(A2 * B1 * !C1 * !X)	-0.00089	-0.00089	-0.00088
	(A2 * B1 * !C1 * !X)	0.00122	0.00122	0.00122
	(A2 * !B1 * !X)	-0.00089	-0.00089	-0.00088
	(A2 * !B1 * !X)	0.00122	0.00122	0.00122
	(!A2 * B1 * !C1 * !X)	-0.00077	-0.00081	-0.00081
	(!A2 * B1 * !C1 * !X)	0.00125	0.00125	0.00125
	(!A2 * !B1 * C1 * !X)	-0.00081	-0.00084	-0.00083
	(!A2 * !B1 * C1 * !X)	0.00125	0.00125	0.00125
	(!A2 * !B1 * !C1 * !X)	-0.00081	-0.00084	-0.00083
	(!A2 * !B1 * !C1 * !X)	0.00125	0.00125	0.00125

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00114	-0.00114	-0.00114
	(A2 * B1 * C1 * X)	0.00106	0.00106	0.00106
	(A2 * B1 * !C1 * !X)	-0.00097	-0.00097	-0.00097
	(A2 * B1 * !C1 * !X)	0.00123	0.00123	0.00123
	(A2 * !B1 * !X)	-0.00097	-0.00098	-0.00097
	(A2 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A2 * B1 * !C1 * !X)	-0.00086	-0.00090	-0.00090
	(!A2 * B1 * !C1 * !X)	0.00126	0.00125	0.00125
	(!A2 * !B1 * C1 * !X)	-0.00090	-0.00092	-0.00092
	(!A2 * !B1 * C1 * !X)	0.00127	0.00126	0.00125
	(!A2 * !B1 * !C1 * !X)	-0.00089	-0.00092	-0.00092
	(!A2 * !B1 * !C1 * !X)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00201	-0.00201	-0.00200
	(A2 * B1 * C1 * X)	0.00218	0.00219	0.00217
	(A2 * B1 * !C1 * !X)	-0.00196	-0.00197	-0.00197
	(A2 * B1 * !C1 * !X)	0.00221	0.00222	0.00221
	(A2 * !B1 * !X)	-0.00196	-0.00197	-0.00197
	(A2 * !B1 * !X)	0.00221	0.00222	0.00221
	(!A2 * B1 * !C1 * !X)	-0.00176	-0.00182	-0.00181
	(!A2 * B1 * !C1 * !X)	0.00227	0.00229	0.00227
	(!A2 * !B1 * C1 * !X)	-0.00181	-0.00187	-0.00186
	(!A2 * !B1 * C1 * !X)	0.00226	0.00229	0.00227
	(!A2 * !B1 * !C1 * !X)	-0.00182	-0.00187	-0.00186
	(!A2 * !B1 * !C1 * !X)	0.00226	0.00229	0.00227

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)**	0.00131	0.00131	0.00131
	(A1 * B1 * C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * B1 * !C1 * !X)	0.00117	0.00117	0.00117
	(A1 * B1 * !C1 * !X)	-0.00109	-0.00111	-0.00110
	(A1 * !B1 * C1 * !X)	0.00117	0.00117	0.00117
	(A1 * !B1 * C1 * !X)	-0.00109	-0.00111	-0.00110
	(A1 * !B1 * !C1 * !X)	0.00117	0.00117	0.00117
	(A1 * !B1 * !C1 * !X)	-0.00109	-0.00111	-0.00111
	(!A1 * B1 * !C1 * !X)	0.00109	0.00109	0.00109
	(!A1 * B1 * !C1 * !X)	-0.00114	-0.00114	-0.00113
	(!A1 * !B1 * C1 * !X)	0.00112	0.00112	0.00111
	(!A1 * !B1 * C1 * !X)	-0.00114	-0.00114	-0.00113
	(!A1 * !B1 * !C1 * !X)	0.00112	0.00111	0.00111
	(!A1 * !B1 * !C1 * !X)	-0.00114	-0.00113	-0.00113
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00117	0.00115	0.00115
	(A1 * B1 * C1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * B1 * !C1 * !X)	0.00096	0.00096	0.00096
	(A1 * B1 * !C1 * !X)	-0.00114	-0.00116	-0.00116
	(A1 * !B1 * C1 * !X)	0.00096	0.00096	0.00096
	(A1 * !B1 * C1 * !X)	-0.00114	-0.00116	-0.00116
	(A1 * !B1 * !C1 * !X)	0.00096	0.00096	0.00096
	(A1 * !B1 * !C1 * !X)	-0.00114	-0.00116	-0.00116
	(!A1 * B1 * !C1 * !X)	0.00088	0.00089	0.00088
	(!A1 * B1 * !C1 * !X)	-0.00118	-0.00119	-0.00118
	(!A1 * !B1 * C1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !B1 * C1 * !X)	-0.00118	-0.00119	-0.00119
	(!A1 * !B1 * !C1 * !X)	0.00091	0.00091	0.00090
	(!A1 * !B1 * !C1 * !X)	-0.00118	-0.00119	-0.00119

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00196	0.00193	0.00193
	(A1 * B1 * C1 * X)	-0.00138	-0.00136	-0.00136
	(A1 * B1 * !C1 * !X)	0.00167	0.00166	0.00167
	(A1 * B1 * !C1 * !X)	-0.00218	-0.00222	-0.00221
	(A1 * !B1 * C1 * !X)	0.00167	0.00167	0.00167
	(A1 * !B1 * C1 * !X)	-0.00218	-0.00222	-0.00221
	(A1 * !B1 * !C1 * !X)	0.00167	0.00167	0.00167
	(A1 * !B1 * !C1 * !X)	-0.00218	-0.00223	-0.00221
	(!A1 * B1 * !C1 * !X)	0.00154	0.00154	0.00153
	(!A1 * B1 * !C1 * !X)	-0.00228	-0.00228	-0.00227
	(!A1 * !B1 * C1 * !X)	0.00157	0.00158	0.00156
	(!A1 * !B1 * C1 * !X)	-0.00227	-0.00228	-0.00227
	(!A1 * !B1 * !C1 * !X)	0.00156	0.00157	0.00156
	(!A1 * !B1 * !C1 * !X)	-0.00227	-0.00228	-0.00227

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)**	-0.00128	-0.00128	-0.00131
	(A1 * B1 * C1 * X)	0.00070	0.00070	0.00068
	(A1 * B1 * !C1 * !X)	-0.00116	-0.00117	-0.00117
	(A1 * B1 * !C1 * !X)	0.00110	0.00111	0.00110
	(A1 * !B1 * C1 * !X)	-0.00117	-0.00117	-0.00117
	(A1 * !B1 * C1 * !X)	0.00110	0.00111	0.00110
	(A1 * !B1 * !C1 * !X)	-0.00117	-0.00117	-0.00117
	(A1 * !B1 * !C1 * !X)	0.00111	0.00111	0.00111
	(!A1 * B1 * !C1 * !X)	-0.00106	-0.00109	-0.00109
	(!A1 * B1 * !C1 * !X)	0.00114	0.00114	0.00113
	(!A1 * !B1 * C1 * !X)	-0.00108	-0.00112	-0.00111
	(!A1 * !B1 * C1 * !X)	0.00114	0.00114	0.00114
	(!A1 * !B1 * !C1 * !X)	-0.00108	-0.00111	-0.00111
	(!A1 * !B1 * !C1 * !X)	0.00114	0.00114	0.00114
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00112	-0.00112	-0.00115
	(A1 * B1 * C1 * X)	0.00070	0.00070	0.00067
	(A1 * B1 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * B1 * !C1 * !X)	0.00116	0.00116	0.00116
	(A1 * !B1 * C1 * !X)	-0.00095	-0.00096	-0.00096
	(A1 * !B1 * C1 * !X)	0.00115	0.00116	0.00116
	(A1 * !B1 * !C1 * !X)	-0.00095	-0.00096	-0.00096
	(A1 * !B1 * !C1 * !X)	0.00115	0.00117	0.00116
	(!A1 * B1 * !C1 * !X)	-0.00085	-0.00089	-0.00088
	(!A1 * B1 * !C1 * !X)	0.00119	0.00119	0.00119
	(!A1 * !B1 * C1 * !X)	-0.00087	-0.00091	-0.00090
	(!A1 * !B1 * C1 * !X)	0.00118	0.00119	0.00119
	(!A1 * !B1 * !C1 * !X)	-0.00087	-0.00091	-0.00090
	(!A1 * !B1 * !C1 * !X)	0.00118	0.00119	0.00119

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00186	-0.00186	-0.00193
	(A1 * B1 * C1 * X)	0.00142	0.00142	0.00137
	(A1 * B1 * !C1 * !X)	-0.00167	-0.00166	-0.00167
	(A1 * B1 * !C1 * !X)	0.00222	0.00222	0.00221
	(A1 * !B1 * C1 * !X)	-0.00166	-0.00167	-0.00167
	(A1 * !B1 * C1 * !X)	0.00219	0.00223	0.00221
	(A1 * !B1 * !C1 * !X)	-0.00166	-0.00167	-0.00167
	(A1 * !B1 * !C1 * !X)	0.00220	0.00223	0.00221
	(!A1 * B1 * !C1 * !X)	-0.00146	-0.00154	-0.00153
	(!A1 * B1 * !C1 * !X)	0.00228	0.00228	0.00228
	(!A1 * !B1 * C1 * !X)	-0.00152	-0.00158	-0.00156
	(!A1 * !B1 * C1 * !X)	0.00228	0.00228	0.00228
	(!A1 * !B1 * !C1 * !X)	-0.00152	-0.00157	-0.00156
	(!A1 * !B1 * !C1 * !X)	0.00228	0.00228	0.00228

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00075	0.00076	0.00076
	(A2 * !C1 * !X)	-0.00126	-0.00128	-0.00127
	(A1 * !A2 * !C1 * !X)	0.00076	0.00076	0.00076
	(A1 * !A2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !A2 * C1 * !X)	0.00041	0.00042	0.00041
	(!A1 * !A2 * C1 * !X)	-0.00128	-0.00129	-0.00127
	(!A1 * !A2 * !C1 * !X)	0.00049	0.00049	0.00048
	(!A1 * !A2 * !C1 * !X)	-0.00129	-0.00129	-0.00129
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00089	0.00089	0.00089
	(A2 * !C1 * !X)	-0.00119	-0.00120	-0.00120
	(A1 * !A2 * !C1 * !X)	0.00088	0.00090	0.00089
	(A1 * !A2 * !C1 * !X)	-0.00119	-0.00120	-0.00120
	(!A1 * !A2 * C1 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A2 * C1 * !X)	-0.00121	-0.00121	-0.00120
	(!A1 * !A2 * !C1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A2 * !C1 * !X)	-0.00122	-0.00121	-0.00121
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00194	0.00195	0.00194
	(A2 * !C1 * !X)	-0.00202	-0.00201	-0.00202
	(A1 * !A2 * !C1 * !X)	0.00194	0.00195	0.00194
	(A1 * !A2 * !C1 * !X)	-0.00202	-0.00203	-0.00202
	(!A1 * !A2 * C1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A2 * C1 * !X)	-0.00201	-0.00202	-0.00201
	(!A1 * !A2 * !C1 * !X)	0.00132	0.00132	0.00131
	(!A1 * !A2 * !C1 * !X)	-0.00204	-0.00204	-0.00203

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00074	-0.00076	-0.00076
	(A2 * !C1 * !X)	0.00128	0.00128	0.00127
	(A1 * !A2 * !C1 * !X)	-0.00074	-0.00076	-0.00076
	(A1 * !A2 * !C1 * !X)	0.00127	0.00128	0.00127
	(!A1 * !A2 * C1 * !X)	-0.00039	-0.00038	-0.00039
	(!A1 * !A2 * C1 * !X)	0.00131	0.00130	0.00128
	(!A1 * !A2 * !C1 * !X)	-0.00049	-0.00049	-0.00048
	(!A1 * !A2 * !C1 * !X)	0.00129	0.00129	0.00129
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00086	-0.00089	-0.00089
	(A2 * !C1 * !X)	0.00119	0.00121	0.00120
	(A1 * !A2 * !C1 * !X)	-0.00087	-0.00090	-0.00089
	(A1 * !A2 * !C1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A2 * C1 * !X)	-0.00045	-0.00044	-0.00045
	(!A1 * !A2 * C1 * !X)	0.00124	0.00123	0.00121
	(!A1 * !A2 * !C1 * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * !C1 * !X)	0.00122	0.00122	0.00122
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00190	-0.00194	-0.00194
	(A2 * !C1 * !X)	0.00202	0.00201	0.00202
	(A1 * !A2 * !C1 * !X)	-0.00190	-0.00195	-0.00194
	(A1 * !A2 * !C1 * !X)	0.00202	0.00204	0.00202
	(!A1 * !A2 * C1 * !X)	-0.00114	-0.00116	-0.00116
	(!A1 * !A2 * C1 * !X)	0.00207	0.00210	0.00203
	(!A1 * !A2 * !C1 * !X)	-0.00132	-0.00132	-0.00131
	(!A1 * !A2 * !C1 * !X)	0.00204	0.00206	0.00204

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00033	0.00033	0.00032
	(A2 * !B1 * !X)	-0.00139	-0.00140	-0.00141
	(!A2 * !B1 * !X)	0.00033	0.00033	0.00032
	(!A2 * !B1 * !X)	-0.00139	-0.00139	-0.00141
	(!A1 * !A2 * B1 * !X)	0.00037	0.00036	0.00032
	(!A1 * !A2 * B1 * !X)	-0.00133	-0.00134	-0.00140
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00041	0.00041	0.00040
	(A2 * !B1 * !X)	-0.00134	-0.00134	-0.00136
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00040
	(!A2 * !B1 * !X)	-0.00134	-0.00134	-0.00136
	(!A1 * !A2 * B1 * !X)	0.00044	0.00044	0.00040
	(!A1 * !A2 * B1 * !X)	-0.00129	-0.00129	-0.00136
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00061	0.00061	0.00059
	(A2 * !B1 * !X)	-0.00222	-0.00224	-0.00227
	(!A2 * !B1 * !X)	0.00061	0.00061	0.00059
	(!A2 * !B1 * !X)	-0.00222	-0.00224	-0.00227
	(!A1 * !A2 * B1 * !X)	0.00066	0.00066	0.00058
	(!A1 * !A2 * B1 * !X)	-0.00210	-0.00212	-0.00225

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00032	-0.00031	-0.00031
	(A2 * !B1 * !X)	0.00142	0.00141	0.00141
	(!A2 * !B1 * !X)	-0.00031	-0.00031	-0.00031
	(!A2 * !B1 * !X)	0.00141	0.00141	0.00141
	(!A1 * !A2 * B1 * !X)	-0.00030	-0.00031	-0.00030
	(!A1 * !A2 * B1 * !X)	0.00140	0.00141	0.00141
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00040	-0.00039	-0.00039
	(A2 * !B1 * !X)	0.00137	0.00136	0.00136
	(!A2 * !B1 * !X)	-0.00040	-0.00039	-0.00039
	(!A2 * !B1 * !X)	0.00137	0.00136	0.00136
	(!A1 * !A2 * B1 * !X)	-0.00040	-0.00039	-0.00038
	(!A1 * !A2 * B1 * !X)	0.00137	0.00136	0.00136
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00057	-0.00058	-0.00057
	(A2 * !B1 * !X)	0.00226	0.00228	0.00227
	(!A2 * !B1 * !X)	-0.00057	-0.00057	-0.00057
	(!A2 * !B1 * !X)	0.00226	0.00227	0.00227
	(!A1 * !A2 * B1 * !X)	-0.00056	-0.00056	-0.00055
	(!A1 * !A2 * B1 * !X)	0.00226	0.00227	0.00227

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ai_1	7.99200
sky130_fd_sc_hs__o21ai_2	11.18880
sky130_fd_sc_hs__o21ai_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__o21ai_1	0.00264	0.00275	0.00270	0.16408
sky130_fd_sc_hs__o21ai_2	0.00533	0.00498	0.00497	0.31910
sky130_fd_sc_hs__o21ai_4	0.00936	0.00982	0.00741	0.59277

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.00010	0.00019
sky130_fd_sc_hs__o21ai_2	0.00000	0.00020	0.00039
sky130_fd_sc_hs__o21ai_4	0.00000	0.00033	0.00058

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)	0.34202	1.94491	13.68030
	A2->Y (FR)	0.30786	1.85282	13.32290
	B1->Y (FR)	0.10750	1.15604	9.33760
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.29203	1.67976	13.60990
	A2->Y (FR)	0.24426	1.58045	13.23530
	B1->Y (FR)	0.07951	1.04480	9.32862
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.27552	1.50493	13.56310
	A2->Y (FR)	0.23126	1.41137	13.26060
	B1->Y (FR)	0.10866	1.23787	12.27960

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.06181	0.59288	4.55869
	A2->Y (RF)	0.05573	0.58036	4.52897
	B1->Y (RF)	0.05304	0.62129	4.84545
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.05257	0.53743	4.52516
	A2->Y (RF)	0.04909	0.52625	4.52229
	B1->Y (RF)	0.03935	0.54539	4.84939
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.05055	0.49678	4.50768
	A2->Y (RF)	0.04715	0.48303	4.49412
	B1->Y (RF)	0.03933	0.51143	4.84155

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00045	0.00035	0.00032
	A1	0.00461	0.00452	0.00449
	A2	0.00050	0.00038	0.00035
	A2	0.00414	0.00403	0.00399
	B1	-0.00014	-0.00024	-0.00025
	B1	0.00333	0.00322	0.00323
sky130_fd_sc_hs__o21ai_2	A1	0.00045	0.00026	0.00022
	A1	0.00833	0.00813	0.00811
	A2	0.00048	0.00030	0.00025
	A2	0.00718	0.00699	0.00693
	B1	-0.00111	-0.00121	-0.00121
	B1	0.00521	0.00511	0.00515
sky130_fd_sc_hs__o21ai_4	A1	0.00065	0.00033	0.00027
	A1	0.01585	0.01551	0.01547
	A2	0.00050	0.00005	0.00004
	A2	0.01389	0.01345	0.01341
	B1	-0.00205	-0.00223	-0.00217
	B1	0.00799	0.00781	0.00649

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00490	0.00484	0.00479
	A1	0.00071	0.00063	0.00059
	A2	0.00397	0.00395	0.00392
	A2	0.00027	0.00023	0.00020
	B1	0.00409	0.00403	0.00400
	B1	0.00067	0.00058	0.00055
sky130_fd_sc_hs__o21ai_2	A1	0.00888	0.00873	0.00865
	A1	0.00095	0.00077	0.00070
	A2	0.00673	0.00670	0.00669
	A2	-0.00011	-0.00016	-0.00017
	B1	0.00718	0.00705	0.00703
	B1	0.00095	0.00079	0.00074
sky130_fd_sc_hs__o21ai_4	A1	0.01648	0.01614	0.01601
	A1	0.00124	0.00085	0.00073
	A2	0.01258	0.01249	0.01253
	A2	-0.00109	-0.00122	-0.00114
	B1	0.01278	0.01265	0.01274
	B1	0.00295	0.00277	0.00271

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00116	0.00118	0.00116
	(A2 * B1 * !Y)	-0.00115	-0.00117	-0.00118
	(A2 * !B1 * Y)	0.00107	0.00108	0.00107
	(A2 * !B1 * Y)	-0.00125	-0.00128	-0.00127
	(!A2 * !B1 * Y)	0.00101	0.00101	0.00101
	(!A2 * !B1 * Y)	-0.00131	-0.00130	-0.00130
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00216	0.00219	0.00217
	(A2 * B1 * !Y)	-0.00232	-0.00240	-0.00238
	(A2 * !B1 * Y)	0.00205	0.00206	0.00204
	(A2 * !B1 * Y)	-0.00248	-0.00254	-0.00251
	(!A2 * !B1 * Y)	0.00190	0.00191	0.00190
	(!A2 * !B1 * Y)	-0.00257	-0.00258	-0.00258
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00401	0.00400	0.00396
	(A2 * B1 * !Y)	-0.00464	-0.00476	-0.00473
	(A2 * !B1 * Y)	0.00395	0.00397	0.00393
	(A2 * !B1 * Y)	-0.00470	-0.00482	-0.00477
	(!A2 * !B1 * Y)	0.00369	0.00370	0.00368
	(!A2 * !B1 * Y)	-0.00492	-0.00493	-0.00491

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00116	-0.00116	-0.00116
	(A2 * B1 * !Y)	0.00118	0.00117	0.00118
	(A2 * !B1 * Y)	-0.00107	-0.00107	-0.00107
	(A2 * !B1 * Y)	0.00127	0.00128	0.00127
	(!A2 * !B1 * Y)	-0.00098	-0.00101	-0.00101
	(!A2 * !B1 * Y)	0.00131	0.00131	0.00130
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00216	-0.00218	-0.00217
	(A2 * B1 * !Y)	0.00239	0.00240	0.00238
	(A2 * !B1 * Y)	-0.00204	-0.00204	-0.00203
	(A2 * !B1 * Y)	0.00252	0.00254	0.00251
	(!A2 * !B1 * Y)	-0.00185	-0.00191	-0.00190
	(!A2 * !B1 * Y)	0.00257	0.00259	0.00258
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00396	-0.00398	-0.00396
	(A2 * B1 * !Y)	0.00472	0.00476	0.00473
	(A2 * !B1 * Y)	-0.00392	-0.00395	-0.00392
	(A2 * !B1 * Y)	0.00476	0.00484	0.00477
	(!A2 * !B1 * Y)	-0.00357	-0.00370	-0.00368
	(!A2 * !B1 * Y)	0.00492	0.00495	0.00493

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00120	0.00120	0.00120
	(A1 * B1 * !Y)	-0.00073	-0.00073	-0.00073
	(A1 * !B1 * Y)	0.00097	0.00097	0.00097
	(A1 * !B1 * Y)	-0.00127	-0.00130	-0.00129
	(!A1 * !B1 * Y)	0.00091	0.00092	0.00091
	(!A1 * !B1 * Y)	-0.00132	-0.00134	-0.00133
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00217	0.00217	0.00217
	(A1 * B1 * !Y)	-0.00147	-0.00146	-0.00146
	(A1 * !B1 * Y)	0.00198	0.00199	0.00197
	(A1 * !B1 * Y)	-0.00227	-0.00234	-0.00232
	(!A1 * !B1 * Y)	0.00185	0.00187	0.00185
	(!A1 * !B1 * Y)	-0.00238	-0.00240	-0.00239
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00462	0.00459	0.00459
	(A1 * B1 * !Y)	-0.00298	-0.00295	-0.00295
	(A1 * !B1 * Y)	0.00400	0.00402	0.00400
	(A1 * !B1 * Y)	-0.00475	-0.00483	-0.00484
	(!A1 * !B1 * Y)	0.00372	0.00375	0.00373
	(!A1 * !B1 * Y)	-0.00500	-0.00502	-0.00501

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00116	-0.00117	-0.00120
	(A1 * B1 * !Y)	0.00075	0.00075	0.00073
	(A1 * !B1 * Y)	-0.00097	-0.00097	-0.00096
	(A1 * !B1 * Y)	0.00130	0.00130	0.00129
	(!A1 * !B1 * Y)	-0.00089	-0.00092	-0.00091
	(!A1 * !B1 * Y)	0.00133	0.00134	0.00133
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00209	-0.00210	-0.00217
	(A1 * B1 * !Y)	0.00153	0.00153	0.00148
	(A1 * !B1 * Y)	-0.00196	-0.00198	-0.00197
	(A1 * !B1 * Y)	0.00231	0.00234	0.00232
	(!A1 * !B1 * Y)	-0.00180	-0.00186	-0.00185
	(!A1 * !B1 * Y)	0.00238	0.00240	0.00239
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00440	-0.00442	-0.00459
	(A1 * B1 * !Y)	0.00313	0.00313	0.00299
	(A1 * !B1 * Y)	-0.00398	-0.00398	-0.00399
	(A1 * !B1 * Y)	0.00482	0.00483	0.00484
	(!A1 * !B1 * Y)	-0.00362	-0.00375	-0.00373
	(!A1 * !B1 * Y)	0.00501	0.00505	0.00502

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00043	0.00043	0.00040
	(!A1 * !A2 * Y)	-0.00150	-0.00150	-0.00154
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00088	0.00088	0.00082
	(!A1 * !A2 * Y)	-0.00274	-0.00276	-0.00283
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00155	0.00155	0.00145
	(!A1 * !A2 * Y)	-0.00320	-0.00323	-0.00338

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * Y)	0.00154	0.00155	0.00154
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00079	-0.00080	-0.00080
	(!A1 * !A2 * Y)	0.00282	0.00285	0.00284
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00143	-0.00142	-0.00141
	(!A1 * !A2 * Y)	0.00340	0.00340	0.00338

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21a_1	9.59040
sky130_fd_sc_hs__o21a_2	12.78720
sky130_fd_sc_hs__o21a_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__o21a_1	0.00225	0.00230	0.00229	0.36105
sky130_fd_sc_hs__o21a_2	0.00246	0.00245	0.00258	0.71365
sky130_fd_sc_hs__o21a_4	0.00469	0.00437	0.00423	1.39256

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	0.00017	0.00021
sky130_fd_sc_hs__o21a_2	0.00000	0.00026	0.00031
sky130_fd_sc_hs__o21a_4	0.00000	0.00048	0.00059

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)	0.17059	1.17877	8.72442
	A2->X (RR)	0.15869	1.15508	8.62306
	B1->X (RR)	0.16253	1.16180	8.49190
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.17122	1.04858	8.86445
	A2->X (RR)	0.15989	1.02843	8.79473
	B1->X (RR)	0.16301	1.03969	8.68813
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.17502	0.94487	8.96216
	A2->X (RR)	0.16950	0.92715	8.88312
	B1->X (RR)	0.16268	0.93275	8.75926

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.45533	1.26765	6.86295
	A2->X (FF)	0.41729	1.17933	6.29626
	B1->X (FF)	0.19752	0.98092	5.91265
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.61443	1.43501	7.31264
	A2->X (FF)	0.57994	1.34640	6.83734
	B1->X (FF)	0.23790	1.02209	6.31517
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.57645	1.36886	7.27084
	A2->X (FF)	0.53366	1.27249	6.76743
	B1->X (FF)	0.25661	1.01154	6.30126

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00623	0.00625	0.00620
	A1	0.00271	0.00272	0.00269
	A2	0.00533	0.00528	0.00523
	A2	0.00226	0.00221	0.00218
	B1	0.00565	0.00559	0.00553
	B1	0.00291	0.00284	0.00279
sky130_fd_sc_hs__o21a_2	A1	0.00838	0.00854	0.00859
	A1	0.00452	0.00482	0.00478
	A2	0.00750	0.00761	0.00763
	A2	0.00416	0.00427	0.00432
	B1	0.00765	0.00769	0.00769
	B1	0.00459	0.00464	0.00465
sky130_fd_sc_hs__o21a_4	A1	0.01607	0.01635	0.01650
	A1	0.00886	0.00913	0.00937
	A2	0.01407	0.01430	0.01442
	A2	0.00795	0.00819	0.00841
	B1	0.01448	0.01464	0.01471
	B1	0.00915	0.00932	0.00939

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00265	0.00272	0.00353
	A1	0.00612	0.00619	0.00615
	A2	0.00269	0.00261	0.00278
	A2	0.00568	0.00570	0.00566
	B1	0.00217	0.00207	0.00212
	B1	0.00495	0.00482	0.00480
sky130_fd_sc_hs__o21a_2	A1	0.00436	0.00463	0.00601
	A1	0.00815	0.00843	0.00842
	A2	0.00444	0.00464	0.00603
	A2	0.00769	0.00790	0.00790
	B1	0.00386	0.00386	0.00451
	B1	0.00696	0.00697	0.00697
sky130_fd_sc_hs__o21a_4	A1	0.00791	0.00850	0.01020
	A1	0.01502	0.01565	0.01569
	A2	0.00820	0.00864	0.01093
	A2	0.01417	0.01465	0.01472
	B1	0.00729	0.00742	0.00844
	B1	0.01265	0.01281	0.01288

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00091	0.00092	0.00092
	(A2 * B1 * X)	-0.00110	-0.00112	-0.00111
	(A2 * !B1 * !X)	0.00092	0.00092	0.00092
	(A2 * !B1 * !X)	-0.00109	-0.00112	-0.00111
	(!A2 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A2 * !B1 * !X)	-0.00113	-0.00114	-0.00113
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00110	0.00112	0.00111
	(A2 * B1 * X)	-0.00107	-0.00109	-0.00109
	(A2 * !B1 * !X)	0.00111	0.00112	0.00111
	(A2 * !B1 * !X)	-0.00108	-0.00109	-0.00109
	(!A2 * !B1 * !X)	0.00105	0.00104	0.00104
	(!A2 * !B1 * !X)	-0.00111	-0.00112	-0.00111
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00205	0.00207	0.00205
	(A2 * B1 * X)	-0.00207	-0.00213	-0.00212
	(A2 * !B1 * !X)	0.00198	0.00201	0.00199
	(A2 * !B1 * !X)	-0.00214	-0.00220	-0.00218
	(!A2 * !B1 * !X)	0.00187	0.00188	0.00187
	(!A2 * !B1 * !X)	-0.00223	-0.00225	-0.00224

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00091	-0.00092	-0.00091
	(A2 * B1 * X)	0.00112	0.00112	0.00111
	(A2 * !B1 * !X)	-0.00091	-0.00092	-0.00091
	(A2 * !B1 * !X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * !X)	-0.00083	-0.00087	-0.00086
	(!A2 * !B1 * !X)	0.00113	0.00114	0.00114
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00110	-0.00110	-0.00110
	(A2 * B1 * X)	0.00110	0.00109	0.00109
	(A2 * !B1 * !X)	-0.00111	-0.00110	-0.00110
	(A2 * !B1 * !X)	0.00110	0.00109	0.00109
	(!A2 * !B1 * !X)	-0.00101	-0.00104	-0.00104
	(!A2 * !B1 * !X)	0.00111	0.00112	0.00112
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00205	-0.00206	-0.00205
	(A2 * B1 * X)	0.00212	0.00213	0.00212
	(A2 * !B1 * !X)	-0.00198	-0.00199	-0.00198
	(A2 * !B1 * !X)	0.00219	0.00220	0.00218
	(!A2 * !B1 * !X)	-0.00183	-0.00188	-0.00187
	(!A2 * !B1 * !X)	0.00223	0.00226	0.00224

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00094	0.00095	0.00095
	(A1 * B1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !B1 * !X)	0.00087	0.00087	0.00087
	(A1 * !B1 * !X)	-0.00106	-0.00108	-0.00107
	(!A1 * !B1 * !X)	0.00081	0.00081	0.00081
	(!A1 * !B1 * !X)	-0.00110	-0.00110	-0.00110
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00111	0.00109	0.00109
	(A1 * B1 * X)	-0.00067	-0.00066	-0.00066
	(A1 * !B1 * !X)	0.00099	0.00099	0.00099
	(A1 * !B1 * !X)	-0.00104	-0.00106	-0.00106
	(!A1 * !B1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !B1 * !X)	-0.00108	-0.00109	-0.00109
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00191	0.00188	0.00188
	(A1 * B1 * X)	-0.00136	-0.00134	-0.00134
	(A1 * !B1 * !X)	0.00166	0.00165	0.00165
	(A1 * !B1 * !X)	-0.00213	-0.00217	-0.00216
	(!A1 * !B1 * !X)	0.00155	0.00156	0.00155
	(!A1 * !B1 * !X)	-0.00222	-0.00223	-0.00222

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00091	-0.00091	-0.00094
	(A1 * B1 * X)	0.00074	0.00073	0.00071
	(A1 * !B1 * !X)	-0.00086	-0.00087	-0.00087
	(A1 * !B1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !B1 * !X)	-0.00079	-0.00081	-0.00081
	(!A1 * !B1 * !X)	0.00110	0.00110	0.00110
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00106	-0.00107	-0.00109
	(A1 * B1 * X)	0.00069	0.00069	0.00067
	(A1 * !B1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * !B1 * !X)	0.00107	0.00106	0.00106
	(!A1 * !B1 * !X)	-0.00090	-0.00094	-0.00094
	(!A1 * !B1 * !X)	0.00108	0.00109	0.00109
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00181	-0.00181	-0.00188
	(A1 * B1 * X)	0.00141	0.00140	0.00135
	(A1 * !B1 * !X)	-0.00164	-0.00165	-0.00165
	(A1 * !B1 * !X)	0.00215	0.00218	0.00216
	(!A1 * !B1 * !X)	-0.00151	-0.00156	-0.00155
	(!A1 * !B1 * !X)	0.00223	0.00223	0.00223

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00039	0.00039	0.00037
	(!A1 * !A2 * !X)	-0.00118	-0.00118	-0.00121
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00044	0.00044	0.00041
	(!A1 * !A2 * !X)	-0.00135	-0.00135	-0.00139
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00067	0.00067	0.00062
	(!A1 * !A2 * !X)	-0.00227	-0.00228	-0.00235

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * !X)	0.00121	0.00122	0.00122
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00041	-0.00040	-0.00040
	(!A1 * !A2 * !X)	0.00141	0.00140	0.00140
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00061	-0.00060	-0.00060
	(!A1 * !A2 * !X)	0.00238	0.00236	0.00236

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21bai_1	9.59040
sky130_fd_sc_hs__o21bai_2	14.38560
sky130_fd_sc_hs__o21bai_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__o21bai_1	0.00250	0.00282	0.00220	0.16140
sky130_fd_sc_hs__o21bai_2	0.00530	0.00491	0.00245	0.32156
sky130_fd_sc_hs__o21bai_4	0.00946	0.00977	0.00331	0.59682

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	0.00015	0.00024
sky130_fd_sc_hs__o21bai_2	0.00000	0.00028	0.00043
sky130_fd_sc_hs__o21bai_4	0.00000	0.00041	0.00062

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)	0.32010	1.91468	13.54250
	A2->Y (FR)	0.29098	1.83070	13.18870
	B1_N->Y (RR)	0.14372	0.86273	4.66440
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.29035	1.67830	13.63460
	A2->Y (FR)	0.24381	1.58134	13.26370
	B1_N->Y (RR)	0.13401	0.79451	4.84999
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.28776	1.51023	13.52240
	A2->Y (FR)	0.24118	1.41367	13.19000
	B1_N->Y (RR)	0.18476	1.03067	8.00691

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.06274	0.59066	4.54529
	A2->Y (RF)	0.05713	0.57937	4.52002
	B1_N->Y (FF)	0.21493	0.96646	5.42288
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.05841	0.54066	4.54188
	A2->Y (RF)	0.05433	0.52980	4.53911
	B1_N->Y (FF)	0.24464	1.01285	5.92168
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.06696	0.50829	4.55885
	A2->Y (RF)	0.05674	0.49053	4.52031
	B1_N->Y (FF)	0.21479	0.93410	5.63467

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00041	0.00034	0.00031
	A1	0.00361	0.00354	0.00350
	A2	0.00040	0.00029	0.00026
	A2	0.00329	0.00318	0.00315
	B1_N	0.00473	0.00457	0.00450
	B1_N	0.00307	0.00291	0.00284
sky130_fd_sc_hs__o21bai_2	A1	0.00041	0.00024	0.00020
	A1	0.00684	0.00666	0.00665
	A2	0.00046	0.00028	0.00025
	A2	0.00561	0.00543	0.00540
	B1_N	0.00654	0.00647	0.00645
	B1_N	0.00514	0.00506	0.00512
sky130_fd_sc_hs__o21bai_4	A1	0.00078	0.00045	0.00043
	A1	0.01325	0.01295	0.01290
	A2	0.00070	0.00028	0.00027
	A2	0.01122	0.01081	0.01077
	B1_N	0.00875	0.00868	0.00883
	B1_N	0.00778	0.00771	0.00789

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00447	0.00441	0.00437
	A1	0.00127	0.00120	0.00116
	A2	0.00364	0.00362	0.00361
	A2	0.00072	0.00069	0.00066
	B1_N	0.00358	0.00344	0.00337
	B1_N	0.00529	0.00513	0.00508
sky130_fd_sc_hs__o21bai_2	A1	0.00884	0.00869	0.00862
	A1	0.00242	0.00224	0.00217
	A2	0.00672	0.00670	0.00670
	A2	0.00150	0.00143	0.00143
	B1_N	0.00685	0.00674	0.00671
	B1_N	0.00833	0.00820	0.00813
sky130_fd_sc_hs__o21bai_4	A1	0.01747	0.01714	0.01700
	A1	0.00502	0.00463	0.00452
	A2	0.01340	0.01327	0.01340
	A2	0.00269	0.00253	0.00260
	B1_N	0.01346	0.01323	0.01330
	B1_N	0.01460	0.01440	0.01428

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)	0.00105	0.00105	0.00104
	(A2 * B1_N * Y)	-0.00117	-0.00120	-0.00119
	(A2 * !B1_N * !Y)	0.00104	0.00105	0.00104
	(A2 * !B1_N * !Y)	-0.00117	-0.00120	-0.00119
	(!A2 * B1_N * Y)	0.00100	0.00100	0.00099
	(!A2 * B1_N * Y)	-0.00123	-0.00123	-0.00122
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00215	0.00216	0.00214
	(A2 * B1_N * Y)	-0.00246	-0.00252	-0.00249
	(A2 * !B1_N * !Y)	0.00217	0.00220	0.00217
	(A2 * !B1_N * !Y)	-0.00239	-0.00247	-0.00245
	(!A2 * B1_N * Y)	0.00204	0.00206	0.00205
	(!A2 * B1_N * Y)	-0.00255	-0.00256	-0.00255
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00399	0.00403	0.00399
	(A2 * B1_N * Y)	-0.00473	-0.00488	-0.00483
	(A2 * !B1_N * !Y)	0.00404	0.00405	0.00401
	(A2 * !B1_N * !Y)	-0.00469	-0.00485	-0.00480
	(!A2 * B1_N * Y)	0.00382	0.00384	0.00380
	(!A2 * B1_N * Y)	-0.00498	-0.00500	-0.00497

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)	-0.00104	-0.00105	-0.00104
	(A2 * B1_N * Y)	0.00119	0.00121	0.00119
	(A2 * !B1_N * !Y)	-0.00104	-0.00105	-0.00104
	(A2 * !B1_N * !Y)	0.00119	0.00121	0.00119
	(!A2 * B1_N * Y)	-0.00098	-0.00100	-0.00099
	(!A2 * B1_N * Y)	0.00124	0.00123	0.00123
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00214	-0.00215	-0.00213
	(A2 * B1_N * Y)	0.00250	0.00252	0.00249
	(A2 * !B1_N * !Y)	-0.00217	-0.00219	-0.00217
	(A2 * !B1_N * !Y)	0.00246	0.00247	0.00245
	(!A2 * B1_N * Y)	-0.00201	-0.00206	-0.00205
	(!A2 * B1_N * Y)	0.00255	0.00257	0.00256
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00399	-0.00401	-0.00398
	(A2 * B1_N * Y)	0.00484	0.00488	0.00483
	(A2 * !B1_N * !Y)	-0.00402	-0.00404	-0.00401
	(A2 * !B1_N * !Y)	0.00481	0.00485	0.00480
	(!A2 * B1_N * Y)	-0.00374	-0.00383	-0.00380
	(!A2 * B1_N * Y)	0.00500	0.00501	0.00498

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)	0.00107	0.00108	0.00107
	(A1 * B1_N * Y)	-0.00128	-0.00131	-0.00130
	(A1 * !B1_N * !Y)	0.00123	0.00122	0.00122
	(A1 * !B1_N * !Y)	-0.00082	-0.00081	-0.00081
	(!A1 * B1_N * Y)	0.00102	0.00102	0.00102
	(!A1 * B1_N * Y)	-0.00134	-0.00134	-0.00134
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00195	0.00195	0.00195
	(A1 * B1_N * Y)	-0.00227	-0.00234	-0.00232
	(A1 * !B1_N * !Y)	0.00215	0.00214	0.00215
	(A1 * !B1_N * !Y)	-0.00147	-0.00146	-0.00146
	(!A1 * B1_N * Y)	0.00186	0.00187	0.00186
	(!A1 * B1_N * Y)	-0.00238	-0.00239	-0.00239
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00398	0.00397	0.00395
	(A1 * B1_N * Y)	-0.00476	-0.00484	-0.00482
	(A1 * !B1_N * !Y)	0.00453	0.00452	0.00451
	(A1 * !B1_N * !Y)	-0.00299	-0.00298	-0.00297
	(!A1 * B1_N * Y)	0.00379	0.00380	0.00377
	(!A1 * B1_N * Y)	-0.00500	-0.00501	-0.00498

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)	-0.00107	-0.00107	-0.00107
	(A1 * B1_N * Y)	0.00131	0.00131	0.00130
	(A1 * !B1_N * !Y)	-0.00119	-0.00120	-0.00122
	(A1 * !B1_N * !Y)	0.00084	0.00084	0.00082
	(!A1 * B1_N * Y)	-0.00099	-0.00102	-0.00102
	(!A1 * B1_N * Y)	0.00134	0.00135	0.00134
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00194	-0.00195	-0.00194
	(A1 * B1_N * Y)	0.00231	0.00234	0.00232
	(A1 * !B1_N * !Y)	-0.00207	-0.00208	-0.00214
	(A1 * !B1_N * !Y)	0.00152	0.00153	0.00147
	(!A1 * B1_N * Y)	-0.00182	-0.00187	-0.00186
	(!A1 * B1_N * Y)	0.00238	0.00240	0.00239
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00395	-0.00396	-0.00395
	(A1 * B1_N * Y)	0.00482	0.00484	0.00482
	(A1 * !B1_N * !Y)	-0.00431	-0.00434	-0.00450
	(A1 * !B1_N * !Y)	0.00314	0.00314	0.00301
	(!A1 * B1_N * Y)	-0.00371	-0.00380	-0.00377
	(!A1 * B1_N * Y)	0.00500	0.00502	0.00499

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)	0.00376	0.00359	0.00351
	(!A1 * !A2 * Y)	0.00138	0.00119	0.00112
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00546	0.00527	0.00517
	(!A1 * !A2 * Y)	0.00273	0.00251	0.00244
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00657	0.00627	0.00616
	(!A1 * !A2 * Y)	0.00284	0.00254	0.00244

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)	0.00024	0.00009	0.00006
	(!A1 * !A2 * Y)	0.00265	0.00250	0.00246
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00065	0.00047	0.00041
	(!A1 * !A2 * Y)	0.00343	0.00324	0.00316
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00123	0.00102	0.00094
	(!A1 * !A2 * Y)	0.00501	0.00480	0.00469

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ba_1	12.78720
sky130_fd_sc_hs__o21ba_2	12.78720
sky130_fd_sc_hs__o21ba_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__o21ba_1	0.00228	0.00245	0.00200	0.34006
sky130_fd_sc_hs__o21ba_2	0.00238	0.00252	0.00214	0.69264
sky130_fd_sc_hs__o21ba_4	0.00477	0.00456	0.00263	1.31551

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.00024	0.00031
sky130_fd_sc_hs__o21ba_2	0.00000	0.00031	0.00035
sky130_fd_sc_hs__o21ba_4	0.00000	0.00055	0.00063

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)	0.19251	1.21890	8.83137
	A2->X (RR)	0.18040	1.19811	8.74069
	B1_N->X (FR)	0.35314	1.65174	11.34770
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.18398	1.05799	8.92156
	A2->X (RR)	0.16986	1.03957	8.84876
	B1_N->X (FR)	0.35675	1.49839	11.45800
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.19173	0.96420	9.03329
	A2->X (RR)	0.18788	0.94702	8.95455
	B1_N->X (FR)	0.39163	1.45781	12.03820

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.48191	1.29631	6.87342
	A2->X (FF)	0.45166	1.21480	6.33959
	B1_N->X (RF)	0.24510	0.71501	2.96244
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.60349	1.42616	7.30225
	A2->X (FF)	0.57105	1.33743	6.82450
	B1_N->X (RF)	0.28879	0.76019	3.16249
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.57801	1.36931	7.20907
	A2->X (FF)	0.53692	1.27282	6.70486
	B1_N->X (RF)	0.30123	0.74103	3.06707

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00666	0.00667	0.00664
	A1	0.00371	0.00372	0.00371
	A2	0.00588	0.00583	0.00577
	A2	0.00325	0.00319	0.00315
	B1_N	0.00611	0.00608	0.00593
	B1_N	0.00765	0.00760	0.00751
sky130_fd_sc_hs__o21ba_2	A1	0.00830	0.00847	0.00852
	A1	0.00526	0.00544	0.00552
	A2	0.00749	0.00763	0.00764
	A2	0.00479	0.00492	0.00497
	B1_N	0.00759	0.00770	0.00762
	B1_N	0.00928	0.00937	0.00933
sky130_fd_sc_hs__o21ba_4	A1	0.01598	0.01626	0.01638
	A1	0.00998	0.01026	0.01041
	A2	0.01401	0.01424	0.01436
	A2	0.00910	0.00932	0.00952
	B1_N	0.01415	0.01456	0.01460
	B1_N	0.01578	0.01623	0.01632

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00263	0.00271	0.00316
	A1	0.00556	0.00564	0.00560
	A2	0.00264	0.00264	0.00266
	A2	0.00523	0.00524	0.00520
	B1_N	0.00691	0.00663	0.00646
	B1_N	0.00539	0.00512	0.00494
sky130_fd_sc_hs__o21ba_2	A1	0.00406	0.00434	0.00573
	A1	0.00707	0.00736	0.00736
	A2	0.00407	0.00427	0.00433
	A2	0.00673	0.00694	0.00693
	B1_N	0.00878	0.00859	0.00838
	B1_N	0.00711	0.00692	0.00670
sky130_fd_sc_hs__o21ba_4	A1	0.00768	0.00828	0.01113
	A1	0.01364	0.01427	0.01433
	A2	0.00796	0.00837	0.01028
	A2	0.01278	0.01324	0.01333
	B1_N	0.01452	0.01469	0.01444
	B1_N	0.01290	0.01307	0.01291

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)	0.00091	0.00092	0.00091
	(A2 * B1_N * !X)	-0.00110	-0.00112	-0.00112
	(A2 * !B1_N * X)	0.00090	0.00092	0.00091
	(A2 * !B1_N * X)	-0.00109	-0.00112	-0.00112
	(!A2 * B1_N * !X)	0.00087	0.00087	0.00087
	(!A2 * B1_N * !X)	-0.00114	-0.00114	-0.00114
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00104	0.00105	0.00104
	(A2 * B1_N * !X)	-0.00108	-0.00110	-0.00109
	(A2 * !B1_N * X)	0.00105	0.00105	0.00105
	(A2 * !B1_N * X)	-0.00108	-0.00109	-0.00109
	(!A2 * B1_N * !X)	0.00101	0.00100	0.00100
	(!A2 * B1_N * !X)	-0.00111	-0.00112	-0.00112
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00202	0.00205	0.00203
	(A2 * B1_N * !X)	-0.00217	-0.00223	-0.00222
	(A2 * !B1_N * X)	0.00205	0.00207	0.00205
	(A2 * !B1_N * X)	-0.00214	-0.00221	-0.00220
	(!A2 * B1_N * !X)	0.00194	0.00195	0.00194
	(!A2 * B1_N * !X)	-0.00228	-0.00230	-0.00228

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)	-0.00091	-0.00091	-0.00091
	(A2 * B1_N * !X)	0.00112	0.00112	0.00112
	(A2 * !B1_N * X)	-0.00090	-0.00091	-0.00091
	(A2 * !B1_N * X)	0.00112	0.00112	0.00112
	(!A2 * B1_N * !X)	-0.00085	-0.00087	-0.00087
	(!A2 * B1_N * !X)	0.00115	0.00115	0.00114
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00104	-0.00105	-0.00104
	(A2 * B1_N * !X)	0.00109	0.00111	0.00109
	(A2 * !B1_N * X)	-0.00104	-0.00104	-0.00104
	(A2 * !B1_N * X)	0.00110	0.00109	0.00109
	(!A2 * B1_N * !X)	-0.00097	-0.00100	-0.00100
	(!A2 * B1_N * !X)	0.00111	0.00112	0.00112
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00202	-0.00204	-0.00203
	(A2 * B1_N * !X)	0.00222	0.00223	0.00222
	(A2 * !B1_N * X)	-0.00205	-0.00206	-0.00205
	(A2 * !B1_N * X)	0.00220	0.00221	0.00220
	(!A2 * B1_N * !X)	-0.00190	-0.00195	-0.00194
	(!A2 * B1_N * !X)	0.00228	0.00231	0.00229

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)	0.00096	0.00096	0.00096
	(A1 * B1_N * !X)	-0.00111	-0.00112	-0.00112
	(A1 * !B1_N * X)	0.00103	0.00102	0.00102
	(A1 * !B1_N * X)	-0.00078	-0.00077	-0.00077
	(!A1 * B1_N * !X)	0.00092	0.00093	0.00092
	(!A1 * B1_N * !X)	-0.00115	-0.00116	-0.00115
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00107	0.00107	0.00107
	(A1 * B1_N * !X)	-0.00109	-0.00111	-0.00110
	(A1 * !B1_N * X)	0.00117	0.00115	0.00115
	(A1 * !B1_N * X)	-0.00074	-0.00072	-0.00072
	(!A1 * B1_N * !X)	0.00103	0.00103	0.00102
	(!A1 * B1_N * !X)	-0.00113	-0.00114	-0.00113
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00171	0.00171	0.00171
	(A1 * B1_N * !X)	-0.00219	-0.00223	-0.00222
	(A1 * !B1_N * X)	0.00193	0.00193	0.00194
	(A1 * !B1_N * X)	-0.00140	-0.00140	-0.00140
	(!A1 * B1_N * !X)	0.00161	0.00162	0.00161
	(!A1 * B1_N * !X)	-0.00230	-0.00230	-0.00230

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)	-0.00096	-0.00096	-0.00096
	(A1 * B1_N * !X)	0.00114	0.00112	0.00112
	(A1 * !B1_N * X)	-0.00099	-0.00099	-0.00102
	(A1 * !B1_N * X)	0.00080	0.00080	0.00078
	(!A1 * B1_N * !X)	-0.00091	-0.00093	-0.00092
	(!A1 * B1_N * !X)	0.00115	0.00116	0.00115
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00107	-0.00107	-0.00107
	(A1 * B1_N * !X)	0.00112	0.00111	0.00110
	(A1 * !B1_N * X)	-0.00112	-0.00112	-0.00115
	(A1 * !B1_N * X)	0.00076	0.00076	0.00073
	(!A1 * B1_N * !X)	-0.00100	-0.00103	-0.00102
	(!A1 * B1_N * !X)	0.00113	0.00114	0.00113
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00170	-0.00171	-0.00171
	(A1 * B1_N * !X)	0.00222	0.00224	0.00222
	(A1 * !B1_N * X)	-0.00187	-0.00188	-0.00193
	(A1 * !B1_N * X)	0.00147	0.00146	0.00142
	(!A1 * B1_N * !X)	-0.00157	-0.00162	-0.00161
	(!A1 * B1_N * !X)	0.00230	0.00231	0.00230

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)	0.00347	0.00330	0.00324
	(!A1 * !A2 * !X)	0.00125	0.00108	0.00103
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00380	0.00363	0.00356
	(!A1 * !A2 * !X)	0.00147	0.00128	0.00122
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00530	0.00509	0.00501
	(!A1 * !A2 * !X)	0.00240	0.00218	0.00210

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)	0.00032	0.00019	0.00017
	(!A1 * !A2 * !X)	0.00254	0.00242	0.00239
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00027	0.00013	0.00010
	(!A1 * !A2 * !X)	0.00262	0.00247	0.00244
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00045	0.00029	0.00024
	(!A1 * !A2 * !X)	0.00339	0.00322	0.00315

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221ai_1	12.78720
sky130_fd_sc_hs__o221ai_2	19.18080
sky130_fd_sc_hs__o221ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__o221ai_1	0.00258	0.00277	0.00271	0.00266	0.00273	0.15972
sky130_fd_sc_hs__o221ai_2	0.00530	0.00489	0.00558	0.00489	0.00500	0.31315
sky130_fd_sc_hs__o221ai_4	0.01003	0.00969	0.01020	0.00966	0.00997	0.59993

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.00012	0.00029
sky130_fd_sc_hs__o221ai_2	0.00000	0.00024	0.00058
sky130_fd_sc_hs__o221ai_4	0.00000	0.00049	0.00116

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)	0.50210	2.10128	13.67880
	A2->Y (FR)	0.46674	2.00554	13.31130
	B1->Y (FR)	0.37011	1.94753	13.47560
	B2->Y (FR)	0.33144	1.85752	13.10960
	C1->Y (FR)	0.11703	1.15453	9.24082
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.44144	1.83188	13.65940
	A2->Y (FR)	0.39553	1.72775	13.27960
	B1->Y (FR)	0.32446	1.69818	13.49530
	B2->Y (FR)	0.27635	1.59881	13.11930
	C1->Y (FR)	0.08971	1.04381	9.21576
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.42194	1.63730	13.50730
	A2->Y (FR)	0.37789	1.54259	13.16440
	B1->Y (FR)	0.31460	1.52929	13.54980
	B2->Y (FR)	0.26776	1.43223	13.19230
	C1->Y (FR)	0.08842	0.97577	9.22297

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.10856	0.67272	4.73209
	A2->Y (RF)	0.09991	0.65964	4.70968
	B1->Y (RF)	0.09876	0.71283	5.24163
	B2->Y (RF)	0.08748	0.69206	5.17281
	C1->Y (RF)	0.08269	0.72890	5.46905
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.09007	0.60067	4.74550
	A2->Y (RF)	0.08246	0.58898	4.74836
	B1->Y (RF)	0.07979	0.64042	5.27815
	B2->Y (RF)	0.07231	0.63779	5.37988
	C1->Y (RF)	0.05240	0.63710	5.58435
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.09449	0.56475	4.79959
	A2->Y (RF)	0.08515	0.54898	4.79270
	B1->Y (RF)	0.08528	0.61381	5.46398
	B2->Y (RF)	0.07493	0.59674	5.47226
	C1->Y (RF)	0.05563	0.60591	5.83138

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00148	0.00137	0.00132
	A1	0.00694	0.00684	0.00678
	A2	0.00154	0.00139	0.00134
	A2	0.00652	0.00639	0.00632
	B1	0.00052	0.00038	0.00034
	B1	0.00529	0.00515	0.00511
	B2	0.00056	0.00040	0.00037
	B2	0.00474	0.00460	0.00455
	C1	-0.00026	-0.00039	-0.00041
	C1	0.00387	0.00374	0.00371
sky130_fd_sc_hs__o221ai_2	A1	0.00232	0.00206	0.00199
	A1	0.01278	0.01255	0.01247
	A2	0.00236	0.00208	0.00203
	A2	0.01161	0.01136	0.01127
	B1	0.00058	0.00027	0.00023
	B1	0.00981	0.00950	0.00948
	B2	0.00066	0.00035	0.00032
	B2	0.00863	0.00830	0.00825
	C1	-0.00103	-0.00121	-0.00122
	C1	0.00662	0.00646	0.00645

sky130_fd_sc_hs__o221ai_4	**A1**	0.00393	0.00344	0.00334
	A1	0.02459	0.02416	0.02400
	A2	0.00404	0.00346	0.00339
	A2	0.02247	0.02194	0.02176
	B1	0.00082	0.00021	0.00017
	B1	0.01892	0.01833	0.01831
	B2	0.00088	0.00021	0.00020
	B2	0.01678	0.01612	0.01606
	C1	-0.00191	-0.00229	-0.00224
	C1	0.01331	0.01292	0.01299

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.00739	0.00733	0.00728
	A1	0.00170	0.00163	0.00157
	A2	0.00643	0.00641	0.00638
	A2	0.00117	0.00114	0.00109
	B1	0.00649	0.00645	0.00634
	B1	0.00173	0.00165	0.00160
	B2	0.00553	0.00552	0.00546
	B2	0.00131	0.00128	0.00122
	C1	0.00582	0.00573	0.00576
	C1	0.00175	0.00167	0.00161

sky130_fd_sc_hs__o221ai_2	**A1**	0.01367	0.01351	0.01344
	A1	0.00278	0.00261	0.00249
	A2	0.01160	0.01154	0.01145
	A2	0.00184	0.00177	0.00171
	B1	0.01208	0.01195	0.01179
	B1	0.00282	0.00266	0.00255
	B2	0.00986	0.00983	0.00973
	B2	0.00183	0.00177	0.00171
	C1	0.01033	0.01022	0.01006
	C1	0.00281	0.00266	0.00256
sky130_fd_sc_hs__o221ai_4	**A1**	0.02703	0.02673	0.02658
	A1	0.00553	0.00518	0.00500
	A2	0.02299	0.02281	0.02284
	A2	0.00360	0.00340	0.00332
	B1	0.02366	0.02332	0.02322
	B1	0.00557	0.00523	0.00504
	B2	0.01971	0.01956	0.01974
	B2	0.00368	0.00348	0.00340
	C1	0.02047	0.02012	0.02015
	C1	0.00553	0.00513	0.00499

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)**	0.00111	0.00112	0.00111
	(A2 * B2 * C1 * !Y)	-0.00120	-0.00123	-0.00122
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00112	0.00112	0.00111
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00120	-0.00123	-0.00122
	(A2 * B1 * !B2 * C1 * !Y)	0.00111	0.00112	0.00111
	(A2 * B1 * !B2 * C1 * !Y)	-0.00120	-0.00123	-0.00122
	(A2 * !B1 * !B2 * Y)	0.00112	0.00112	0.00111
	(A2 * !B1 * !B2 * Y)	-0.00120	-0.00123	-0.00122
	(!A2 * B2 * !C1 * Y)	0.00101	0.00102	0.00101
	(!A2 * B2 * !C1 * Y)	-0.00125	-0.00125	-0.00124
	(!A2 * B1 * !B2 * !C1 * Y)	0.00102	0.00103	0.00102
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * !B2 * C1 * Y)	0.00104	0.00105	0.00104
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00104	0.00105	0.00104
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00213	0.00215	0.00213
	(A2 * B2 * C1 * !Y)	-0.00235	-0.00244	-0.00241
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00204	0.00206	0.00205
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00245	-0.00253	-0.00250
	(A2 * B1 * !B2 * C1 * !Y)	0.00213	0.00215	0.00213
	(A2 * B1 * !B2 * C1 * !Y)	-0.00235	-0.00244	-0.00241
	(A2 * !B1 * !B2 * Y)	0.00206	0.00207	0.00205
	(A2 * !B1 * !B2 * Y)	-0.00247	-0.00253	-0.00250
	(!A2 * B2 * !C1 * Y)	0.00184	0.00186	0.00184
	(!A2 * B2 * !C1 * Y)	-0.00256	-0.00258	-0.00256
	(!A2 * B1 * !B2 * !C1 * Y)	0.00186	0.00188	0.00187
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00256	-0.00258	-0.00256
	(!A2 * !B1 * !B2 * C1 * Y)	0.00190	0.00193	0.00191
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00255	-0.00257	-0.00256
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00191	0.00192	0.00191
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00256	-0.00257	-0.00256

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00420	0.00424	0.00419
	(A2 * B2 * C1 * !Y)	-0.00462	-0.00479	-0.00474
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00413	0.00418	0.00414
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00470	-0.00485	-0.00480
	(A2 * B1 * !B2 * C1 * !Y)	0.00420	0.00424	0.00419
	(A2 * B1 * !B2 * C1 * !Y)	-0.00462	-0.00479	-0.00474
	(A2 * !B1 * !B2 * Y)	0.00413	0.00418	0.00414
	(A2 * !B1 * !B2 * Y)	-0.00470	-0.00485	-0.00480
	(!A2 * B2 * !C1 * Y)	0.00371	0.00373	0.00370
	(!A2 * B2 * !C1 * Y)	-0.00493	-0.00496	-0.00493
	(!A2 * B1 * !B2 * !C1 * Y)	0.00375	0.00379	0.00375
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00493	-0.00496	-0.00493
	(!A2 * !B1 * !B2 * C1 * Y)	0.00385	0.00388	0.00384
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00492	-0.00495	-0.00492
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00385	0.00388	0.00384
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00492	-0.00495	-0.00493

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)**	-0.00111	-0.00112	-0.00111
	(A2 * B2 * C1 * !Y)	0.00123	0.00123	0.00122
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00112	-0.00112	-0.00111
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00123	0.00123	0.00122
	(A2 * B1 * !B2 * C1 * !Y)	-0.00111	-0.00112	-0.00111
	(A2 * B1 * !B2 * C1 * !Y)	0.00123	0.00123	0.00122
	(A2 * !B1 * !B2 * Y)	-0.00111	-0.00112	-0.00111
	(A2 * !B1 * !B2 * Y)	0.00122	0.00123	0.00122
	(!A2 * B2 * !C1 * Y)	-0.00096	-0.00102	-0.00101
	(!A2 * B2 * !C1 * Y)	0.00126	0.00125	0.00125
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00097	-0.00103	-0.00102
	(!A2 * B1 * !B2 * !C1 * Y)	0.00125	0.00125	0.00125
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00101	-0.00104	-0.00104
	(!A2 * !B1 * !B2 * C1 * Y)	0.00125	0.00125	0.00125
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00101	-0.00104	-0.00104
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00125	0.00125	0.00125

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00212	-0.00214	-0.00213
	(A2 * B2 * C1 * !Y)	0.00239	0.00244	0.00241
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00204	-0.00205	-0.00204
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00250	0.00253	0.00250
	(A2 * B1 * !B2 * C1 * !Y)	-0.00212	-0.00214	-0.00213
	(A2 * B1 * !B2 * C1 * !Y)	0.00240	0.00244	0.00241
	(A2 * !B1 * !B2 * Y)	-0.00205	-0.00205	-0.00204
	(A2 * !B1 * !B2 * Y)	0.00251	0.00253	0.00250
	(!A2 * B2 * !C1 * Y)	-0.00174	-0.00186	-0.00184
	(!A2 * B2 * !C1 * Y)	0.00256	0.00258	0.00257
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00178	-0.00188	-0.00187
	(!A2 * B1 * !B2 * !C1 * Y)	0.00256	0.00258	0.00257
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00186	-0.00192	-0.00191
	(!A2 * !B1 * !B2 * C1 * Y)	0.00258	0.00258	0.00257
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00186	-0.00192	-0.00191
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00258	0.00258	0.00257

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00417	-0.00421	-0.00419
	(A2 * B2 * C1 * !Y)	0.00471	0.00479	0.00474
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00413	-0.00415	-0.00413
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00480	0.00485	0.00480
	(A2 * B1 * !B2 * C1 * !Y)	-0.00418	-0.00421	-0.00419
	(A2 * B1 * !B2 * C1 * !Y)	0.00472	0.00479	0.00474
	(A2 * !B1 * !B2 * Y)	-0.00413	-0.00416	-0.00413
	(A2 * !B1 * !B2 * Y)	0.00482	0.00485	0.00480
	(!A2 * B2 * !C1 * Y)	-0.00349	-0.00373	-0.00370
	(!A2 * B2 * !C1 * Y)	0.00493	0.00497	0.00494
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00359	-0.00379	-0.00375
	(!A2 * B1 * !B2 * !C1 * Y)	0.00496	0.00497	0.00494
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00372	-0.00387	-0.00384
	(!A2 * !B1 * !B2 * C1 * Y)	0.00492	0.00496	0.00494
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00372	-0.00388	-0.00384
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00492	0.00496	0.00494

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)**	0.00119	0.00118	0.00118
	(A1 * B2 * C1 * !Y)	-0.00081	-0.00080	-0.00080
	(A1 * B2 * !C1 * Y)	0.00100	0.00101	0.00101
	(A1 * B2 * !C1 * Y)	-0.00128	-0.00131	-0.00130
	(A1 * B1 * !B2 * C1 * !Y)	0.00119	0.00118	0.00118
	(A1 * B1 * !B2 * C1 * !Y)	-0.00081	-0.00080	-0.00080
	(A1 * B1 * !B2 * !C1 * Y)	0.00101	0.00101	0.00101
	(A1 * B1 * !B2 * !C1 * Y)	-0.00128	-0.00131	-0.00130
	(A1 * !B1 * !B2 * C1 * Y)	0.00101	0.00101	0.00101
	(A1 * !B1 * !B2 * C1 * Y)	-0.00128	-0.00131	-0.00130
	(A1 * !B1 * !B2 * !C1 * Y)	0.00101	0.00101	0.00101
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00128	-0.00131	-0.00130
	(!A1 * B2 * !C1 * Y)	0.00091	0.00093	0.00092
	(!A1 * B2 * !C1 * Y)	-0.00133	-0.00133	-0.00133
	(!A1 * B1 * !B2 * !C1 * Y)	0.00093	0.00094	0.00093
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00133	-0.00133	-0.00133
	(!A1 * !B1 * !B2 * C1 * Y)	0.00094	0.00095	0.00094
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00133	-0.00133	-0.00133
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00094	0.00095	0.00094
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00133	-0.00134	-0.00133

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00212	0.00213	0.00214
	(A1 * B2 * C1 * !Y)	-0.00145	-0.00145	-0.00145
	(A1 * B2 * !C1 * Y)	0.00194	0.00195	0.00194
	(A1 * B2 * !C1 * Y)	-0.00227	-0.00233	-0.00231
	(A1 * B1 * !B2 * C1 * !Y)	0.00212	0.00213	0.00214
	(A1 * B1 * !B2 * C1 * !Y)	-0.00145	-0.00145	-0.00145
	(A1 * B1 * !B2 * !C1 * Y)	0.00195	0.00194	0.00193
	(A1 * B1 * !B2 * !C1 * Y)	-0.00228	-0.00233	-0.00231
	(A1 * !B1 * !B2 * C1 * Y)	0.00192	0.00194	0.00194
	(A1 * !B1 * !B2 * C1 * Y)	-0.00225	-0.00233	-0.00231
	(A1 * !B1 * !B2 * !C1 * Y)	0.00192	0.00195	0.00194
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00226	-0.00234	-0.00232
	(!A1 * B2 * !C1 * Y)	0.00174	0.00175	0.00174
	(!A1 * B2 * !C1 * Y)	-0.00238	-0.00239	-0.00238
	(!A1 * B1 * !B2 * !C1 * Y)	0.00176	0.00178	0.00176
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00238	-0.00239	-0.00238
	(!A1 * !B1 * !B2 * C1 * Y)	0.00179	0.00182	0.00180
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00237	-0.00239	-0.00238
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00180	0.00181	0.00180
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00238	-0.00239	-0.00238

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00430	0.00432	0.00432
	(A1 * B2 * C1 * !Y)	-0.00289	-0.00291	-0.00290
	(A1 * B2 * !C1 * Y)	0.00377	0.00380	0.00377
	(A1 * B2 * !C1 * Y)	-0.00467	-0.00480	-0.00476
	(A1 * B1 * !B2 * C1 * !Y)	0.00430	0.00432	0.00432
	(A1 * B1 * !B2 * C1 * !Y)	-0.00289	-0.00291	-0.00290
	(A1 * B1 * !B2 * !C1 * Y)	0.00380	0.00379	0.00377
	(A1 * B1 * !B2 * !C1 * Y)	-0.00471	-0.00480	-0.00476
	(A1 * !B1 * !B2 * C1 * Y)	0.00377	0.00378	0.00377
	(A1 * !B1 * !B2 * C1 * Y)	-0.00467	-0.00479	-0.00475
	(A1 * !B1 * !B2 * !C1 * Y)	0.00381	0.00379	0.00377
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00471	-0.00481	-0.00477
	(!A1 * B2 * !C1 * Y)	0.00342	0.00338	0.00340
	(!A1 * B2 * !C1 * Y)	-0.00490	-0.00488	-0.00490
	(!A1 * B1 * !B2 * !C1 * Y)	0.00344	0.00348	0.00345
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00490	-0.00492	-0.00490
	(!A1 * !B1 * !B2 * C1 * Y)	0.00352	0.00355	0.00352
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00488	-0.00492	-0.00490
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00351	0.00351	0.00352
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00488	-0.00489	-0.00490

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)**	-0.00114	-0.00115	-0.00118
	(A1 * B2 * C1 * !Y)	0.00083	0.00083	0.00081
	(A1 * B2 * !C1 * Y)	-0.00100	-0.00101	-0.00100
	(A1 * B2 * !C1 * Y)	0.00131	0.00131	0.00130
	(A1 * B1 * !B2 * C1 * !Y)	-0.00114	-0.00114	-0.00118
	(A1 * B1 * !B2 * C1 * !Y)	0.00083	0.00083	0.00080
	(A1 * B1 * !B2 * !C1 * Y)	-0.00101	-0.00101	-0.00100
	(A1 * B1 * !B2 * !C1 * Y)	0.00131	0.00131	0.00130
	(A1 * !B1 * !B2 * C1 * Y)	-0.00101	-0.00101	-0.00100
	(A1 * !B1 * !B2 * C1 * Y)	0.00131	0.00131	0.00130
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00100	-0.00101	-0.00100
	(A1 * !B1 * !B2 * !C1 * Y)	0.00130	0.00131	0.00130
	(!A1 * B2 * !C1 * Y)	-0.00086	-0.00092	-0.00092
	(!A1 * B2 * !C1 * Y)	0.00133	0.00133	0.00134
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00088	-0.00093	-0.00093
	(!A1 * B1 * !B2 * !C1 * Y)	0.00133	0.00133	0.00134
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00091	-0.00094	-0.00094
	(!A1 * !B1 * !B2 * C1 * Y)	0.00134	0.00133	0.00134
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00091	-0.00095	-0.00094
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00134	0.00134	0.00134

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00206	-0.00207	-0.00213
	(A1 * B2 * C1 * !Y)	0.00153	0.00153	0.00147
	(A1 * B2 * !C1 * Y)	-0.00193	-0.00194	-0.00193
	(A1 * B2 * !C1 * Y)	0.00231	0.00233	0.00231
	(A1 * B1 * !B2 * C1 * !Y)	-0.00206	-0.00207	-0.00213
	(A1 * B1 * !B2 * C1 * !Y)	0.00153	0.00153	0.00147
	(A1 * B1 * !B2 * !C1 * Y)	-0.00192	-0.00194	-0.00193
	(A1 * B1 * !B2 * !C1 * Y)	0.00230	0.00233	0.00231
	(A1 * !B1 * !B2 * C1 * Y)	-0.00192	-0.00194	-0.00193
	(A1 * !B1 * !B2 * C1 * Y)	0.00230	0.00233	0.00231
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00192	-0.00194	-0.00193
	(A1 * !B1 * !B2 * !C1 * Y)	0.00232	0.00234	0.00232
	(!A1 * B2 * !C1 * Y)	-0.00165	-0.00175	-0.00174
	(!A1 * B2 * !C1 * Y)	0.00238	0.00240	0.00239
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00169	-0.00178	-0.00176
	(!A1 * B1 * !B2 * !C1 * Y)	0.00238	0.00240	0.00239
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00176	-0.00182	-0.00180
	(!A1 * !B1 * !B2 * C1 * Y)	0.00239	0.00240	0.00239
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00176	-0.00181	-0.00180
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00239	0.00240	0.00239

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00416	-0.00418	-0.00431
	(A1 * B2 * C1 * !Y)	0.00306	0.00305	0.00294
	(A1 * B2 * !C1 * Y)	-0.00374	-0.00378	-0.00376
	(A1 * B2 * !C1 * Y)	0.00473	0.00480	0.00476
	(A1 * B1 * !B2 * C1 * !Y)	-0.00416	-0.00418	-0.00431
	(A1 * B1 * !B2 * C1 * !Y)	0.00306	0.00305	0.00294
	(A1 * B1 * !B2 * !C1 * Y)	-0.00377	-0.00378	-0.00376
	(A1 * B1 * !B2 * !C1 * Y)	0.00478	0.00480	0.00476
	(A1 * !B1 * !B2 * C1 * Y)	-0.00376	-0.00378	-0.00376
	(A1 * !B1 * !B2 * C1 * Y)	0.00474	0.00479	0.00475
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00377	-0.00378	-0.00376
	(A1 * !B1 * !B2 * !C1 * Y)	0.00478	0.00481	0.00477
	(!A1 * B2 * !C1 * Y)	-0.00321	-0.00338	-0.00340
	(!A1 * B2 * !C1 * Y)	0.00490	0.00493	0.00491
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00330	-0.00348	-0.00345
	(!A1 * B1 * !B2 * !C1 * Y)	0.00492	0.00493	0.00491
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00340	-0.00355	-0.00352
	(!A1 * !B1 * !B2 * C1 * Y)	0.00488	0.00492	0.00491
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00340	-0.00351	-0.00352
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00488	0.00492	0.00491

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)**	0.00117	0.00118	0.00117
	(A2 * B2 * C1 * !Y)	-0.00116	-0.00120	-0.00118
	(A2 * !B2 * !C1 * Y)	0.00101	0.00101	0.00101
	(A2 * !B2 * !C1 * Y)	-0.00132	-0.00133	-0.00132
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00106	0.00106	0.00105
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00128	-0.00131	-0.00130
	(A1 * !A2 * B2 * C1 * !Y)	0.00117	0.00118	0.00117
	(A1 * !A2 * B2 * C1 * !Y)	-0.00116	-0.00118	-0.00118
	(A1 * !A2 * !B2 * !C1 * Y)	0.00100	0.00101	0.00101
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00132	-0.00133	-0.00132
	(!A1 * !A2 * B2 * C1 * Y)	0.00055	0.00055	0.00055
	(!A1 * !A2 * B2 * C1 * Y)	-0.00128	-0.00131	-0.00130
	(!A1 * !A2 * B2 * !C1 * Y)	0.00063	0.00063	0.00063
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00128	-0.00130	-0.00130
	(!A1 * !A2 * !B2 * C1 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00132	-0.00133	-0.00131
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00066	0.00067	0.00066
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00133	-0.00133	-0.00133

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00228	0.00230	0.00228
	(A2 * B2 * C1 * !Y)	-0.00228	-0.00236	-0.00234
	(A2 * !B2 * !C1 * Y)	0.00191	0.00193	0.00192
	(A2 * !B2 * !C1 * Y)	-0.00262	-0.00263	-0.00262
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00204	0.00208	0.00206
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00251	-0.00259	-0.00257
	(A1 * !A2 * B2 * C1 * !Y)	0.00228	0.00230	0.00228
	(A1 * !A2 * B2 * C1 * !Y)	-0.00228	-0.00235	-0.00234
	(A1 * !A2 * !B2 * !C1 * Y)	0.00192	0.00193	0.00192
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00262	-0.00263	-0.00262
	(!A1 * !A2 * B2 * C1 * Y)	0.00101	0.00101	0.00100
	(!A1 * !A2 * B2 * C1 * Y)	-0.00254	-0.00259	-0.00258
	(!A1 * !A2 * B2 * !C1 * Y)	0.00116	0.00117	0.00116
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00254	-0.00260	-0.00257
	(!A1 * !A2 * !B2 * C1 * Y)	0.00104	0.00105	0.00105
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00261	-0.00262	-0.00260
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00263	-0.00263	-0.00262

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00429	0.00432	0.00428
	(A2 * B2 * C1 * !Y)	-0.00454	-0.00465	-0.00464
	(A2 * !B2 * !C1 * Y)	0.00371	0.00375	0.00372
	(A2 * !B2 * !C1 * Y)	-0.00505	-0.00509	-0.00506
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00398	0.00402	0.00398
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00485	-0.00497	-0.00494
	(A1 * !A2 * B2 * C1 * !Y)	0.00429	0.00431	0.00428
	(A1 * !A2 * B2 * C1 * !Y)	-0.00454	-0.00468	-0.00464
	(A1 * !A2 * !B2 * !C1 * Y)	0.00371	0.00375	0.00372
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00505	-0.00509	-0.00506
	(!A1 * !A2 * B2 * C1 * Y)	0.00188	0.00190	0.00188
	(!A1 * !A2 * B2 * C1 * Y)	-0.00486	-0.00500	-0.00497
	(!A1 * !A2 * B2 * !C1 * Y)	0.00217	0.00219	0.00217
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00487	-0.00500	-0.00495
	(!A1 * !A2 * !B2 * C1 * Y)	0.00196	0.00198	0.00198
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00503	-0.00507	-0.00501
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00229	0.00231	0.00229
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00506	-0.00510	-0.00507

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)**	-0.00117	-0.00117	-0.00117
	(A2 * B2 * C1 * !Y)	0.00119	0.00120	0.00118
	(A2 * !B2 * !C1 * Y)	-0.00098	-0.00101	-0.00101
	(A2 * !B2 * !C1 * Y)	0.00132	0.00133	0.00133
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00105	-0.00106	-0.00105
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00129	0.00131	0.00130
	(A1 * !A2 * B2 * C1 * !Y)	-0.00117	-0.00116	-0.00117
	(A1 * !A2 * B2 * C1 * !Y)	0.00119	0.00118	0.00118
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00098	-0.00101	-0.00101
	(A1 * !A2 * !B2 * !C1 * Y)	0.00133	0.00134	0.00133
	(!A1 * !A2 * B2 * C1 * Y)	-0.00054	-0.00053	-0.00054
	(!A1 * !A2 * B2 * C1 * Y)	0.00133	0.00132	0.00130
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00063	-0.00063	-0.00063
	(!A1 * !A2 * B2 * !C1 * Y)	0.00131	0.00130	0.00130
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00054	-0.00054	-0.00055
	(!A1 * !A2 * !B2 * C1 * Y)	0.00135	0.00135	0.00133
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00066	-0.00067	-0.00066
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00133	0.00133	0.00133

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00228	-0.00230	-0.00228
	(A2 * B2 * C1 * !Y)	0.00234	0.00237	0.00234
	(A2 * !B2 * !C1 * Y)	-0.00186	-0.00193	-0.00192
	(A2 * !B2 * !C1 * Y)	0.00262	0.00265	0.00263
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00204	-0.00207	-0.00205
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00258	0.00259	0.00257
	(A1 * !A2 * B2 * C1 * !Y)	-0.00228	-0.00229	-0.00228
	(A1 * !A2 * B2 * C1 * !Y)	0.00233	0.00235	0.00234
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00185	-0.00193	-0.00192
	(A1 * !A2 * !B2 * !C1 * Y)	0.00262	0.00265	0.00263
	(!A1 * !A2 * B2 * C1 * Y)	-0.00097	-0.00097	-0.00099
	(!A1 * !A2 * B2 * C1 * Y)	0.00266	0.00266	0.00258
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00116	-0.00117	-0.00116
	(!A1 * !A2 * B2 * !C1 * Y)	0.00259	0.00260	0.00257
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00097	-0.00097	-0.00101
	(!A1 * !A2 * !B2 * C1 * Y)	0.00270	0.00270	0.00264
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00122	-0.00123	-0.00122
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00264	0.00263	0.00263

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00429	-0.00428	-0.00428
	(A2 * B2 * C1 * !Y)	0.00466	0.00465	0.00464
	(A2 * !B2 * !C1 * Y)	-0.00358	-0.00375	-0.00372
	(A2 * !B2 * !C1 * Y)	0.00508	0.00511	0.00507
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00398	-0.00399	-0.00398
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00497	0.00497	0.00494
	(A1 * !A2 * B2 * C1 * !Y)	-0.00429	-0.00429	-0.00428
	(A1 * !A2 * B2 * C1 * !Y)	0.00465	0.00468	0.00464
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00356	-0.00375	-0.00372
	(A1 * !A2 * !B2 * !C1 * Y)	0.00508	0.00511	0.00507
	(!A1 * !A2 * B2 * C1 * Y)	-0.00182	-0.00183	-0.00186
	(!A1 * !A2 * B2 * C1 * Y)	0.00509	0.00512	0.00497
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00217	-0.00219	-0.00217
	(!A1 * !A2 * B2 * !C1 * Y)	0.00497	0.00501	0.00495
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00184	-0.00185	-0.00189
	(!A1 * !A2 * !B2 * C1 * Y)	0.00522	0.00524	0.00510
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00229	-0.00231	-0.00229
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00506	0.00510	0.00508

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)**	0.00115	0.00115	0.00115
	(A2 * B1 * C1 * !Y)	-0.00073	-0.00073	-0.00073
	(A2 * B1 * !C1 * Y)	0.00100	0.00101	0.00100
	(A2 * B1 * !C1 * Y)	-0.00119	-0.00122	-0.00121
	(A2 * !B1 * !C1 * Y)	0.00095	0.00096	0.00096
	(A2 * !B1 * !C1 * Y)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * B1 * C1 * !Y)	0.00115	0.00115	0.00115
	(A1 * !A2 * B1 * C1 * !Y)	-0.00073	-0.00073	-0.00073
	(A1 * !A2 * B1 * !C1 * Y)	0.00100	0.00101	0.00100
	(A1 * !A2 * B1 * !C1 * Y)	-0.00119	-0.00122	-0.00121
	(A1 * !A2 * !B1 * !C1 * Y)	0.00095	0.00096	0.00095
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00124	-0.00124	-0.00124
	(!A1 * !A2 * B1 * C1 * Y)	0.00050	0.00050	0.00050
	(!A1 * !A2 * B1 * C1 * Y)	-0.00119	-0.00122	-0.00121
	(!A1 * !A2 * B1 * !C1 * Y)	0.00059	0.00059	0.00058
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00120	-0.00123	-0.00122
	(!A1 * !A2 * !B1 * C1 * Y)	0.00052	0.00052	0.00053
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00124	-0.00124	-0.00123
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00062	0.00062	0.00062
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00125	-0.00125	-0.00125

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00212	0.00212	0.00213
	(A2 * B1 * C1 * !Y)	-0.00145	-0.00145	-0.00145
	(A2 * B1 * !C1 * Y)	0.00191	0.00193	0.00192
	(A2 * B1 * !C1 * Y)	-0.00228	-0.00234	-0.00232
	(A2 * !B1 * !C1 * Y)	0.00178	0.00181	0.00179
	(A2 * !B1 * !C1 * Y)	-0.00237	-0.00239	-0.00238
	(A1 * !A2 * B1 * C1 * !Y)	0.00212	0.00213	0.00213
	(A1 * !A2 * B1 * C1 * !Y)	-0.00145	-0.00145	-0.00145
	(A1 * !A2 * B1 * !C1 * Y)	0.00192	0.00192	0.00192
	(A1 * !A2 * B1 * !C1 * Y)	-0.00229	-0.00232	-0.00232
	(A1 * !A2 * !B1 * !C1 * Y)	0.00178	0.00179	0.00179
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00237	-0.00238	-0.00238
	(!A1 * !A2 * B1 * C1 * Y)	0.00091	0.00091	0.00091
	(!A1 * !A2 * B1 * C1 * Y)	-0.00228	-0.00234	-0.00232
	(!A1 * !A2 * B1 * !C1 * Y)	0.00105	0.00107	0.00106
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00227	-0.00234	-0.00233
	(!A1 * !A2 * !B1 * C1 * Y)	0.00094	0.00095	0.00096
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00236	-0.00237	-0.00235
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00113	0.00113	0.00112
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00239	-0.00239	-0.00238

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00433	0.00435	0.00433
	(A2 * B1 * C1 * !Y)	-0.00290	-0.00291	-0.00290
	(A2 * B1 * !C1 * Y)	0.00389	0.00391	0.00389
	(A2 * B1 * !C1 * Y)	-0.00458	-0.00463	-0.00466
	(A2 * !B1 * !C1 * Y)	0.00361	0.00363	0.00362
	(A2 * !B1 * !C1 * Y)	-0.00479	-0.00482	-0.00480
	(A1 * !A2 * B1 * C1 * !Y)	0.00433	0.00435	0.00433
	(A1 * !A2 * B1 * C1 * !Y)	-0.00290	-0.00291	-0.00290
	(A1 * !A2 * B1 * !C1 * Y)	0.00389	0.00390	0.00389
	(A1 * !A2 * B1 * !C1 * Y)	-0.00459	-0.00469	-0.00467
	(A1 * !A2 * !B1 * !C1 * Y)	0.00360	0.00362	0.00361
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00479	-0.00481	-0.00480
	(!A1 * !A2 * B1 * C1 * Y)	0.00182	0.00182	0.00182
	(!A1 * !A2 * B1 * C1 * Y)	-0.00458	-0.00470	-0.00468
	(!A1 * !A2 * B1 * !C1 * Y)	0.00212	0.00212	0.00211
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00460	-0.00472	-0.00468
	(!A1 * !A2 * !B1 * C1 * Y)	0.00190	0.00191	0.00191
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00477	-0.00479	-0.00475
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00222	0.00225	0.00223
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00480	-0.00481	-0.00481

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)**	-0.00112	-0.00113	-0.00115
	(A2 * B1 * C1 * !Y)	0.00076	0.00076	0.00074
	(A2 * B1 * !C1 * Y)	-0.00100	-0.00101	-0.00100
	(A2 * B1 * !C1 * Y)	0.00121	0.00122	0.00121
	(A2 * !B1 * !C1 * Y)	-0.00093	-0.00096	-0.00096
	(A2 * !B1 * !C1 * Y)	0.00124	0.00125	0.00124
	(A1 * !A2 * B1 * C1 * !Y)	-0.00112	-0.00113	-0.00115
	(A1 * !A2 * B1 * C1 * !Y)	0.00076	0.00076	0.00074
	(A1 * !A2 * B1 * !C1 * Y)	-0.00100	-0.00101	-0.00100
	(A1 * !A2 * B1 * !C1 * Y)	0.00122	0.00122	0.00121
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00093	-0.00096	-0.00095
	(A1 * !A2 * !B1 * !C1 * Y)	0.00125	0.00125	0.00124
	(!A1 * !A2 * B1 * C1 * Y)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * B1 * C1 * Y)	0.00124	0.00123	0.00121
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00059	-0.00059	-0.00058
	(!A1 * !A2 * B1 * !C1 * Y)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00050	-0.00050	-0.00051
	(!A1 * !A2 * !B1 * C1 * Y)	0.00126	0.00126	0.00125
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00062	-0.00062	-0.00062
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00125	0.00125	0.00125

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00205	-0.00206	-0.00212
	(A2 * B1 * C1 * !Y)	0.00153	0.00153	0.00147
	(A2 * B1 * !C1 * Y)	-0.00191	-0.00192	-0.00191
	(A2 * B1 * !C1 * Y)	0.00231	0.00234	0.00232
	(A2 * !B1 * !C1 * Y)	-0.00173	-0.00181	-0.00179
	(A2 * !B1 * !C1 * Y)	0.00238	0.00240	0.00239
	(A1 * !A2 * B1 * C1 * !Y)	-0.00205	-0.00206	-0.00212
	(A1 * !A2 * B1 * C1 * !Y)	0.00153	0.00153	0.00147
	(A1 * !A2 * B1 * !C1 * Y)	-0.00191	-0.00191	-0.00191
	(A1 * !A2 * B1 * !C1 * Y)	0.00231	0.00232	0.00232
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00172	-0.00179	-0.00179
	(A1 * !A2 * !B1 * !C1 * Y)	0.00238	0.00240	0.00239
	(!A1 * !A2 * B1 * C1 * Y)	-0.00089	-0.00089	-0.00090
	(!A1 * !A2 * B1 * C1 * Y)	0.00237	0.00237	0.00232
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00105	-0.00107	-0.00106
	(!A1 * !A2 * B1 * !C1 * Y)	0.00234	0.00234	0.00233
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00089	-0.00089	-0.00091
	(!A1 * !A2 * !B1 * C1 * Y)	0.00243	0.00243	0.00239
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00113	-0.00113	-0.00112
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00240	0.00239	0.00239

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00419	-0.00421	-0.00433
	(A2 * B1 * C1 * !Y)	0.00305	0.00304	0.00293
	(A2 * B1 * !C1 * Y)	-0.00388	-0.00386	-0.00388
	(A2 * B1 * !C1 * Y)	0.00466	0.00463	0.00466
	(A2 * !B1 * !C1 * Y)	-0.00348	-0.00363	-0.00362
	(A2 * !B1 * !C1 * Y)	0.00480	0.00484	0.00481
	(A1 * !A2 * B1 * C1 * !Y)	-0.00419	-0.00421	-0.00433
	(A1 * !A2 * B1 * C1 * !Y)	0.00304	0.00304	0.00293
	(A1 * !A2 * B1 * !C1 * Y)	-0.00386	-0.00389	-0.00388
	(A1 * !A2 * B1 * !C1 * Y)	0.00463	0.00469	0.00467
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00346	-0.00362	-0.00361
	(A1 * !A2 * !B1 * !C1 * Y)	0.00479	0.00484	0.00481
	(!A1 * !A2 * B1 * C1 * Y)	-0.00178	-0.00178	-0.00180
	(!A1 * !A2 * B1 * C1 * Y)	0.00480	0.00480	0.00468
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00212	-0.00212	-0.00211
	(!A1 * !A2 * B1 * !C1 * Y)	0.00470	0.00472	0.00468
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00178	-0.00178	-0.00183
	(!A1 * !A2 * !B1 * C1 * Y)	0.00493	0.00493	0.00483
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00222	-0.00225	-0.00223
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00482	0.00481	0.00482

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)	0.00048	0.00048	0.00045
	(A2 * !B1 * !B2 * Y)	-0.00151	-0.00152	-0.00155
	(!A2 * !B1 * !B2 * Y)	0.00048	0.00048	0.00045
	(!A2 * !B1 * !B2 * Y)	-0.00150	-0.00152	-0.00155
	(!A1 * !A2 * B2 * Y)	0.00051	0.00050	0.00043
	(!A1 * !A2 * B2 * Y)	-0.00141	-0.00142	-0.00154
	(!A1 * !A2 * B1 * !B2 * Y)	0.00050	0.00051	0.00044
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00142	-0.00143	-0.00154
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00088	0.00088	0.00083
	(A2 * !B1 * !B2 * Y)	-0.00279	-0.00281	-0.00288
	(!A2 * !B1 * !B2 * Y)	0.00088	0.00088	0.00083
	(!A2 * !B1 * !B2 * Y)	-0.00279	-0.00281	-0.00288
	(!A1 * !A2 * B2 * Y)	0.00093	0.00093	0.00080
	(!A1 * !A2 * B2 * Y)	-0.00261	-0.00264	-0.00286
	(!A1 * !A2 * B1 * !B2 * Y)	0.00094	0.00094	0.00082
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00264	-0.00266	-0.00286
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00154	0.00154	0.00145
	(A2 * !B1 * !B2 * Y)	-0.00568	-0.00572	-0.00585
	(!A2 * !B1 * !B2 * Y)	0.00154	0.00154	0.00145
	(!A2 * !B1 * !B2 * Y)	-0.00568	-0.00572	-0.00585
	(!A1 * !A2 * B2 * Y)	0.00163	0.00163	0.00141
	(!A1 * !A2 * B2 * Y)	-0.00534	-0.00539	-0.00580
	(!A1 * !A2 * B1 * !B2 * Y)	0.00164	0.00164	0.00144
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00541	-0.00545	-0.00580

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)	-0.00044	-0.00044	-0.00044
	(A2 * !B1 * !B2 * Y)	0.00156	0.00156	0.00156
	(!A2 * !B1 * !B2 * Y)	-0.00044	-0.00044	-0.00044
	(!A2 * !B1 * !B2 * Y)	0.00156	0.00156	0.00156
	(!A1 * !A2 * B2 * Y)	-0.00042	-0.00043	-0.00042
	(!A1 * !A2 * B2 * Y)	0.00156	0.00156	0.00156
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * B1 * !B2 * Y)	0.00156	0.00157	0.00156
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00081	-0.00081	-0.00080
	(A2 * !B1 * !B2 * Y)	0.00290	0.00291	0.00289
	(!A2 * !B1 * !B2 * Y)	-0.00081	-0.00081	-0.00080
	(!A2 * !B1 * !B2 * Y)	0.00291	0.00291	0.00289
	(!A1 * !A2 * B2 * Y)	-0.00078	-0.00078	-0.00077
	(!A1 * !A2 * B2 * Y)	0.00288	0.00291	0.00289
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00079	-0.00079	-0.00078
	(!A1 * !A2 * B1 * !B2 * Y)	0.00291	0.00291	0.00289
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00142	-0.00141	-0.00141
	(A2 * !B1 * !B2 * Y)	0.00589	0.00589	0.00586
	(!A2 * !B1 * !B2 * Y)	-0.00142	-0.00141	-0.00141
	(!A2 * !B1 * !B2 * Y)	0.00589	0.00588	0.00586
	(!A1 * !A2 * B2 * Y)	-0.00136	-0.00137	-0.00135
	(!A1 * !A2 * B2 * Y)	0.00583	0.00589	0.00586
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00139	-0.00138	-0.00137
	(!A1 * !A2 * B1 * !B2 * Y)	0.00590	0.00589	0.00586

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221a_1	14.38560
sky130_fd_sc_hs__o221a_2	15.98400
sky130_fd_sc_hs__o221a_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__o221a_1	0.00239	0.00238	0.00232	0.00251	0.00248	0.35600
sky130_fd_sc_hs__o221a_2	0.00254	0.00251	0.00250	0.00263	0.00260	0.71335
sky130_fd_sc_hs__o221a_4	0.00475	0.00431	0.00506	0.00434	0.00446	1.38392

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.00021	0.00038
sky130_fd_sc_hs__o221a_2	0.00000	0.00029	0.00042
sky130_fd_sc_hs__o221a_4	0.00000	0.00059	0.00084

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)	0.26156	1.29685	9.13614
	A2->X (RR)	0.25312	1.28603	9.08147
	B1->X (RR)	0.25048	1.31739	9.14064
	B2->X (RR)	0.24360	1.29869	9.05735
	C1->X (RR)	0.23362	1.28777	8.88330
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.25394	1.13597	9.12077
	A2->X (RR)	0.24668	1.12703	9.07642
	B1->X (RR)	0.24347	1.16210	9.15347
	B2->X (RR)	0.24091	1.14927	9.08821
	C1->X (RR)	0.22769	1.14270	8.95094
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.26574	1.04250	9.21762
	A2->X (RR)	0.26037	1.03673	9.17550
	B1->X (RR)	0.25655	1.06966	9.25639
	B2->X (RR)	0.25005	1.05168	9.17733
	C1->X (RR)	0.23578	1.04608	9.03652

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.63861	1.49276	7.38807
	A2->X (FF)	0.60034	1.39998	6.92275
	B1->X (FF)	0.54563	1.39418	7.17846
	B2->X (FF)	0.51248	1.30792	6.71127
	C1->X (FF)	0.21471	1.02746	6.24047
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.77876	1.62694	7.73179
	A2->X (FF)	0.73585	1.52875	7.30373
	B1->X (FF)	0.66624	1.50593	7.51801
	B2->X (FF)	0.63245	1.41834	7.09964
	C1->X (FF)	0.26115	1.06249	6.53327
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.68837	1.49889	7.60197
	A2->X (FF)	0.64539	1.39412	7.15286
	B1->X (FF)	0.61200	1.41423	7.43609
	B2->X (FF)	0.56652	1.31889	6.98601
	C1->X (FF)	0.23935	1.01032	6.47917

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.00908	0.00903	0.00892
	A1	0.00401	0.00395	0.00387
	A2	0.00825	0.00826	0.00819
	A2	0.00362	0.00362	0.00358
	B1	0.00822	0.00819	0.00810
	B1	0.00399	0.00395	0.00389
	B2	0.00752	0.00745	0.00735
	B2	0.00355	0.00348	0.00340
	C1	0.00772	0.00764	0.00752
	C1	0.00400	0.00392	0.00381
sky130_fd_sc_hs__o221a_2	A1	0.01116	0.01126	0.01120
	A1	0.00569	0.00579	0.00577
	A2	0.01026	0.01045	0.01044
	A2	0.00525	0.00543	0.00548
	B1	0.01022	0.01031	0.01028
	B1	0.00568	0.00578	0.00581
	B2	0.00950	0.00958	0.00952
	B2	0.00528	0.00537	0.00532
	C1	0.00963	0.00967	0.00959
	C1	0.00571	0.00575	0.00571

sky130_fd_sc_hs__o221a_4	**A1**	0.02055	0.02081	0.02088
	A1	0.01067	0.01093	0.01113
	A2	0.01845	0.01878	0.01888
	A2	0.00973	0.01007	0.01030
	B1	0.01925	0.01950	0.01958
	B1	0.01062	0.01088	0.01109
	B2	0.01707	0.01730	0.01733
	B2	0.00978	0.01001	0.01017
	C1	0.01752	0.01767	0.01768
	C1	0.01063	0.01078	0.01088

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00347	0.00345	0.00432
	A1	0.00841	0.00839	0.00830
	A2	0.00356	0.00352	0.00428
	A2	0.00793	0.00791	0.00781
	B1	0.00298	0.00298	0.00307
	B1	0.00719	0.00720	0.00714
	B2	0.00287	0.00281	0.00288
	B2	0.00679	0.00674	0.00668
	C1	0.00232	0.00218	0.00231
	C1	0.00608	0.00594	0.00590

sky130_fd_sc_hs__o221a_2	**A1**	0.00496	0.00513	0.00522
	A1	0.01019	0.01036	0.01030
	A2	0.00497	0.00512	0.00776
	A2	0.00971	0.00987	0.00981
	B1	0.00431	0.00450	0.00615
	B1	0.00882	0.00901	0.00899
	B2	0.00422	0.00435	0.00509
	B2	0.00839	0.00852	0.00852
	C1	0.00370	0.00373	0.00467
	C1	0.00767	0.00769	0.00768
sky130_fd_sc_hs__o221a_4	**A1**	0.00904	0.00952	0.01449
	A1	0.01866	0.01918	0.01918
	A2	0.00932	0.00972	0.01163
	A2	0.01777	0.01815	0.01818
	B1	0.00792	0.00840	0.00917
	B1	0.01654	0.01700	0.01704
	B2	0.00837	0.00872	0.01014
	B2	0.01561	0.01598	0.01602
	C1	0.00732	0.00752	0.00892
	C1	0.01436	0.01452	0.01459

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)**	0.00098	0.00098	0.00097
	(A2 * B2 * C1 * X)	-0.00105	-0.00107	-0.00107
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00084	0.00085	0.00084
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00119	-0.00121	-0.00121
	(A2 * B1 * !B2 * C1 * X)	0.00098	0.00098	0.00097
	(A2 * B1 * !B2 * C1 * X)	-0.00105	-0.00107	-0.00107
	(A2 * !B1 * !B2 * !X)	0.00084	0.00085	0.00084
	(A2 * !B1 * !B2 * !X)	-0.00119	-0.00121	-0.00121
	(!A2 * B2 * !C1 * !X)	0.00077	0.00077	0.00077
	(!A2 * B2 * !C1 * !X)	-0.00123	-0.00123	-0.00123
	(!A2 * B1 * !B2 * !C1 * !X)	0.00077	0.00078	0.00077
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00123	-0.00123	-0.00123
	(!A2 * !B1 * !B2 * C1 * !X)	0.00078	0.00079	0.00078
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00123	-0.00123	-0.00123
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00078	0.00078	0.00078
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00123	-0.00123	-0.00123

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00113	0.00114	0.00113
	(A2 * B2 * C1 * X)	-0.00104	-0.00107	-0.00106
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00098	0.00099	0.00098
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00120	-0.00122	-0.00122
	(A2 * B1 * !B2 * C1 * X)	0.00113	0.00114	0.00113
	(A2 * B1 * !B2 * C1 * X)	-0.00104	-0.00107	-0.00106
	(A2 * !B1 * !B2 * !X)	0.00098	0.00099	0.00098
	(A2 * !B1 * !B2 * !X)	-0.00120	-0.00122	-0.00122
	(!A2 * B2 * !C1 * !X)	0.00090	0.00091	0.00090
	(!A2 * B2 * !C1 * !X)	-0.00124	-0.00124	-0.00124
	(!A2 * B1 * !B2 * !C1 * !X)	0.00090	0.00091	0.00091
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00123	-0.00124	-0.00124
	(!A2 * !B1 * !B2 * C1 * !X)	0.00092	0.00091	0.00092
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00123	-0.00123	-0.00123
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00092	0.00092	0.00092
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00123	-0.00123	-0.00123

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00207	0.00209	0.00207
	(A2 * B2 * C1 * X)	-0.00205	-0.00212	-0.00210
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00188	0.00190	0.00189
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00224	-0.00230	-0.00229
	(A2 * B1 * !B2 * C1 * X)	0.00207	0.00209	0.00207
	(A2 * B1 * !B2 * C1 * X)	-0.00205	-0.00212	-0.00210
	(A2 * !B1 * !B2 * !X)	0.00188	0.00190	0.00189
	(A2 * !B1 * !B2 * !X)	-0.00224	-0.00230	-0.00229
	(!A2 * B2 * !C1 * !X)	0.00173	0.00173	0.00172
	(!A2 * B2 * !C1 * !X)	-0.00234	-0.00234	-0.00234
	(!A2 * B1 * !B2 * !C1 * !X)	0.00175	0.00175	0.00174
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00234	-0.00234	-0.00234
	(!A2 * !B1 * !B2 * C1 * !X)	0.00176	0.00177	0.00176
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00233	-0.00234	-0.00233
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00176	0.00177	0.00176
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00233	-0.00234	-0.00234

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)**	-0.00097	-0.00097	-0.00097
	(A2 * B2 * C1 * X)	0.00107	0.00107	0.00107
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00084	-0.00084	-0.00084
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00121	0.00121	0.00121
	(A2 * B1 * !B2 * C1 * X)	-0.00097	-0.00097	-0.00097
	(A2 * B1 * !B2 * C1 * X)	0.00107	0.00107	0.00107
	(A2 * !B1 * !B2 * !X)	-0.00084	-0.00084	-0.00084
	(A2 * !B1 * !B2 * !X)	0.00121	0.00121	0.00121
	(!A2 * B2 * !C1 * !X)	-0.00072	-0.00077	-0.00077
	(!A2 * B2 * !C1 * !X)	0.00123	0.00123	0.00123
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00074	-0.00078	-0.00077
	(!A2 * B1 * !B2 * !C1 * !X)	0.00123	0.00123	0.00123
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00076	-0.00078	-0.00078
	(!A2 * !B1 * !B2 * C1 * !X)	0.00124	0.00123	0.00123
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00076	-0.00078	-0.00078
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00124	0.00123	0.00123

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00113	-0.00114	-0.00113
	(A2 * B2 * C1 * X)	0.00107	0.00108	0.00106
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00098	-0.00099	-0.00098
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00122	0.00123	0.00122
	(A2 * B1 * !B2 * C1 * X)	-0.00113	-0.00114	-0.00113
	(A2 * B1 * !B2 * C1 * X)	0.00107	0.00108	0.00106
	(A2 * !B1 * !B2 * !X)	-0.00098	-0.00099	-0.00098
	(A2 * !B1 * !B2 * !X)	0.00121	0.00123	0.00122
	(!A2 * B2 * !C1 * !X)	-0.00085	-0.00091	-0.00090
	(!A2 * B2 * !C1 * !X)	0.00124	0.00124	0.00124
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00086	-0.00091	-0.00091
	(!A2 * B1 * !B2 * !C1 * !X)	0.00124	0.00124	0.00124
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00089	-0.00091	-0.00092
	(!A2 * !B1 * !B2 * C1 * !X)	0.00124	0.00124	0.00124
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00089	-0.00092	-0.00092
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00124	0.00124	0.00124

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00207	-0.00207	-0.00207
	(A2 * B2 * C1 * X)	0.00211	0.00212	0.00210
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00188	-0.00189	-0.00188
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00229	0.00230	0.00229
	(A2 * B1 * !B2 * C1 * X)	-0.00207	-0.00207	-0.00206
	(A2 * B1 * !B2 * C1 * X)	0.00211	0.00212	0.00210
	(A2 * !B1 * !B2 * !X)	-0.00188	-0.00189	-0.00188
	(A2 * !B1 * !B2 * !X)	0.00229	0.00230	0.00229
	(!A2 * B2 * !C1 * !X)	-0.00166	-0.00173	-0.00172
	(!A2 * B2 * !C1 * !X)	0.00235	0.00236	0.00234
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00169	-0.00175	-0.00174
	(!A2 * B1 * !B2 * !C1 * !X)	0.00235	0.00236	0.00234
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00171	-0.00177	-0.00176
	(!A2 * !B1 * !B2 * C1 * !X)	0.00233	0.00236	0.00234
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00171	-0.00177	-0.00176
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00233	0.00236	0.00234

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)**	0.00101	0.00100	0.00100
	(A1 * B2 * C1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * B2 * !C1 * !X)	0.00086	0.00087	0.00086
	(A1 * B2 * !C1 * !X)	-0.00109	-0.00111	-0.00111
	(A1 * B1 * !B2 * C1 * X)	0.00101	0.00100	0.00100
	(A1 * B1 * !B2 * C1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * B1 * !B2 * !C1 * !X)	0.00086	0.00086	0.00086
	(A1 * B1 * !B2 * !C1 * !X)	-0.00109	-0.00111	-0.00111
	(A1 * !B1 * !B2 * C1 * !X)	0.00086	0.00087	0.00086
	(A1 * !B1 * !B2 * C1 * !X)	-0.00109	-0.00111	-0.00111
	(A1 * !B1 * !B2 * !C1 * !X)	0.00086	0.00087	0.00086
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00109	-0.00111	-0.00111
	(!A1 * B2 * !C1 * !X)	0.00078	0.00079	0.00078
	(!A1 * B2 * !C1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * B1 * !B2 * !C1 * !X)	0.00078	0.00080	0.00079
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00113	-0.00114	-0.00113
	(!A1 * !B1 * !B2 * C1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00113	-0.00114	-0.00114
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00113	-0.00114	-0.00114

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00116	0.00114	0.00114
	(A1 * B2 * C1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * B2 * !C1 * !X)	0.00100	0.00100	0.00100
	(A1 * B2 * !C1 * !X)	-0.00109	-0.00111	-0.00110
	(A1 * B1 * !B2 * C1 * X)	0.00116	0.00114	0.00114
	(A1 * B1 * !B2 * C1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * B1 * !B2 * !C1 * !X)	0.00100	0.00101	0.00100
	(A1 * B1 * !B2 * !C1 * !X)	-0.00109	-0.00111	-0.00110
	(A1 * !B1 * !B2 * C1 * !X)	0.00100	0.00101	0.00100
	(A1 * !B1 * !B2 * C1 * !X)	-0.00109	-0.00111	-0.00110
	(A1 * !B1 * !B2 * !C1 * !X)	0.00100	0.00100	0.00100
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00109	-0.00111	-0.00111
	(!A1 * B2 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * B2 * !C1 * !X)	-0.00113	-0.00113	-0.00113
	(!A1 * B1 * !B2 * !C1 * !X)	0.00092	0.00093	0.00092
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00113	-0.00113	-0.00113
	(!A1 * !B1 * !B2 * C1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00113	-0.00113	-0.00113
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00113	-0.00113	-0.00113

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00186	0.00184	0.00184
	(A1 * B2 * C1 * X)	-0.00136	-0.00133	-0.00133
	(A1 * B2 * !C1 * !X)	0.00161	0.00161	0.00161
	(A1 * B2 * !C1 * !X)	-0.00212	-0.00217	-0.00216
	(A1 * B1 * !B2 * C1 * X)	0.00186	0.00184	0.00184
	(A1 * B1 * !B2 * C1 * X)	-0.00136	-0.00133	-0.00133
	(A1 * B1 * !B2 * !C1 * !X)	0.00161	0.00163	0.00161
	(A1 * B1 * !B2 * !C1 * !X)	-0.00212	-0.00217	-0.00216
	(A1 * !B1 * !B2 * C1 * !X)	0.00161	0.00162	0.00161
	(A1 * !B1 * !B2 * C1 * !X)	-0.00212	-0.00216	-0.00215
	(A1 * !B1 * !B2 * !C1 * !X)	0.00161	0.00161	0.00161
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00212	-0.00217	-0.00216
	(!A1 * B2 * !C1 * !X)	0.00146	0.00147	0.00145
	(!A1 * B2 * !C1 * !X)	-0.00221	-0.00222	-0.00222
	(!A1 * B1 * !B2 * !C1 * !X)	0.00148	0.00148	0.00147
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00222	-0.00222	-0.00222
	(!A1 * !B1 * !B2 * C1 * !X)	0.00148	0.00150	0.00149
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00221	-0.00222	-0.00221
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00148	0.00150	0.00149
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00221	-0.00222	-0.00221

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)**	-0.00098	-0.00097	-0.00100
	(A1 * B2 * C1 * X)	0.00071	0.00070	0.00068
	(A1 * B2 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * B2 * !C1 * !X)	0.00112	0.00111	0.00111
	(A1 * B1 * !B2 * C1 * X)	-0.00098	-0.00097	-0.00100
	(A1 * B1 * !B2 * C1 * X)	0.00071	0.00070	0.00068
	(A1 * B1 * !B2 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * B1 * !B2 * !C1 * !X)	0.00112	0.00111	0.00111
	(A1 * !B1 * !B2 * C1 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !B1 * !B2 * C1 * !X)	0.00112	0.00111	0.00111
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !B1 * !B2 * !C1 * !X)	0.00112	0.00111	0.00111
	(!A1 * B2 * !C1 * !X)	-0.00073	-0.00079	-0.00078
	(!A1 * B2 * !C1 * !X)	0.00113	0.00114	0.00114
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00075	-0.00080	-0.00079
	(!A1 * B1 * !B2 * !C1 * !X)	0.00113	0.00114	0.00114
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00077	-0.00080	-0.00080
	(!A1 * !B1 * !B2 * C1 * !X)	0.00114	0.00114	0.00114
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00077	-0.00080	-0.00080
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00114	0.00114	0.00114

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00111	-0.00111	-0.00114
	(A1 * B2 * C1 * X)	0.00071	0.00070	0.00067
	(A1 * B2 * !C1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * B2 * !C1 * !X)	0.00111	0.00111	0.00110
	(A1 * B1 * !B2 * C1 * X)	-0.00110	-0.00111	-0.00114
	(A1 * B1 * !B2 * C1 * X)	0.00070	0.00070	0.00067
	(A1 * B1 * !B2 * !C1 * !X)	-0.00100	-0.00101	-0.00100
	(A1 * B1 * !B2 * !C1 * !X)	0.00111	0.00111	0.00110
	(A1 * !B1 * !B2 * C1 * !X)	-0.00099	-0.00100	-0.00100
	(A1 * !B1 * !B2 * C1 * !X)	0.00109	0.00111	0.00110
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00099	-0.00100	-0.00100
	(A1 * !B1 * !B2 * !C1 * !X)	0.00110	0.00111	0.00111
	(!A1 * B2 * !C1 * !X)	-0.00085	-0.00092	-0.00091
	(!A1 * B2 * !C1 * !X)	0.00113	0.00113	0.00113
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00087	-0.00093	-0.00092
	(!A1 * B1 * !B2 * !C1 * !X)	0.00113	0.00113	0.00113
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00090	-0.00094	-0.00093
	(!A1 * !B1 * !B2 * C1 * !X)	0.00113	0.00113	0.00113
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00090	-0.00094	-0.00093
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00113	0.00113	0.00113

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00177	-0.00177	-0.00184
	(A1 * B2 * C1 * X)	0.00140	0.00140	0.00135
	(A1 * B2 * !C1 * !X)	-0.00161	-0.00161	-0.00160
	(A1 * B2 * !C1 * !X)	0.00217	0.00217	0.00216
	(A1 * B1 * !B2 * C1 * X)	-0.00177	-0.00177	-0.00184
	(A1 * B1 * !B2 * C1 * X)	0.00140	0.00140	0.00135
	(A1 * B1 * !B2 * !C1 * !X)	-0.00161	-0.00162	-0.00160
	(A1 * B1 * !B2 * !C1 * !X)	0.00217	0.00217	0.00216
	(A1 * !B1 * !B2 * C1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !B1 * !B2 * C1 * !X)	0.00215	0.00216	0.00215
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00160	-0.00161	-0.00160
	(A1 * !B1 * !B2 * !C1 * !X)	0.00216	0.00217	0.00216
	(!A1 * B2 * !C1 * !X)	-0.00135	-0.00147	-0.00145
	(!A1 * B2 * !C1 * !X)	0.00221	0.00222	0.00222
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00148	-0.00147
	(!A1 * B1 * !B2 * !C1 * !X)	0.00222	0.00222	0.00222
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00143	-0.00150	-0.00149
	(!A1 * !B1 * !B2 * C1 * !X)	0.00221	0.00223	0.00222
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00143	-0.00150	-0.00149
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00221	0.00223	0.00222

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)**	0.00091	0.00092	0.00091
	(A2 * B2 * C1 * X)	-0.00107	-0.00110	-0.00109
	(A2 * !B2 * !C1 * !X)	0.00082	0.00082	0.00082
	(A2 * !B2 * !C1 * !X)	-0.00116	-0.00116	-0.00116
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00086	0.00087	0.00086
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00113	-0.00115	-0.00114
	(A1 * !A2 * B2 * C1 * X)	0.00091	0.00091	0.00091
	(A1 * !A2 * B2 * C1 * X)	-0.00107	-0.00110	-0.00109
	(A1 * !A2 * !B2 * !C1 * !X)	0.00082	0.00082	0.00082
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00116	-0.00116	-0.00116
	(!A1 * !A2 * B2 * C1 * !X)	0.00043	0.00043	0.00043
	(!A1 * !A2 * B2 * C1 * !X)	-0.00113	-0.00115	-0.00115
	(!A1 * !A2 * B2 * !C1 * !X)	0.00050	0.00050	0.00049
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00113	-0.00115	-0.00114
	(!A1 * !A2 * !B2 * C1 * !X)	0.00044	0.00044	0.00045
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00116	-0.00116	-0.00115
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00052	0.00052	0.00052
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00116	-0.00117	-0.00116

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00107	0.00108	0.00107
	(A2 * B2 * C1 * X)	-0.00105	-0.00108	-0.00107
	(A2 * !B2 * !C1 * !X)	0.00094	0.00094	0.00094
	(A2 * !B2 * !C1 * !X)	-0.00117	-0.00118	-0.00117
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00099	0.00100	0.00099
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00113	-0.00116	-0.00115
	(A1 * !A2 * B2 * C1 * X)	0.00107	0.00108	0.00107
	(A1 * !A2 * B2 * C1 * X)	-0.00105	-0.00108	-0.00107
	(A1 * !A2 * !B2 * !C1 * !X)	0.00094	0.00094	0.00094
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A2 * B2 * C1 * !X)	0.00048	0.00049	0.00048
	(!A1 * !A2 * B2 * C1 * !X)	-0.00113	-0.00117	-0.00116
	(!A1 * !A2 * B2 * !C1 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00114	-0.00116	-0.00116
	(!A1 * !A2 * !B2 * C1 * !X)	0.00050	0.00050	0.00051
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00118	-0.00118	-0.00118

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00230	0.00231	0.00229
	(A2 * B2 * C1 * X)	-0.00206	-0.00213	-0.00211
	(A2 * !B2 * !C1 * !X)	0.00203	0.00205	0.00204
	(A2 * !B2 * !C1 * !X)	-0.00233	-0.00234	-0.00233
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00212	0.00215	0.00213
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00224	-0.00230	-0.00228
	(A1 * !A2 * B2 * C1 * X)	0.00230	0.00231	0.00229
	(A1 * !A2 * B2 * C1 * X)	-0.00206	-0.00213	-0.00211
	(A1 * !A2 * !B2 * !C1 * !X)	0.00203	0.00205	0.00204
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00233	-0.00234	-0.00233
	(!A1 * !A2 * B2 * C1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A2 * B2 * C1 * !X)	-0.00225	-0.00232	-0.00230
	(!A1 * !A2 * B2 * !C1 * !X)	0.00132	0.00133	0.00132
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00226	-0.00232	-0.00230
	(!A1 * !A2 * !B2 * C1 * !X)	0.00122	0.00124	0.00125
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00232	-0.00234	-0.00231
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00137	0.00139	0.00137
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00234	-0.00236	-0.00234

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)**	-0.00091	-0.00091	-0.00091
	(A2 * B2 * C1 * X)	0.00109	0.00110	0.00109
	(A2 * !B2 * !C1 * !X)	-0.00080	-0.00082	-0.00082
	(A2 * !B2 * !C1 * !X)	0.00116	0.00117	0.00116
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00115	0.00115	0.00114
	(A1 * !A2 * B2 * C1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !A2 * B2 * C1 * X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00080	-0.00082	-0.00082
	(A1 * !A2 * !B2 * !C1 * !X)	0.00117	0.00117	0.00116
	(!A1 * !A2 * B2 * C1 * !X)	-0.00042	-0.00042	-0.00043
	(!A1 * !A2 * B2 * C1 * !X)	0.00117	0.00117	0.00115
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00050	-0.00050	-0.00049
	(!A1 * !A2 * B2 * !C1 * !X)	0.00115	0.00116	0.00114
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00042	-0.00042	-0.00043
	(!A1 * !A2 * !B2 * C1 * !X)	0.00118	0.00118	0.00117
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00052	-0.00052	-0.00052
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00107	-0.00107	-0.00107
	(A2 * B2 * C1 * X)	0.00107	0.00108	0.00107
	(A2 * !B2 * !C1 * !X)	-0.00091	-0.00094	-0.00094
	(A2 * !B2 * !C1 * !X)	0.00118	0.00118	0.00118
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * B2 * C1 * X)	-0.00107	-0.00107	-0.00107
	(A1 * !A2 * B2 * C1 * X)	0.00107	0.00108	0.00107
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00090	-0.00094	-0.00094
	(A1 * !A2 * !B2 * !C1 * !X)	0.00117	0.00119	0.00118
	(!A1 * !A2 * B2 * C1 * !X)	-0.00047	-0.00047	-0.00048
	(!A1 * !A2 * B2 * C1 * !X)	0.00119	0.00118	0.00116
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00056	-0.00056	-0.00056
	(!A1 * !A2 * B2 * !C1 * !X)	0.00116	0.00116	0.00116
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00047	-0.00048	-0.00049
	(!A1 * !A2 * !B2 * C1 * !X)	0.00120	0.00120	0.00118
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00119	0.00118	0.00118

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00230	-0.00230	-0.00229
	(A2 * B2 * C1 * X)	0.00212	0.00213	0.00211
	(A2 * !B2 * !C1 * !X)	-0.00198	-0.00205	-0.00204
	(A2 * !B2 * !C1 * !X)	0.00233	0.00236	0.00234
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00212	-0.00214	-0.00213
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00228	0.00230	0.00228
	(A1 * !A2 * B2 * C1 * X)	-0.00230	-0.00230	-0.00229
	(A1 * !A2 * B2 * C1 * X)	0.00212	0.00213	0.00211
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00197	-0.00205	-0.00204
	(A1 * !A2 * !B2 * !C1 * !X)	0.00233	0.00236	0.00234
	(!A1 * !A2 * B2 * C1 * !X)	-0.00116	-0.00117	-0.00119
	(!A1 * !A2 * B2 * C1 * !X)	0.00237	0.00238	0.00230
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00132	-0.00133	-0.00132
	(!A1 * !A2 * B2 * !C1 * !X)	0.00230	0.00232	0.00230
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00119	-0.00120	-0.00121
	(!A1 * !A2 * !B2 * C1 * !X)	0.00240	0.00242	0.00235
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00137	-0.00139	-0.00137
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00236	0.00238	0.00235

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)**	0.00112	0.00113	0.00113
	(A2 * B1 * C1 * X)	-0.00068	-0.00068	-0.00068
	(A2 * B1 * !C1 * !X)	0.00096	0.00097	0.00096
	(A2 * B1 * !C1 * !X)	-0.00113	-0.00115	-0.00114
	(A2 * !B1 * !C1 * !X)	0.00092	0.00093	0.00092
	(A2 * !B1 * !C1 * !X)	-0.00116	-0.00117	-0.00117
	(A1 * !A2 * B1 * C1 * X)	0.00112	0.00113	0.00113
	(A1 * !A2 * B1 * C1 * X)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * B1 * !C1 * !X)	0.00096	0.00096	0.00096
	(A1 * !A2 * B1 * !C1 * !X)	-0.00113	-0.00114	-0.00114
	(A1 * !A2 * !B1 * !C1 * !X)	0.00092	0.00093	0.00092
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00117	-0.00117	-0.00117
	(!A1 * !A2 * B1 * C1 * !X)	0.00050	0.00050	0.00050
	(!A1 * !A2 * B1 * C1 * !X)	-0.00113	-0.00116	-0.00115
	(!A1 * !A2 * B1 * !C1 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00113	-0.00115	-0.00115
	(!A1 * !A2 * !B1 * C1 * !X)	0.00051	0.00051	0.00052
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00117	-0.00117	-0.00117

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00122	0.00122	0.00122
	(A2 * B1 * C1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * B1 * !C1 * !X)	0.00107	0.00107	0.00107
	(A2 * B1 * !C1 * !X)	-0.00110	-0.00113	-0.00112
	(A2 * !B1 * !C1 * !X)	0.00101	0.00101	0.00101
	(A2 * !B1 * !C1 * !X)	-0.00115	-0.00115	-0.00115
	(A1 * !A2 * B1 * C1 * X)	0.00122	0.00122	0.00122
	(A1 * !A2 * B1 * C1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * B1 * !C1 * !X)	0.00107	0.00108	0.00107
	(A1 * !A2 * B1 * !C1 * !X)	-0.00110	-0.00113	-0.00112
	(A1 * !A2 * !B1 * !C1 * !X)	0.00101	0.00101	0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00115	-0.00115	-0.00115
	(!A1 * !A2 * B1 * C1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A2 * B1 * C1 * !X)	-0.00111	-0.00114	-0.00113
	(!A1 * !A2 * B1 * !C1 * !X)	0.00060	0.00060	0.00060
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00111	-0.00114	-0.00113
	(!A1 * !A2 * !B1 * C1 * !X)	0.00055	0.00055	0.00055
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00115	-0.00115	-0.00114
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00063	0.00064	0.00063
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00116	-0.00116	-0.00116

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00191	0.00191	0.00191
	(A2 * B1 * C1 * X)	-0.00134	-0.00134	-0.00134
	(A2 * B1 * !C1 * !X)	0.00164	0.00164	0.00165
	(A2 * B1 * !C1 * !X)	-0.00216	-0.00221	-0.00219
	(A2 * !B1 * !C1 * !X)	0.00155	0.00156	0.00156
	(A2 * !B1 * !C1 * !X)	-0.00225	-0.00226	-0.00226
	(A1 * !A2 * B1 * C1 * X)	0.00191	0.00191	0.00191
	(A1 * !A2 * B1 * C1 * X)	-0.00134	-0.00134	-0.00134
	(A1 * !A2 * B1 * !C1 * !X)	0.00165	0.00166	0.00165
	(A1 * !A2 * B1 * !C1 * !X)	-0.00216	-0.00221	-0.00219
	(A1 * !A2 * !B1 * !C1 * !X)	0.00155	0.00156	0.00156
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00225	-0.00226	-0.00226
	(!A1 * !A2 * B1 * C1 * !X)	0.00077	0.00077	0.00077
	(!A1 * !A2 * B1 * C1 * !X)	-0.00217	-0.00223	-0.00221
	(!A1 * !A2 * B1 * !C1 * !X)	0.00090	0.00089	0.00089
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00218	-0.00222	-0.00221
	(!A1 * !A2 * !B1 * C1 * !X)	0.00079	0.00080	0.00081
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00225	-0.00226	-0.00224
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00095	0.00095	0.00094
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00228	-0.00227	-0.00227

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)**	-0.00109	-0.00110	-0.00113
	(A2 * B1 * C1 * X)	0.00072	0.00072	0.00069
	(A2 * B1 * !C1 * !X)	-0.00096	-0.00097	-0.00096
	(A2 * B1 * !C1 * !X)	0.00114	0.00115	0.00114
	(A2 * !B1 * !C1 * !X)	-0.00090	-0.00093	-0.00092
	(A2 * !B1 * !C1 * !X)	0.00116	0.00117	0.00117
	(A1 * !A2 * B1 * C1 * X)	-0.00109	-0.00110	-0.00113
	(A1 * !A2 * B1 * C1 * X)	0.00072	0.00072	0.00069
	(A1 * !A2 * B1 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * !A2 * B1 * !C1 * !X)	0.00114	0.00114	0.00114
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00090	-0.00093	-0.00092
	(A1 * !A2 * !B1 * !C1 * !X)	0.00117	0.00117	0.00117
	(!A1 * !A2 * B1 * C1 * !X)	-0.00048	-0.00048	-0.00049
	(!A1 * !A2 * B1 * C1 * !X)	0.00119	0.00119	0.00115
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00056	-0.00056	-0.00056
	(!A1 * !A2 * B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00049	-0.00049	-0.00050
	(!A1 * !A2 * !B1 * C1 * !X)	0.00119	0.00119	0.00117
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00120	-0.00120	-0.00122
	(A2 * B1 * C1 * X)	0.00070	0.00070	0.00067
	(A2 * B1 * !C1 * !X)	-0.00106	-0.00107	-0.00106
	(A2 * B1 * !C1 * !X)	0.00112	0.00113	0.00112
	(A2 * !B1 * !C1 * !X)	-0.00098	-0.00101	-0.00101
	(A2 * !B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(A1 * !A2 * B1 * C1 * X)	-0.00120	-0.00120	-0.00122
	(A1 * !A2 * B1 * C1 * X)	0.00070	0.00070	0.00067
	(A1 * !A2 * B1 * !C1 * !X)	-0.00107	-0.00107	-0.00106
	(A1 * !A2 * B1 * !C1 * !X)	0.00112	0.00113	0.00112
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00097	-0.00101	-0.00101
	(A1 * !A2 * !B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(!A1 * !A2 * B1 * C1 * !X)	-0.00051	-0.00051	-0.00052
	(!A1 * !A2 * B1 * C1 * !X)	0.00117	0.00116	0.00113
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * B1 * !C1 * !X)	0.00114	0.00114	0.00113
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00052	-0.00052	-0.00053
	(!A1 * !A2 * !B1 * C1 * !X)	0.00118	0.00118	0.00116
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00116	0.00116	0.00116

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00184	-0.00185	-0.00191
	(A2 * B1 * C1 * X)	0.00141	0.00140	0.00135
	(A2 * B1 * !C1 * !X)	-0.00164	-0.00164	-0.00164
	(A2 * B1 * !C1 * !X)	0.00219	0.00221	0.00219
	(A2 * !B1 * !C1 * !X)	-0.00151	-0.00156	-0.00156
	(A2 * !B1 * !C1 * !X)	0.00225	0.00227	0.00226
	(A1 * !A2 * B1 * C1 * X)	-0.00184	-0.00185	-0.00191
	(A1 * !A2 * B1 * C1 * X)	0.00141	0.00140	0.00136
	(A1 * !A2 * B1 * !C1 * !X)	-0.00164	-0.00166	-0.00164
	(A1 * !A2 * B1 * !C1 * !X)	0.00219	0.00221	0.00219
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00150	-0.00156	-0.00156
	(A1 * !A2 * !B1 * !C1 * !X)	0.00225	0.00227	0.00226
	(!A1 * !A2 * B1 * C1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * !A2 * B1 * C1 * !X)	0.00225	0.00225	0.00221
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00090	-0.00089	-0.00089
	(!A1 * !A2 * B1 * !C1 * !X)	0.00220	0.00223	0.00221
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00077	-0.00076	-0.00078
	(!A1 * !A2 * !B1 * C1 * !X)	0.00230	0.00229	0.00227
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00095	-0.00094
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00229	0.00227	0.00227

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)	0.00042	0.00042	0.00039
	(A2 * !B1 * !B2 * !X)	-0.00137	-0.00137	-0.00141
	(!A2 * !B1 * !B2 * !X)	0.00042	0.00042	0.00039
	(!A2 * !B1 * !B2 * !X)	-0.00137	-0.00137	-0.00141
	(!A1 * !A2 * B2 * !X)	0.00042	0.00042	0.00037
	(!A1 * !A2 * B2 * !X)	-0.00129	-0.00130	-0.00140
	(!A1 * !A2 * B1 * !B2 * !X)	0.00043	0.00042	0.00037
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00131	-0.00131	-0.00140
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00049	0.00049	0.00046
	(A2 * !B1 * !B2 * !X)	-0.00137	-0.00138	-0.00142
	(!A2 * !B1 * !B2 * !X)	0.00049	0.00049	0.00046
	(!A2 * !B1 * !B2 * !X)	-0.00137	-0.00138	-0.00142
	(!A1 * !A2 * B2 * !X)	0.00050	0.00050	0.00044
	(!A1 * !A2 * B2 * !X)	-0.00128	-0.00129	-0.00140
	(!A1 * !A2 * B1 * !B2 * !X)	0.00051	0.00050	0.00045
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00130	-0.00131	-0.00140
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00071	0.00072	0.00067
	(A2 * !B1 * !B2 * !X)	-0.00255	-0.00258	-0.00265
	(!A2 * !B1 * !B2 * !X)	0.00072	0.00072	0.00067
	(!A2 * !B1 * !B2 * !X)	-0.00256	-0.00258	-0.00265
	(!A1 * !A2 * B2 * !X)	0.00072	0.00073	0.00062
	(!A1 * !A2 * B2 * !X)	-0.00241	-0.00244	-0.00263
	(!A1 * !A2 * B1 * !B2 * !X)	0.00073	0.00073	0.00064
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00245	-0.00247	-0.00263

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)	-0.00039	-0.00038	-0.00038
	(A2 * !B1 * !B2 * !X)	0.00142	0.00142	0.00141
	(!A2 * !B1 * !B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A2 * !B1 * !B2 * !X)	0.00140	0.00141	0.00141
	(!A1 * !A2 * B2 * !X)	-0.00036	-0.00037	-0.00037
	(!A1 * !A2 * B2 * !X)	0.00140	0.00142	0.00141
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * B1 * !B2 * !X)	0.00141	0.00141	0.00141
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00046	-0.00045	-0.00045
	(A2 * !B1 * !B2 * !X)	0.00143	0.00142	0.00142
	(!A2 * !B1 * !B2 * !X)	-0.00046	-0.00045	-0.00045
	(!A2 * !B1 * !B2 * !X)	0.00143	0.00142	0.00142
	(!A1 * !A2 * B2 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B2 * !X)	0.00141	0.00142	0.00142
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B1 * !B2 * !X)	0.00141	0.00142	0.00142
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00064	-0.00065	-0.00064
	(A2 * !B1 * !B2 * !X)	0.00264	0.00266	0.00266
	(!A2 * !B1 * !B2 * !X)	-0.00064	-0.00065	-0.00064
	(!A2 * !B1 * !B2 * !X)	0.00264	0.00266	0.00266
	(!A1 * !A2 * B2 * !X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A2 * B2 * !X)	0.00265	0.00266	0.00266
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00063	-0.00063	-0.00063
	(!A1 * !A2 * B1 * !B2 * !X)	0.00265	0.00266	0.00266

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22ai_1	9.59040
sky130_fd_sc_hs__o22ai_2	15.98400
sky130_fd_sc_hs__o22ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__o22ai_1	0.00259	0.00258	0.00267	0.00277	0.16131
sky130_fd_sc_hs__o22ai_2	0.00484	0.00507	0.00506	0.00505	0.30606
sky130_fd_sc_hs__o22ai_4	0.01002	0.00965	0.01058	0.00999	0.59751

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	0.00014	0.00019
sky130_fd_sc_hs__o22ai_2	0.00000	0.00028	0.00039
sky130_fd_sc_hs__o22ai_4	0.00000	0.00056	0.00077

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)	0.41486	2.00922	13.63340
	A2->Y (FR)	0.37365	1.91086	13.26880
	B1->Y (FR)	0.25947	1.84577	13.47280
	B2->Y (FR)	0.22460	1.75906	13.10950
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.39419	1.78595	13.61500
	A2->Y (FR)	0.34521	1.68183	13.24400
	B1->Y (FR)	0.23552	1.61982	13.42230
	B2->Y (FR)	0.18231	1.51363	13.04820
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.36762	1.58462	13.55010
	A2->Y (FR)	0.32275	1.49083	13.22360
	B1->Y (FR)	0.22075	1.43945	13.48560
	B2->Y (FR)	0.17532	1.34458	13.13230

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.07190	0.61316	4.58655
	A2->Y (RF)	0.06576	0.60213	4.56703
	B1->Y (RF)	0.05903	0.63403	4.85393
	B2->Y (RF)	0.05353	0.62033	4.81309
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.07023	0.57369	4.60321
	A2->Y (RF)	0.06309	0.55997	4.57734
	B1->Y (RF)	0.05636	0.59367	4.92717
	B2->Y (RF)	0.04877	0.57261	4.86124
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.06136	0.51019	4.51947
	A2->Y (RF)	0.05825	0.50646	4.49705
	B1->Y (RF)	0.04784	0.52906	4.91855
	B2->Y (RF)	0.04944	0.54429	5.03795

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00110	0.00100	0.00096
	A1	0.00581	0.00571	0.00565
	A2	0.00116	0.00104	0.00100
	A2	0.00527	0.00515	0.00510
	B1	-0.00004	-0.00014	-0.00016
	B1	0.00394	0.00385	0.00385
	B2	0.00000	-0.00010	-0.00011
	B2	0.00346	0.00335	0.00333
sky130_fd_sc_hs__o22ai_2	A1	0.00194	0.00171	0.00166
	A1	0.01120	0.01099	0.01094
	A2	0.00190	0.00160	0.00156
	A2	0.01022	0.00996	0.00988
	B1	-0.00029	-0.00044	-0.00046
	B1	0.00763	0.00746	0.00747
	B2	-0.00032	-0.00051	-0.00050
	B2	0.00650	0.00633	0.00631
sky130_fd_sc_hs__o22ai_4	A1	0.00298	0.00255	0.00250
	A1	0.02136	0.02094	0.02088
	A2	0.00298	0.00251	0.00245
	A2	0.01916	0.01867	0.01857
	B1	-0.00076	-0.00114	-0.00109
	B1	0.01503	0.01468	0.01470
	B2	-0.00069	-0.00107	-0.00102
	B2	0.01289	0.01243	0.01253

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00597	0.00591	0.00583
	A1	0.00112	0.00105	0.00099
	A2	0.00494	0.00494	0.00487
	A2	0.00066	0.00063	0.00058
	B1	0.00507	0.00498	0.00495
	B1	0.00114	0.00106	0.00099
	B2	0.00415	0.00410	0.00407
	B2	0.00073	0.00069	0.00063
sky130_fd_sc_hs__o22ai_2	A1	0.01191	0.01176	0.01162
	A1	0.00239	0.00222	0.00207
	A2	0.00990	0.00983	0.00977
	A2	0.00122	0.00117	0.00107
	B1	0.01012	0.00990	0.00974
	B1	0.00239	0.00219	0.00206
	B2	0.00788	0.00778	0.00774
	B2	0.00115	0.00106	0.00097
sky130_fd_sc_hs__o22ai_4	A1	0.02281	0.02250	0.02228
	A1	0.00395	0.00355	0.00334
	A2	0.01879	0.01861	0.01858
	A2	0.00200	0.00173	0.00168
	B1	0.01946	0.01902	0.01888
	B1	0.00401	0.00349	0.00334
	B2	0.01545	0.01524	0.01540
	B2	0.00209	0.00181	0.00175

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00110	0.00111	0.00110
	(A2 * B2 * !Y)	-0.00121	-0.00124	-0.00123
	(A2 * B1 * !B2 * !Y)	0.00110	0.00111	0.00110
	(A2 * B1 * !B2 * !Y)	-0.00121	-0.00124	-0.00123
	(A2 * !B1 * !B2 * Y)	0.00110	0.00111	0.00110
	(A2 * !B1 * !B2 * Y)	-0.00121	-0.00124	-0.00123
	(!A2 * !B1 * !B2 * Y)	0.00103	0.00104	0.00103
	(!A2 * !B1 * !B2 * Y)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00206	0.00206	0.00204
	(A2 * B2 * !Y)	-0.00236	-0.00243	-0.00241
	(A2 * B1 * !B2 * !Y)	0.00206	0.00206	0.00204
	(A2 * B1 * !B2 * !Y)	-0.00236	-0.00243	-0.00241
	(A2 * !B1 * !B2 * Y)	0.00204	0.00205	0.00203
	(A2 * !B1 * !B2 * Y)	-0.00239	-0.00244	-0.00243
	(!A2 * !B1 * !B2 * Y)	0.00191	0.00192	0.00191
	(!A2 * !B1 * !B2 * Y)	-0.00249	-0.00250	-0.00249
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00411	0.00415	0.00411
	(A2 * B2 * !Y)	-0.00464	-0.00480	-0.00475
	(A2 * B1 * !B2 * !Y)	0.00411	0.00415	0.00411
	(A2 * B1 * !B2 * !Y)	-0.00464	-0.00480	-0.00475
	(A2 * !B1 * !B2 * Y)	0.00397	0.00402	0.00398
	(A2 * !B1 * !B2 * Y)	-0.00478	-0.00494	-0.00489
	(!A2 * !B1 * !B2 * Y)	0.00370	0.00373	0.00370
	(!A2 * !B1 * !B2 * Y)	-0.00503	-0.00506	-0.00504

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00110	-0.00111	-0.00110
	(A2 * B2 * !Y)	0.00123	0.00124	0.00123
	(A2 * B1 * !B2 * !Y)	-0.00110	-0.00111	-0.00110
	(A2 * B1 * !B2 * !Y)	0.00123	0.00124	0.00123
	(A2 * !B1 * !B2 * Y)	-0.00110	-0.00111	-0.00110
	(A2 * !B1 * !B2 * Y)	0.00122	0.00124	0.00123
	(!A2 * !B1 * !B2 * Y)	-0.00100	-0.00104	-0.00103
	(!A2 * !B1 * !B2 * Y)	0.00126	0.00126	0.00125
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00204	-0.00206	-0.00204
	(A2 * B2 * !Y)	0.00239	0.00243	0.00241
	(A2 * B1 * !B2 * !Y)	-0.00206	-0.00206	-0.00204
	(A2 * B1 * !B2 * !Y)	0.00242	0.00243	0.00241
	(A2 * !B1 * !B2 * Y)	-0.00203	-0.00204	-0.00203
	(A2 * !B1 * !B2 * Y)	0.00242	0.00244	0.00243
	(!A2 * !B1 * !B2 * Y)	-0.00185	-0.00192	-0.00191
	(!A2 * !B1 * !B2 * Y)	0.00251	0.00252	0.00250
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00411	-0.00413	-0.00410
	(A2 * B2 * !Y)	0.00476	0.00480	0.00475
	(A2 * B1 * !B2 * !Y)	-0.00411	-0.00413	-0.00410
	(A2 * B1 * !B2 * !Y)	0.00476	0.00480	0.00475
	(A2 * !B1 * !B2 * Y)	-0.00397	-0.00399	-0.00397
	(A2 * !B1 * !B2 * Y)	0.00490	0.00494	0.00489
	(!A2 * !B1 * !B2 * Y)	-0.00359	-0.00373	-0.00370
	(!A2 * !B1 * !B2 * Y)	0.00506	0.00507	0.00505

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00109	0.00109	0.00109
	(A1 * B2 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * B1 * !B2 * !Y)	0.00109	0.00109	0.00109
	(A1 * B1 * !B2 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * !B1 * !B2 * Y)	0.00099	0.00100	0.00100
	(A1 * !B1 * !B2 * Y)	-0.00115	-0.00118	-0.00117
	(!A1 * !B1 * !B2 * Y)	0.00093	0.00094	0.00094
	(!A1 * !B1 * !B2 * Y)	-0.00120	-0.00120	-0.00120
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00234	0.00234	0.00234
	(A1 * B2 * !Y)	-0.00147	-0.00148	-0.00148
	(A1 * B1 * !B2 * !Y)	0.00234	0.00234	0.00234
	(A1 * B1 * !B2 * !Y)	-0.00148	-0.00148	-0.00148
	(A1 * !B1 * !B2 * Y)	0.00203	0.00205	0.00203
	(A1 * !B1 * !B2 * Y)	-0.00241	-0.00246	-0.00244
	(!A1 * !B1 * !B2 * Y)	0.00190	0.00192	0.00190
	(!A1 * !B1 * !B2 * Y)	-0.00252	-0.00253	-0.00252
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00429	0.00430	0.00431
	(A1 * B2 * !Y)	-0.00288	-0.00289	-0.00288
	(A1 * B1 * !B2 * !Y)	0.00430	0.00430	0.00431
	(A1 * B1 * !B2 * !Y)	-0.00288	-0.00289	-0.00288
	(A1 * !B1 * !B2 * Y)	0.00390	0.00392	0.00391
	(A1 * !B1 * !B2 * Y)	-0.00448	-0.00461	-0.00459
	(!A1 * !B1 * !B2 * Y)	0.00365	0.00363	0.00366
	(!A1 * !B1 * !B2 * Y)	-0.00475	-0.00474	-0.00476

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00106	-0.00106	-0.00109
	(A1 * B2 * !Y)	0.00078	0.00078	0.00075
	(A1 * B1 * !B2 * !Y)	-0.00106	-0.00106	-0.00109
	(A1 * B1 * !B2 * !Y)	0.00078	0.00078	0.00075
	(A1 * !B1 * !B2 * Y)	-0.00099	-0.00100	-0.00099
	(A1 * !B1 * !B2 * Y)	0.00117	0.00118	0.00117
	(!A1 * !B1 * !B2 * Y)	-0.00091	-0.00094	-0.00094
	(!A1 * !B1 * !B2 * Y)	0.00120	0.00120	0.00120
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00224	-0.00224	-0.00234
	(A1 * B2 * !Y)	0.00158	0.00157	0.00150
	(A1 * B1 * !B2 * !Y)	-0.00224	-0.00224	-0.00234
	(A1 * B1 * !B2 * !Y)	0.00158	0.00157	0.00150
	(A1 * !B1 * !B2 * Y)	-0.00202	-0.00203	-0.00202
	(A1 * !B1 * !B2 * Y)	0.00244	0.00246	0.00244
	(!A1 * !B1 * !B2 * Y)	-0.00184	-0.00191	-0.00190
	(!A1 * !B1 * !B2 * Y)	0.00253	0.00254	0.00253
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00416	-0.00416	-0.00430
	(A1 * B2 * !Y)	0.00303	0.00301	0.00292
	(A1 * B1 * !B2 * !Y)	-0.00416	-0.00417	-0.00430
	(A1 * B1 * !B2 * !Y)	0.00303	0.00302	0.00292
	(A1 * !B1 * !B2 * Y)	-0.00389	-0.00392	-0.00390
	(A1 * !B1 * !B2 * Y)	0.00457	0.00461	0.00459
	(!A1 * !B1 * !B2 * Y)	-0.00354	-0.00363	-0.00366
	(!A1 * !B1 * !B2 * Y)	0.00477	0.00479	0.00477

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00114	0.00115	0.00114
	(A2 * B2 * !Y)	-0.00117	-0.00121	-0.00120
	(A1 * !A2 * B2 * !Y)	0.00114	0.00115	0.00114
	(A1 * !A2 * B2 * !Y)	-0.00117	-0.00119	-0.00120
	(!A1 * !A2 * B2 * Y)	0.00045	0.00046	0.00045
	(!A1 * !A2 * B2 * Y)	-0.00144	-0.00148	-0.00147
	(!A1 * !A2 * !B2 * Y)	0.00051	0.00051	0.00047
	(!A1 * !A2 * !B2 * Y)	-0.00142	-0.00143	-0.00149
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00203	0.00204	0.00203
	(A2 * B2 * !Y)	-0.00240	-0.00247	-0.00244
	(A1 * !A2 * B2 * !Y)	0.00203	0.00204	0.00203
	(A1 * !A2 * B2 * !Y)	-0.00240	-0.00244	-0.00244
	(!A1 * !A2 * B2 * Y)	0.00077	0.00077	0.00076
	(!A1 * !A2 * B2 * Y)	-0.00285	-0.00292	-0.00289
	(!A1 * !A2 * !B2 * Y)	0.00088	0.00088	0.00080
	(!A1 * !A2 * !B2 * Y)	-0.00282	-0.00285	-0.00296
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00438	0.00440	0.00435
	(A2 * B2 * !Y)	-0.00452	-0.00464	-0.00462
	(A1 * !A2 * B2 * !Y)	0.00438	0.00439	0.00435
	(A1 * !A2 * B2 * !Y)	-0.00452	-0.00466	-0.00463
	(!A1 * !A2 * B2 * Y)	0.00145	0.00146	0.00145
	(!A1 * !A2 * B2 * Y)	-0.00581	-0.00592	-0.00589
	(!A1 * !A2 * !B2 * Y)	0.00165	0.00163	0.00152
	(!A1 * !A2 * !B2 * Y)	-0.00578	-0.00576	-0.00600

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00114	-0.00115	-0.00114
	(A2 * B2 * !Y)	0.00119	0.00121	0.00120
	(A1 * !A2 * B2 * !Y)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * B2 * !Y)	0.00120	0.00119	0.00120
	(!A1 * !A2 * B2 * Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * B2 * Y)	0.00148	0.00148	0.00147
	(!A1 * !A2 * !B2 * Y)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !B2 * Y)	0.00149	0.00150	0.00150
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00202	-0.00204	-0.00203
	(A2 * B2 * !Y)	0.00244	0.00247	0.00244
	(A1 * !A2 * B2 * !Y)	-0.00203	-0.00202	-0.00203
	(A1 * !A2 * B2 * !Y)	0.00247	0.00244	0.00244
	(!A1 * !A2 * B2 * Y)	-0.00077	-0.00077	-0.00076
	(!A1 * !A2 * B2 * Y)	0.00291	0.00292	0.00289
	(!A1 * !A2 * !B2 * Y)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * !B2 * Y)	0.00296	0.00299	0.00298
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00436	-0.00437	-0.00435
	(A2 * B2 * !Y)	0.00464	0.00464	0.00462
	(A1 * !A2 * B2 * !Y)	-0.00435	-0.00438	-0.00435
	(A1 * !A2 * B2 * !Y)	0.00461	0.00466	0.00463
	(!A1 * !A2 * B2 * Y)	-0.00144	-0.00145	-0.00145
	(!A1 * !A2 * B2 * Y)	0.00588	0.00592	0.00589
	(!A1 * !A2 * !B2 * Y)	-0.00147	-0.00148	-0.00147
	(!A1 * !A2 * !B2 * Y)	0.00601	0.00605	0.00602

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00118	0.00118	0.00118
	(A2 * B1 * !Y)	-0.00073	-0.00072	-0.00072
	(A1 * !A2 * B1 * !Y)	0.00118	0.00118	0.00118
	(A1 * !A2 * B1 * !Y)	-0.00073	-0.00072	-0.00072
	(!A1 * !A2 * B1 * Y)	0.00038	0.00038	0.00038
	(!A1 * !A2 * B1 * Y)	-0.00143	-0.00145	-0.00145
	(!A1 * !A2 * !B1 * Y)	0.00043	0.00043	0.00039
	(!A1 * !A2 * !B1 * Y)	-0.00141	-0.00142	-0.00148
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00223	0.00224	0.00224
	(A2 * B1 * !Y)	-0.00147	-0.00148	-0.00148
	(A1 * !A2 * B1 * !Y)	0.00225	0.00225	0.00224
	(A1 * !A2 * B1 * !Y)	-0.00150	-0.00149	-0.00148
	(!A1 * !A2 * B1 * Y)	0.00073	0.00073	0.00073
	(!A1 * !A2 * B1 * Y)	-0.00279	-0.00284	-0.00283
	(!A1 * !A2 * !B1 * Y)	0.00084	0.00084	0.00076
	(!A1 * !A2 * !B1 * Y)	-0.00278	-0.00279	-0.00291
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00438	0.00438	0.00436
	(A2 * B1 * !Y)	-0.00295	-0.00292	-0.00290
	(A1 * !A2 * B1 * !Y)	0.00438	0.00437	0.00436
	(A1 * !A2 * B1 * !Y)	-0.00295	-0.00291	-0.00290
	(!A1 * !A2 * B1 * Y)	0.00137	0.00138	0.00137
	(!A1 * !A2 * B1 * Y)	-0.00547	-0.00559	-0.00556
	(!A1 * !A2 * !B1 * Y)	0.00156	0.00157	0.00144
	(!A1 * !A2 * !B1 * Y)	-0.00547	-0.00550	-0.00570

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00115	-0.00115	-0.00118
	(A2 * B1 * !Y)	0.00076	0.00075	0.00073
	(A1 * !A2 * B1 * !Y)	-0.00115	-0.00115	-0.00118
	(A1 * !A2 * B1 * !Y)	0.00075	0.00075	0.00073
	(!A1 * !A2 * B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B1 * Y)	0.00146	0.00145	0.00145
	(!A1 * !A2 * !B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !B1 * Y)	0.00148	0.00149	0.00148
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00213	-0.00214	-0.00224
	(A2 * B1 * !Y)	0.00158	0.00158	0.00150
	(A1 * !A2 * B1 * !Y)	-0.00213	-0.00215	-0.00224
	(A1 * !A2 * B1 * !Y)	0.00158	0.00158	0.00150
	(!A1 * !A2 * B1 * Y)	-0.00073	-0.00073	-0.00073
	(!A1 * !A2 * B1 * Y)	0.00285	0.00284	0.00283
	(!A1 * !A2 * !B1 * Y)	-0.00074	-0.00074	-0.00073
	(!A1 * !A2 * !B1 * Y)	0.00292	0.00293	0.00292
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00420	-0.00424	-0.00436
	(A2 * B1 * !Y)	0.00304	0.00305	0.00294
	(A1 * !A2 * B1 * !Y)	-0.00419	-0.00424	-0.00436
	(A1 * !A2 * B1 * !Y)	0.00303	0.00306	0.00294
	(!A1 * !A2 * B1 * Y)	-0.00137	-0.00138	-0.00137
	(!A1 * !A2 * B1 * Y)	0.00560	0.00559	0.00556
	(!A1 * !A2 * !B1 * Y)	-0.00138	-0.00140	-0.00139
	(!A1 * !A2 * !B1 * Y)	0.00568	0.00573	0.00572

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22a_1	12.78720
sky130_fd_sc_hs__o22a_2	12.78720
sky130_fd_sc_hs__o22a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__o22a_1	0.00222	0.00235	0.00244	0.00264	0.36842
sky130_fd_sc_hs__o22a_2	0.00240	0.00247	0.00260	0.00259	0.72077
sky130_fd_sc_hs__o22a_4	0.00466	0.00436	0.00486	0.00463	1.38437

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22a_1	0.00000	0.00022	0.00026
sky130_fd_sc_hs__o22a_2	0.00000	0.00028	0.00033
sky130_fd_sc_hs__o22a_4	0.00000	0.00057	0.00067

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)	0.18720	1.20703	8.86190
	A2->X (RR)	0.17939	1.18932	8.78124
	B1->X (RR)	0.17603	1.19083	8.61502
	B2->X (RR)	0.16672	1.16561	8.52641
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.18602	1.07019	8.96324
	A2->X (RR)	0.17718	1.05456	8.89896
	B1->X (RR)	0.17497	1.06593	8.78030
	B2->X (RR)	0.16414	1.04476	8.70090
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.19282	0.97860	9.08171
	A2->X (RR)	0.19187	0.96479	9.01355
	B1->X (RR)	0.18033	0.97183	8.89175
	B2->X (RR)	0.18018	0.96691	8.85441

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.49624	1.33886	7.08740
	A2->X (FF)	0.46269	1.25136	6.58745
	B1->X (FF)	0.39201	1.22742	6.80191
	B2->X (FF)	0.35554	1.14258	6.31206
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.64575	1.48478	7.49035
	A2->X (FF)	0.60952	1.39372	7.04692
	B1->X (FF)	0.52565	1.35423	7.21257
	B2->X (FF)	0.48609	1.26599	6.77380
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.61155	1.41993	7.45210
	A2->X (FF)	0.56906	1.32308	6.99504
	B1->X (FF)	0.51524	1.31705	7.23226
	B2->X (FF)	0.47628	1.22509	6.78168

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00742	0.00744	0.00740
	A1	0.00312	0.00314	0.00312
	A2	0.00660	0.00657	0.00651
	A2	0.00270	0.00267	0.00264
	B1	0.00664	0.00660	0.00651
	B1	0.00309	0.00304	0.00296
	B2	0.00612	0.00604	0.00595
	B2	0.00276	0.00268	0.00260
sky130_fd_sc_hs__o22a_2	A1	0.00946	0.00965	0.00968
	A1	0.00492	0.00511	0.00519
	A2	0.00858	0.00873	0.00875
	A2	0.00449	0.00464	0.00470
	B1	0.00862	0.00872	0.00870
	B1	0.00495	0.00506	0.00511
	B2	0.00776	0.00782	0.00778
	B2	0.00455	0.00476	0.00460
sky130_fd_sc_hs__o22a_4	A1	0.01865	0.01897	0.01912
	A1	0.01008	0.01039	0.01063
	A2	0.01660	0.01689	0.01698
	A2	0.00908	0.00939	0.00956
	B1	0.01718	0.01741	0.01746
	B1	0.01007	0.01029	0.01045
	B2	0.01516	0.01530	0.01533
	B2	0.00911	0.00924	0.00936

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00286	0.00292	0.00330
	A1	0.00710	0.00716	0.00710
	A2	0.00297	0.00296	0.00293
	A2	0.00667	0.00668	0.00661
	B1	0.00223	0.00217	0.00224
	B1	0.00582	0.00581	0.00578
	B2	0.00190	0.00154	0.00226
	B2	0.00527	0.00521	0.00521
sky130_fd_sc_hs__o22a_2	A1	0.00460	0.00486	0.00513
	A1	0.00900	0.00928	0.00926
	A2	0.00453	0.00473	0.00520
	A2	0.00858	0.00878	0.00877
	B1	0.00368	0.00384	0.00475
	B1	0.00738	0.00756	0.00755
	B2	0.00367	0.00377	0.00557
	B2	0.00690	0.00702	0.00706
sky130_fd_sc_hs__o22a_4	A1	0.00869	0.00925	0.00936
	A1	0.01697	0.01759	0.01762
	A2	0.00877	0.00921	0.01072
	A2	0.01614	0.01660	0.01667
	B1	0.00733	0.00780	0.01069
	B1	0.01455	0.01502	0.01509
	B2	0.00766	0.00790	0.01014
	B2	0.01377	0.01407	0.01417

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00088	0.00089	0.00088
	(A2 * B2 * X)	-0.00111	-0.00113	-0.00112
	(A2 * B1 * !B2 * X)	0.00088	0.00089	0.00088
	(A2 * B1 * !B2 * X)	-0.00111	-0.00113	-0.00112
	(A2 * !B1 * !B2 * !X)	0.00088	0.00089	0.00088
	(A2 * !B1 * !B2 * !X)	-0.00111	-0.00114	-0.00113
	(!A2 * !B1 * !B2 * !X)	0.00082	0.00082	0.00082
	(!A2 * !B1 * !B2 * !X)	-0.00115	-0.00115	-0.00115
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00105	0.00106	0.00105
	(A2 * B2 * X)	-0.00109	-0.00112	-0.00111
	(A2 * B1 * !B2 * X)	0.00105	0.00106	0.00105
	(A2 * B1 * !B2 * X)	-0.00109	-0.00112	-0.00111
	(A2 * !B1 * !B2 * !X)	0.00105	0.00106	0.00105
	(A2 * !B1 * !B2 * !X)	-0.00109	-0.00112	-0.00111
	(!A2 * !B1 * !B2 * !X)	0.00099	0.00100	0.00099
	(!A2 * !B1 * !B2 * !X)	-0.00113	-0.00114	-0.00113
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00199	0.00201	0.00199
	(A2 * B2 * X)	-0.00208	-0.00215	-0.00213
	(A2 * B1 * !B2 * X)	0.00199	0.00201	0.00199
	(A2 * B1 * !B2 * X)	-0.00208	-0.00215	-0.00213
	(A2 * !B1 * !B2 * !X)	0.00193	0.00195	0.00193
	(A2 * !B1 * !B2 * !X)	-0.00215	-0.00220	-0.00219
	(!A2 * !B1 * !B2 * !X)	0.00180	0.00181	0.00180
	(!A2 * !B1 * !B2 * !X)	-0.00225	-0.00226	-0.00225

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00088	-0.00089	-0.00088
	(A2 * B2 * X)	0.00113	0.00114	0.00112
	(A2 * B1 * !B2 * X)	-0.00088	-0.00089	-0.00088
	(A2 * B1 * !B2 * X)	0.00113	0.00114	0.00112
	(A2 * !B1 * !B2 * !X)	-0.00088	-0.00088	-0.00088
	(A2 * !B1 * !B2 * !X)	0.00112	0.00114	0.00113
	(!A2 * !B1 * !B2 * !X)	-0.00079	-0.00082	-0.00082
	(!A2 * !B1 * !B2 * !X)	0.00116	0.00116	0.00115
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00105	-0.00105	-0.00105
	(A2 * B2 * X)	0.00112	0.00112	0.00111
	(A2 * B1 * !B2 * X)	-0.00105	-0.00105	-0.00105
	(A2 * B1 * !B2 * X)	0.00111	0.00112	0.00111
	(A2 * !B1 * !B2 * !X)	-0.00104	-0.00105	-0.00105
	(A2 * !B1 * !B2 * !X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * !B2 * !X)	-0.00096	-0.00099	-0.00099
	(!A2 * !B1 * !B2 * !X)	0.00114	0.00114	0.00113
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00199	-0.00200	-0.00199
	(A2 * B2 * X)	0.00213	0.00215	0.00213
	(A2 * B1 * !B2 * X)	-0.00199	-0.00200	-0.00199
	(A2 * B1 * !B2 * X)	0.00213	0.00215	0.00213
	(A2 * !B1 * !B2 * !X)	-0.00193	-0.00194	-0.00193
	(A2 * !B1 * !B2 * !X)	0.00220	0.00220	0.00219
	(!A2 * !B1 * !B2 * !X)	-0.00175	-0.00181	-0.00180
	(!A2 * !B1 * !B2 * !X)	0.00225	0.00228	0.00226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00100	0.00099	0.00099
	(A1 * B2 * X)	-0.00070	-0.00068	-0.00068
	(A1 * B1 * !B2 * X)	0.00100	0.00099	0.00099
	(A1 * B1 * !B2 * X)	-0.00070	-0.00068	-0.00068
	(A1 * !B1 * !B2 * !X)	0.00085	0.00086	0.00085
	(A1 * !B1 * !B2 * !X)	-0.00110	-0.00113	-0.00112
	(!A1 * !B1 * !B2 * !X)	0.00079	0.00079	0.00079
	(!A1 * !B1 * !B2 * !X)	-0.00115	-0.00115	-0.00115
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00110	0.00108	0.00108
	(A1 * B2 * X)	-0.00070	-0.00069	-0.00069
	(A1 * B1 * !B2 * X)	0.00110	0.00108	0.00108
	(A1 * B1 * !B2 * X)	-0.00070	-0.00069	-0.00069
	(A1 * !B1 * !B2 * !X)	0.00100	0.00101	0.00100
	(A1 * !B1 * !B2 * !X)	-0.00105	-0.00107	-0.00107
	(!A1 * !B1 * !B2 * !X)	0.00094	0.00095	0.00094
	(!A1 * !B1 * !B2 * !X)	-0.00109	-0.00110	-0.00109
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00189	0.00186	0.00186
	(A1 * B2 * X)	-0.00139	-0.00137	-0.00136
	(A1 * B1 * !B2 * X)	0.00189	0.00186	0.00186
	(A1 * B1 * !B2 * X)	-0.00139	-0.00137	-0.00136
	(A1 * !B1 * !B2 * !X)	0.00164	0.00166	0.00164
	(A1 * !B1 * !B2 * !X)	-0.00215	-0.00219	-0.00218
	(!A1 * !B1 * !B2 * !X)	0.00152	0.00153	0.00152
	(!A1 * !B1 * !B2 * !X)	-0.00225	-0.00226	-0.00225

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00095	-0.00096	-0.00099
	(A1 * B2 * X)	0.00072	0.00072	0.00069
	(A1 * B1 * !B2 * X)	-0.00095	-0.00096	-0.00099
	(A1 * B1 * !B2 * X)	0.00072	0.00072	0.00069
	(A1 * !B1 * !B2 * !X)	-0.00085	-0.00086	-0.00085
	(A1 * !B1 * !B2 * !X)	0.00112	0.00113	0.00112
	(!A1 * !B1 * !B2 * !X)	-0.00076	-0.00079	-0.00079
	(!A1 * !B1 * !B2 * !X)	0.00115	0.00115	0.00115
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00105	-0.00105	-0.00108
	(A1 * B2 * X)	0.00072	0.00072	0.00070
	(A1 * B1 * !B2 * X)	-0.00105	-0.00105	-0.00108
	(A1 * B1 * !B2 * X)	0.00072	0.00072	0.00070
	(A1 * !B1 * !B2 * !X)	-0.00100	-0.00101	-0.00100
	(A1 * !B1 * !B2 * !X)	0.00107	0.00107	0.00107
	(!A1 * !B1 * !B2 * !X)	-0.00092	-0.00095	-0.00094
	(!A1 * !B1 * !B2 * !X)	0.00110	0.00110	0.00110
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00178	-0.00179	-0.00186
	(A1 * B2 * X)	0.00143	0.00143	0.00138
	(A1 * B1 * !B2 * X)	-0.00179	-0.00179	-0.00186
	(A1 * B1 * !B2 * X)	0.00143	0.00143	0.00138
	(A1 * !B1 * !B2 * !X)	-0.00164	-0.00165	-0.00164
	(A1 * !B1 * !B2 * !X)	0.00219	0.00219	0.00218
	(!A1 * !B1 * !B2 * !X)	-0.00147	-0.00153	-0.00152
	(!A1 * !B1 * !B2 * !X)	0.00226	0.00226	0.00226

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00094	0.00095	0.00094
	(A2 * B2 * X)	-0.00113	-0.00115	-0.00114
	(A1 * !A2 * B2 * X)	0.00094	0.00095	0.00094
	(A1 * !A2 * B2 * X)	-0.00113	-0.00116	-0.00114
	(!A1 * !A2 * B2 * !X)	0.00031	0.00032	0.00031
	(!A1 * !A2 * B2 * !X)	-0.00141	-0.00143	-0.00143
	(!A1 * !A2 * !B2 * !X)	0.00036	0.00036	0.00033
	(!A1 * !A2 * !B2 * !X)	-0.00139	-0.00140	-0.00145
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00111	0.00111	0.00110
	(A2 * B2 * X)	-0.00106	-0.00108	-0.00107
	(A1 * !A2 * B2 * X)	0.00111	0.00111	0.00110
	(A1 * !A2 * B2 * X)	-0.00106	-0.00108	-0.00107
	(!A1 * !A2 * B2 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A2 * B2 * !X)	-0.00138	-0.00139	-0.00139
	(!A1 * !A2 * !B2 * !X)	0.00044	0.00044	0.00040
	(!A1 * !A2 * !B2 * !X)	-0.00136	-0.00136	-0.00141
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00210	0.00212	0.00210
	(A2 * B2 * X)	-0.00208	-0.00213	-0.00212
	(A1 * !A2 * B2 * X)	0.00210	0.00212	0.00210
	(A1 * !A2 * B2 * X)	-0.00208	-0.00213	-0.00212
	(!A1 * !A2 * B2 * !X)	0.00095	0.00096	0.00095
	(!A1 * !A2 * B2 * !X)	-0.00252	-0.00258	-0.00256
	(!A1 * !A2 * !B2 * !X)	0.00103	0.00104	0.00098
	(!A1 * !A2 * !B2 * !X)	-0.00250	-0.00253	-0.00261

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00094	-0.00094	-0.00094
	(A2 * B2 * X)	0.00115	0.00115	0.00114
	(A1 * !A2 * B2 * X)	-0.00094	-0.00095	-0.00094
	(A1 * !A2 * B2 * X)	0.00115	0.00116	0.00114
	(!A1 * !A2 * B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1 * !A2 * B2 * !X)	0.00144	0.00143	0.00143
	(!A1 * !A2 * !B2 * !X)	-0.00031	-0.00032	-0.00032
	(!A1 * !A2 * !B2 * !X)	0.00144	0.00145	0.00145
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00110	-0.00111	-0.00110
	(A2 * B2 * X)	0.00107	0.00108	0.00107
	(A1 * !A2 * B2 * X)	-0.00110	-0.00111	-0.00110
	(A1 * !A2 * B2 * X)	0.00107	0.00108	0.00107
	(!A1 * !A2 * B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B2 * !X)	0.00140	0.00139	0.00139
	(!A1 * !A2 * !B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !B2 * !X)	0.00141	0.00141	0.00142
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00210	-0.00210	-0.00210
	(A2 * B2 * X)	0.00212	0.00213	0.00212
	(A1 * !A2 * B2 * X)	-0.00210	-0.00210	-0.00210
	(A1 * !A2 * B2 * X)	0.00212	0.00213	0.00212
	(!A1 * !A2 * B2 * !X)	-0.00095	-0.00095	-0.00095
	(!A1 * !A2 * B2 * !X)	0.00256	0.00258	0.00256
	(!A1 * !A2 * !B2 * !X)	-0.00097	-0.00097	-0.00096
	(!A1 * !A2 * !B2 * !X)	0.00263	0.00265	0.00262

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00130	0.00130	0.00129
	(A2 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * B1 * X)	0.00130	0.00130	0.00129
	(A1 * !A2 * B1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A2 * B1 * !X)	0.00062	0.00062	0.00061
	(!A1 * !A2 * B1 * !X)	-0.00125	-0.00127	-0.00126
	(!A1 * !A2 * !B1 * !X)	0.00066	0.00066	0.00063
	(!A1 * !A2 * !B1 * !X)	-0.00123	-0.00124	-0.00129
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00111	0.00111	0.00112
	(A2 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * B1 * X)	0.00111	0.00111	0.00112
	(A1 * !A2 * B1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A2 * B1 * !X)	0.00037	0.00038	0.00037
	(!A1 * !A2 * B1 * !X)	-0.00129	-0.00132	-0.00131
	(!A1 * !A2 * !B1 * !X)	0.00043	0.00043	0.00039
	(!A1 * !A2 * !B1 * !X)	-0.00127	-0.00128	-0.00133
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00197	0.00197	0.00197
	(A2 * B1 * X)	-0.00136	-0.00136	-0.00135
	(A1 * !A2 * B1 * X)	0.00197	0.00197	0.00197
	(A1 * !A2 * B1 * X)	-0.00136	-0.00136	-0.00135
	(!A1 * !A2 * B1 * !X)	0.00059	0.00060	0.00059
	(!A1 * !A2 * B1 * !X)	-0.00257	-0.00263	-0.00260
	(!A1 * !A2 * !B1 * !X)	0.00067	0.00068	0.00062
	(!A1 * !A2 * !B1 * !X)	-0.00256	-0.00258	-0.00266

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00126	-0.00127	-0.00129
	(A2 * B1 * X)	0.00069	0.00070	0.00067
	(A1 * !A2 * B1 * X)	-0.00127	-0.00127	-0.00129
	(A1 * !A2 * B1 * X)	0.00070	0.00070	0.00067
	(!A1 * !A2 * B1 * !X)	-0.00062	-0.00061	-0.00061
	(!A1 * !A2 * B1 * !X)	0.00128	0.00127	0.00126
	(!A1 * !A2 * !B1 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !A2 * !B1 * !X)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00109	-0.00109	-0.00112
	(A2 * B1 * X)	0.00070	0.00070	0.00068
	(A1 * !A2 * B1 * X)	-0.00108	-0.00109	-0.00112
	(A1 * !A2 * B1 * X)	0.00070	0.00070	0.00068
	(!A1 * !A2 * B1 * !X)	-0.00037	-0.00038	-0.00037
	(!A1 * !A2 * B1 * !X)	0.00132	0.00132	0.00131
	(!A1 * !A2 * !B1 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !A2 * !B1 * !X)	0.00133	0.00134	0.00134
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00190	-0.00191	-0.00197
	(A2 * B1 * X)	0.00143	0.00142	0.00137
	(A1 * !A2 * B1 * X)	-0.00190	-0.00191	-0.00197
	(A1 * !A2 * B1 * X)	0.00143	0.00142	0.00137
	(!A1 * !A2 * B1 * !X)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * B1 * !X)	0.00263	0.00263	0.00260
	(!A1 * !A2 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * !B1 * !X)	0.00267	0.00267	0.00267

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2ai_1	11.18880
sky130_fd_sc_hs__o2bb2ai_2	19.18080
sky130_fd_sc_hs__o2bb2ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__o2bb2ai_1	0.00209	0.00231	0.00253	0.00271	0.16180
sky130_fd_sc_hs__o2bb2ai_2	0.00479	0.00424	0.00515	0.00483	0.32563
sky130_fd_sc_hs__o2bb2ai_4	0.00985	0.01009	0.00952	0.00996	0.59666

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.00020	0.00026
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.00039	0.00053
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.00086	0.00105

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)	0.16242	0.88914	4.77726
	A2_N->Y (RR)	0.15835	0.87516	4.59249
	B1->Y (FR)	0.31917	1.91460	13.55060
	B2->Y (FR)	0.28680	1.82323	13.19900
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.14076	0.77564	4.78652
	A2_N->Y (RR)	0.13392	0.75307	4.57386
	B1->Y (FR)	0.28263	1.66639	13.62640
	B2->Y (FR)	0.23789	1.57166	13.25640
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.14977	0.70034	4.61299
	A2_N->Y (RR)	0.14244	0.68717	4.40715
	B1->Y (FR)	0.28998	1.51165	13.52420
	B2->Y (FR)	0.24477	1.41598	13.19160

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)	0.25031	1.01808	5.62822
	A2_N->Y (FF)	0.22578	0.98558	5.49383
	B1->Y (RF)	0.06342	0.59372	4.56709
	B2->Y (RF)	0.05659	0.58121	4.53804
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.22697	0.96640	5.58601
	A2_N->Y (FF)	0.20913	0.93950	5.45493
	B1->Y (RF)	0.05606	0.53982	4.55895
	B2->Y (RF)	0.05186	0.52869	4.55245
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.23135	0.97712	6.01368
	A2_N->Y (FF)	0.19949	0.93334	5.82401
	B1->Y (RF)	0.06130	0.50749	4.55945
	B2->Y (RF)	0.05277	0.48960	4.51479

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	0.00533	0.00531	0.00526
	A1_N	0.00307	0.00304	0.00300
	A2_N	0.00492	0.00479	0.00473
	A2_N	0.00309	0.00296	0.00292
	B1	0.00036	0.00029	0.00026
	B1	0.00353	0.00346	0.00342
	B2	0.00037	0.00027	0.00024
	B2	0.00315	0.00305	0.00301
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00985	0.00974	0.00968
	A1_N	0.00485	0.00473	0.00487
	A2_N	0.00857	0.00834	0.00829
	A2_N	0.00506	0.00484	0.00478
	B1	0.00045	0.00029	0.00026
	B1	0.00679	0.00659	0.00657
	B2	0.00048	0.00030	0.00028
	B2	0.00558	0.00540	0.00535
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02154	0.02136	0.02136
	A1_N	0.01062	0.01046	0.01064
	A2_N	0.01903	0.01840	0.01840
	A2_N	0.01062	0.01002	0.01021
	B1	0.00065	0.00030	0.00027
	B1	0.01323	0.01290	0.01287
	B2	0.00055	0.00009	0.00008
	B2	0.01126	0.01080	0.01075

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00380	0.00370	0.00368
	A1_N	0.00606	0.00596	0.00590
	A2_N	0.00358	0.00340	0.00335
	A2_N	0.00544	0.00526	0.00520
	B1	0.00449	0.00444	0.00441
	B1	0.00132	0.00125	0.00121
	B2	0.00363	0.00361	0.00359
	B2	0.00081	0.00078	0.00075
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00682	0.00649	0.00645
	A1_N	0.01178	0.01150	0.01136
	A2_N	0.00638	0.00608	0.00600
	A2_N	0.00996	0.00965	0.00957
	B1	0.00868	0.00853	0.00847
	B1	0.00236	0.00218	0.00211
	B2	0.00657	0.00654	0.00656
	B2	0.00141	0.00136	0.00135
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01469	0.01407	0.01392
	A1_N	0.02554	0.02489	0.02460
	A2_N	0.01305	0.01222	0.01199
	A2_N	0.02166	0.02081	0.02055
	B1	0.01794	0.01760	0.01740
	B1	0.00537	0.00498	0.00488
	B2	0.01384	0.01371	0.01384
	B2	0.00295	0.00278	0.00284

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)	0.00444	0.00432	0.00427
	(A2_N * !B1 * !B2 * Y)	0.00156	0.00144	0.00139
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00085	0.00086	0.00085
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00095	-0.00096	-0.00096
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00867	0.00838	0.00826
	(A2_N * !B1 * !B2 * Y)	0.00247	0.00216	0.00206
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00165	0.00167	0.00166
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00233	-0.00234	-0.00233
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.01905	0.01840	0.01819
	(A2_N * !B1 * !B2 * Y)	0.00562	0.00494	0.00474
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00375	0.00378	0.00376
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00496	-0.00499	-0.00497

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)	0.00043	0.00030	0.00026
	(A2_N * !B1 * !B2 * Y)	0.00333	0.00321	0.00314
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00083	-0.00085	-0.00085
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00096	0.00096	0.00096
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00067	0.00034	0.00022
	(A2_N * !B1 * !B2 * Y)	0.00691	0.00658	0.00643
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00162	-0.00167	-0.00166
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00233	0.00235	0.00234
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00157	0.00087	0.00060
	(A2_N * !B1 * !B2 * Y)	0.01509	0.01440	0.01399
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00369	-0.00378	-0.00376
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00500	0.00501	0.00498

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)	0.00407	0.00389	0.00381
	(A1_N * !B1 * !B2 * Y)	0.00158	0.00139	0.00133
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00035	0.00035	0.00034
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00119	-0.00120	-0.00121
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00751	0.00718	0.00704
	(A1_N * !B1 * !B2 * Y)	0.00269	0.00234	0.00222
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00066	0.00067	0.00064
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00222	-0.00224	-0.00227
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.01680	0.01596	0.01565
	(A1_N * !B1 * !B2 * Y)	0.00562	0.00475	0.00445
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00153	0.00154	0.00146
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00575	-0.00580	-0.00588

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)	0.00020	0.00002	-0.00003
	(A1_N * !B1 * !B2 * Y)	0.00270	0.00253	0.00247
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00034	-0.00034	-0.00033
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00121	0.00122	0.00121
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00019	-0.00011	-0.00020
	(A1_N * !B1 * !B2 * Y)	0.00503	0.00474	0.00464
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00062	-0.00063	-0.00063
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00227	0.00228	0.00227
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00012	-0.00098	-0.00113
	(A1_N * !B1 * !B2 * Y)	0.01115	0.01023	0.01009
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00143	-0.00143	-0.00142
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00588	0.00592	0.00589

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)	0.00105	0.00106	0.00105
	(A1_N * A2_N * B2 * Y)	-0.00120	-0.00123	-0.00122
	(A1_N * A2_N * !B2 * Y)	0.00100	0.00100	0.00100
	(A1_N * A2_N * !B2 * Y)	-0.00124	-0.00124	-0.00124
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00106	0.00106	0.00105
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00120	-0.00121	-0.00121
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00208	0.00210	0.00208
	(A1_N * A2_N * B2 * Y)	-0.00245	-0.00251	-0.00249
	(A1_N * A2_N * !B2 * Y)	0.00200	0.00202	0.00200
	(A1_N * A2_N * !B2 * Y)	-0.00254	-0.00256	-0.00255
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00212	0.00213	0.00211
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00241	-0.00247	-0.00245
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00403	0.00405	0.00402
	(A1_N * A2_N * B2 * Y)	-0.00475	-0.00487	-0.00483
	(A1_N * A2_N * !B2 * Y)	0.00383	0.00383	0.00382
	(A1_N * A2_N * !B2 * Y)	-0.00497	-0.00498	-0.00497
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00405	0.00406	0.00402
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00474	-0.00486	-0.00481

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)	-0.00104	-0.00105	-0.00104
	(A1_N * A2_N * B2 * Y)	0.00121	0.00123	0.00122
	(A1_N * A2_N * !B2 * Y)	-0.00098	-0.00100	-0.00100
	(A1_N * A2_N * !B2 * Y)	0.00124	0.00125	0.00125
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00105	-0.00105	-0.00105
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00121	0.00121	0.00121
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00208	-0.00209	-0.00207
	(A1_N * A2_N * B2 * Y)	0.00249	0.00251	0.00249
	(A1_N * A2_N * !B2 * Y)	-0.00196	-0.00200	-0.00200
	(A1_N * A2_N * !B2 * Y)	0.00254	0.00256	0.00255
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00211	-0.00212	-0.00211
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00246	0.00247	0.00245
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00400	-0.00403	-0.00401
	(A1_N * A2_N * B2 * Y)	0.00481	0.00487	0.00483
	(A1_N * A2_N * !B2 * Y)	-0.00375	-0.00383	-0.00382
	(A1_N * A2_N * !B2 * Y)	0.00500	0.00502	0.00498
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00401	-0.00404	-0.00402
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00481	0.00486	0.00481

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)	0.00109	0.00110	0.00109
	(A1_N * A2_N * B1 * Y)	-0.00120	-0.00124	-0.00123
	(A1_N * A2_N * !B1 * Y)	0.00103	0.00105	0.00104
	(A1_N * A2_N * !B1 * Y)	-0.00125	-0.00126	-0.00125
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00118	0.00118	0.00118
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00081	-0.00080	-0.00080
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00194	0.00194	0.00193
	(A1_N * A2_N * B1 * Y)	-0.00225	-0.00232	-0.00230
	(A1_N * A2_N * !B1 * Y)	0.00185	0.00187	0.00186
	(A1_N * A2_N * !B1 * Y)	-0.00237	-0.00238	-0.00237
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00213	0.00212	0.00212
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00146	-0.00145	-0.00145
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00402	0.00404	0.00402
	(A1_N * A2_N * B1 * Y)	-0.00478	-0.00491	-0.00487
	(A1_N * A2_N * !B1 * Y)	0.00381	0.00386	0.00382
	(A1_N * A2_N * !B1 * Y)	-0.00500	-0.00504	-0.00501
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00461	0.00462	0.00460
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00299	-0.00298	-0.00297

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)	-0.00108	-0.00110	-0.00109
	(A1_N * A2_N * B1 * Y)	0.00122	0.00124	0.00123
	(A1_N * A2_N * !B1 * Y)	-0.00102	-0.00105	-0.00104
	(A1_N * A2_N * !B1 * Y)	0.00125	0.00126	0.00126
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00114	-0.00115	-0.00118
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00084	0.00084	0.00081
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00193	-0.00194	-0.00193
	(A1_N * A2_N * B1 * Y)	0.00230	0.00232	0.00230
	(A1_N * A2_N * !B1 * Y)	-0.00182	-0.00187	-0.00186
	(A1_N * A2_N * !B1 * Y)	0.00237	0.00239	0.00238
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00205	-0.00206	-0.00212
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00152	0.00152	0.00147
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00400	-0.00403	-0.00401
	(A1_N * A2_N * B1 * Y)	0.00486	0.00491	0.00487
	(A1_N * A2_N * !B1 * Y)	-0.00374	-0.00384	-0.00382
	(A1_N * A2_N * !B1 * Y)	0.00501	0.00504	0.00502
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00441	-0.00444	-0.00460
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00314	0.00314	0.00301

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2a_1	14.38560
sky130_fd_sc_hs__o2bb2a_2	14.38560
sky130_fd_sc_hs__o2bb2a_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__o2bb2a_1	0.00209	0.00226	0.00224	0.00245	0.36010
sky130_fd_sc_hs__o2bb2a_2	0.00210	0.00235	0.00240	0.00251	0.69496
sky130_fd_sc_hs__o2bb2a_4	0.00209	0.00228	0.00443	0.00445	1.39005

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.00024	0.00028
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.00034	0.00038
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.00056	0.00066

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)	0.35804	1.64419	11.38530
	A2_N->X (FR)	0.33322	1.60866	11.22780
	B1->X (RR)	0.18451	1.19145	8.77042
	B2->X (RR)	0.17283	1.17166	8.68310
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.38203	1.52683	11.52320
	A2_N->X (FR)	0.35611	1.49200	11.37220
	B1->X (RR)	0.18641	1.05820	8.89046
	B2->X (RR)	0.17239	1.04082	8.82465
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.44797	1.48097	11.79830
	A2_N->X (FR)	0.42315	1.45243	11.67100
	B1->X (RR)	0.20846	0.97056	9.00462
	B2->X (RR)	0.19195	0.94556	8.91225

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)	0.27067	0.75030	3.07559
	A2_N->X (RF)	0.26748	0.73408	2.89352
	B1->X (FF)	0.47753	1.29577	6.93421
	B2->X (FF)	0.44894	1.21450	6.39942
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.32444	0.79299	3.15817
	A2_N->X (RF)	0.32191	0.77871	2.98210
	B1->X (FF)	0.63194	1.45716	7.33519
	B2->X (FF)	0.59944	1.37048	6.87130
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.35026	0.82729	3.44874
	A2_N->X (RF)	0.34720	0.82241	3.30117
	B1->X (FF)	0.61639	1.41477	7.35672
	B2->X (FF)	0.56522	1.30444	6.84292

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	0.00582	0.00583	0.00572
	A1_N	0.00796	0.00796	0.00787
	A2_N	0.00557	0.00550	0.00540
	A2_N	0.00725	0.00717	0.00710
	B1	0.00638	0.00640	0.00635
	B1	0.00342	0.00343	0.00340
	B2	0.00564	0.00559	0.00553
	B2	0.00296	0.00291	0.00287
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00800	0.00820	0.00813
	A1_N	0.01021	0.01038	0.01033
	A2_N	0.00769	0.00782	0.00777
	A2_N	0.00947	0.00958	0.00955
	B1	0.00863	0.00880	0.00883
	B1	0.00545	0.00562	0.00568
	B2	0.00784	0.00797	0.00798
	B2	0.00498	0.00512	0.00516
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01514	0.01564	0.01578
	A1_N	0.01669	0.01720	0.01743
	A2_N	0.01488	0.01532	0.01546
	A2_N	0.01597	0.01644	0.01655
	B1	0.01661	0.01693	0.01708
	B1	0.01068	0.01099	0.01119
	B2	0.01447	0.01472	0.01486
	B2	0.00943	0.00969	0.00988

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.00758	0.00740	0.00727
	A1_N	0.00542	0.00524	0.00511
	A2_N	0.00709	0.00687	0.00672
	A2_N	0.00543	0.00519	0.00505
	B1	0.00281	0.00288	0.00340
	B1	0.00575	0.00582	0.00578
	B2	0.00281	0.00276	0.00297
	B2	0.00544	0.00545	0.00540
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00950	0.00956	0.00943
	A1_N	0.00729	0.00736	0.00721
	A2_N	0.00907	0.00907	0.00886
	A2_N	0.00730	0.00729	0.00709
	B1	0.00437	0.00467	0.00624
	B1	0.00753	0.00783	0.00783
	B2	0.00438	0.00461	0.00477
	B2	0.00718	0.00742	0.00741
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01448	0.01497	0.01479
	A1_N	0.01297	0.01342	0.01325
	A2_N	0.01401	0.01471	0.01420
	A2_N	0.01298	0.01338	0.01316
	B1	0.00823	0.00882	0.01003
	B1	0.01416	0.01474	0.01482
	B2	0.00829	0.00870	0.00899
	B2	0.01323	0.01366	0.01376

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)	0.00398	0.00386	0.00382
	(A2_N * !B1 * !B2 * !X)	0.00113	0.00100	0.00097
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00089	0.00090	0.00089
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00092	-0.00093	-0.00093
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00422	0.00410	0.00406
	(A2_N * !B1 * !B2 * !X)	0.00128	0.00116	0.00112
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00094	0.00095	0.00095
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00090	-0.00091	-0.00090
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00497	0.00486	0.00481
	(A2_N * !B1 * !B2 * !X)	0.00204	0.00193	0.00188
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00094	0.00095	0.00094
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00088	-0.00089	-0.00089

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)	0.00043	0.00031	0.00028
	(A2_N * !B1 * !B2 * !X)	0.00330	0.00318	0.00311
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00088	-0.00090	-0.00089
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00093	0.00094	0.00093
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00045	0.00032	0.00028
	(A2_N * !B1 * !B2 * !X)	0.00340	0.00328	0.00322
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00093	-0.00095	-0.00095
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00091	0.00091	0.00091
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00084	0.00072	0.00067
	(A2_N * !B1 * !B2 * !X)	0.00382	0.00368	0.00360
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00092	-0.00095	-0.00094
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00089	0.00090	0.00089

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)	0.00364	0.00346	0.00340
	(A1_N * !B1 * !B2 * !X)	0.00124	0.00106	0.00100
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00033	0.00033	0.00032
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00118	-0.00118	-0.00119
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00394	0.00376	0.00369
	(A1_N * !B1 * !B2 * !X)	0.00140	0.00122	0.00115
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00038	0.00038	0.00037
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00120	-0.00120	-0.00121
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00466	0.00448	0.00441
	(A1_N * !B1 * !B2 * !X)	0.00217	0.00199	0.00192
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00035	0.00035	0.00034
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00117	-0.00117	-0.00118

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)	0.00014	-0.00002	-0.00006
	(A1_N * !B1 * !B2 * !X)	0.00256	0.00240	0.00235
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00031	-0.00031	-0.00031
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00119	0.00120	0.00119
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00013	-0.00004	-0.00009
	(A1_N * !B1 * !B2 * !X)	0.00268	0.00251	0.00246
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00036	-0.00037	-0.00037
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00121	0.00122	0.00121
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00060	0.00039	0.00033
	(A1_N * !B1 * !B2 * !X)	0.00309	0.00291	0.00283
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00034	-0.00033	-0.00033
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00119	0.00119	0.00118

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)	0.00091	0.00091	0.00090
	(A1_N * A2_N * B2 * !X)	-0.00107	-0.00109	-0.00109
	(A1_N * A2_N * !B2 * !X)	0.00087	0.00087	0.00087
	(A1_N * A2_N * !B2 * !X)	-0.00111	-0.00112	-0.00111
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00090	0.00091	0.00091
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00106	-0.00109	-0.00109
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00104	0.00104	0.00103
	(A1_N * A2_N * B2 * !X)	-0.00111	-0.00112	-0.00112
	(A1_N * A2_N * !B2 * !X)	0.00099	0.00099	0.00099
	(A1_N * A2_N * !B2 * !X)	-0.00114	-0.00115	-0.00114
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00103	0.00104	0.00103
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00110	-0.00112	-0.00112
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00183	0.00184	0.00183
	(A1_N * A2_N * B2 * !X)	-0.00219	-0.00225	-0.00223
	(A1_N * A2_N * !B2 * !X)	0.00174	0.00176	0.00174
	(A1_N * A2_N * !B2 * !X)	-0.00229	-0.00231	-0.00230
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00185	0.00185	0.00183
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00217	-0.00223	-0.00221

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)	-0.00090	-0.00090	-0.00090
	(A1_N * A2_N * B2 * !X)	0.00109	0.00109	0.00109
	(A1_N * A2_N * !B2 * !X)	-0.00084	-0.00087	-0.00087
	(A1_N * A2_N * !B2 * !X)	0.00111	0.00112	0.00112
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00090	-0.00090	-0.00090
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00109	0.00109	0.00109
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00103	-0.00103	-0.00103
	(A1_N * A2_N * B2 * !X)	0.00113	0.00112	0.00112
	(A1_N * A2_N * !B2 * !X)	-0.00096	-0.00099	-0.00099
	(A1_N * A2_N * !B2 * !X)	0.00114	0.00115	0.00115
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00103	-0.00103	-0.00103
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00113	0.00112	0.00112
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00181	-0.00183	-0.00182
	(A1_N * A2_N * B2 * !X)	0.00222	0.00225	0.00223
	(A1_N * A2_N * !B2 * !X)	-0.00170	-0.00175	-0.00174
	(A1_N * A2_N * !B2 * !X)	0.00229	0.00231	0.00230
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00185	-0.00184	-0.00183
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00223	0.00223	0.00221

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)	0.00097	0.00097	0.00097
	(A1_N * A2_N * B1 * !X)	-0.00109	-0.00111	-0.00111
	(A1_N * A2_N * !B1 * !X)	0.00093	0.00093	0.00093
	(A1_N * A2_N * !B1 * !X)	-0.00113	-0.00114	-0.00114
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00104	0.00105	0.00105
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00074	-0.00074	-0.00074
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00111	0.00111	0.00111
	(A1_N * A2_N * B1 * !X)	-0.00107	-0.00108	-0.00108
	(A1_N * A2_N * !B1 * !X)	0.00107	0.00107	0.00107
	(A1_N * A2_N * !B1 * !X)	-0.00110	-0.00111	-0.00111
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00113	0.00111	0.00111
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00080	-0.00078	-0.00078
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00176	0.00178	0.00176
	(A1_N * A2_N * B1 * !X)	-0.00218	-0.00223	-0.00221
	(A1_N * A2_N * !B1 * !X)	0.00168	0.00170	0.00169
	(A1_N * A2_N * !B1 * !X)	-0.00228	-0.00229	-0.00228
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00194	0.00195	0.00195
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00143	-0.00144	-0.00144

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)	-0.00097	-0.00097	-0.00097
	(A1_N * A2_N * B1 * !X)	0.00112	0.00111	0.00111
	(A1_N * A2_N * !B1 * !X)	-0.00091	-0.00093	-0.00093
	(A1_N * A2_N * !B1 * !X)	0.00113	0.00114	0.00114
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00102	-0.00102	-0.00105
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00077	0.00077	0.00075
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00111	-0.00111	-0.00111
	(A1_N * A2_N * B1 * !X)	0.00109	0.00108	0.00108
	(A1_N * A2_N * !B1 * !X)	-0.00104	-0.00107	-0.00107
	(A1_N * A2_N * !B1 * !X)	0.00110	0.00111	0.00111
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00108	-0.00108	-0.00111
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00081	0.00081	0.00079
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00176	-0.00177	-0.00176
	(A1_N * A2_N * B1 * !X)	0.00221	0.00223	0.00221
	(A1_N * A2_N * !B1 * !X)	-0.00165	-0.00170	-0.00169
	(A1_N * A2_N * !B1 * !X)	0.00228	0.00230	0.00228
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00185	-0.00185	-0.00195
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00154	0.00153	0.00146

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311ai_1	11.18880
sky130_fd_sc_hs__o311ai_2	19.18080
sky130_fd_sc_hs__o311ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__o311ai_1	0.00246	0.00260	0.00255	0.00266	0.00275	0.09970
sky130_fd_sc_hs__o311ai_2	0.00477	0.00491	0.00505	0.00506	0.00520	0.18653
sky130_fd_sc_hs__o311ai_4	0.00938	0.00945	0.01008	0.00767	0.00734	0.36792

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.00010	0.00029
sky130_fd_sc_hs__o311ai_2	0.00000	0.00020	0.00058
sky130_fd_sc_hs__o311ai_4	0.00000	0.00033	0.00077

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)	0.72427	2.48768	13.52830
	A2->Y (FR)	0.70143	2.45485	13.74600
	A3->Y (FR)	0.60315	2.29483	13.18540
	B1->Y (FR)	0.14213	1.07952	8.16361
	C1->Y (FR)	0.11727	1.05845	8.13705
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.74652	2.28092	13.55740
	A2->Y (FR)	0.70400	2.21990	13.74540
	A3->Y (FR)	0.60457	2.05290	13.22510
	B1->Y (FR)	0.13688	1.01662	8.14292
	C1->Y (FR)	0.10821	0.98866	8.12024
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.65930	1.99682	13.53650
	A2->Y (FR)	0.62823	1.95462	13.78270
	A3->Y (FR)	0.51982	1.78050	13.22720
	B1->Y (FR)	0.19220	1.16875	9.82304
	C1->Y (FR)	0.13058	1.11574	9.81197

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.08832	0.59043	3.92428
	A2->Y (RF)	0.09077	0.58986	3.94747
	A3->Y (RF)	0.07909	0.57221	3.91529
	B1->Y (RF)	0.08040	0.62403	4.32193
	C1->Y (RF)	0.07046	0.62755	4.35577
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.09736	0.57316	3.97974
	A2->Y (RF)	0.09505	0.55995	3.95263
	A3->Y (RF)	0.08438	0.54272	3.92235
	B1->Y (RF)	0.08622	0.60581	4.39798
	C1->Y (RF)	0.07366	0.62875	4.62096
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.09159	0.52198	3.92774
	A2->Y (RF)	0.08887	0.51160	3.92195
	A3->Y (RF)	0.07710	0.49141	3.88936
	B1->Y (RF)	0.08156	0.59584	4.72714
	C1->Y (RF)	0.06334	0.59466	4.85410

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00085	0.00076	0.00072
	A1	0.00604	0.00596	0.00591
	A2	0.00091	0.00081	0.00076
	A2	0.00565	0.00553	0.00549
	A3	0.00090	0.00077	0.00073
	A3	0.00513	0.00500	0.00495
	B1	0.00017	0.00000	-0.00003
	B1	0.00460	0.00437	0.00439
	C1	-0.00026	-0.00040	-0.00043
	C1	0.00373	0.00359	0.00359
sky130_fd_sc_hs__o311ai_2	A1	0.00199	0.00176	0.00170
	A1	0.01244	0.01222	0.01213
	A2	0.00201	0.00177	0.00170
	A2	0.01154	0.01129	0.01122
	A3	0.00197	0.00165	0.00160
	A3	0.01056	0.01015	0.01013
	B1	0.00038	0.00006	0.00000
	B1	0.00926	0.00894	0.00887
	C1	-0.00053	-0.00081	-0.00085
	C1	0.00734	0.00703	0.00705

sky130_fd_sc_hs__o311ai_4	**A1**	0.00279	0.00244	0.00234
	A1	0.02321	0.02286	0.02275
	A2	0.00290	0.00250	0.00237
	A2	0.02140	0.02100	0.02086
	A3	0.00288	0.00224	0.00216
	A3	0.01968	0.01907	0.01888
	B1	0.00042	-0.00032	-0.00037
	B1	0.01554	0.01482	0.01476
	C1	-0.00148	-0.00190	-0.00190
	C1	0.01123	0.01082	0.01086

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.00694	0.00686	0.00676
	A1	0.00169	0.00161	0.00153
	A2	0.00615	0.00609	0.00601
	A2	0.00132	0.00125	0.00118
	A3	0.00515	0.00514	0.00510
	A3	0.00078	0.00077	0.00072
	B1	0.00617	0.00609	0.00599
	B1	0.00178	0.00169	0.00161
	C1	0.00567	0.00558	0.00547
	C1	0.00176	0.00166	0.00157

sky130_fd_sc_hs__o311ai_2	**A1**	0.01398	0.01378	0.01356
	A1	0.00344	0.00323	0.00304
	A2	0.01203	0.01190	0.01178
	A2	0.00227	0.00213	0.00202
	A3	0.01020	0.01015	0.01009
	A3	0.00134	0.00127	0.00120
	B1	0.01225	0.01210	0.01190
	B1	0.00347	0.00330	0.00313
	C1	0.01111	0.01090	0.01073
	C1	0.00346	0.00325	0.00308
sky130_fd_sc_hs__o311ai_4	**A1**	0.02518	0.02478	0.02439
	A1	0.00457	0.00418	0.00386
	A2	0.02172	0.02137	0.02114
	A2	0.00281	0.00243	0.00226
	A3	0.01766	0.01754	0.01752
	A3	0.00029	0.00013	0.00012
	B1	0.02128	0.02116	0.02089
	B1	0.00634	0.00619	0.00597
	C1	0.01872	0.01855	0.01834
	C1	0.00635	0.00618	0.00596

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)**	0.00104	0.00104	0.00103
	(A2 * B1 * !C1 * Y)	-0.00120	-0.00121	-0.00121
	(A2 * A3 * B1 * C1 * !Y)	0.00103	0.00104	0.00103
	(A2 * A3 * B1 * C1 * !Y)	-0.00119	-0.00121	-0.00121
	(A2 * !B1 * Y)	0.00104	0.00104	0.00103
	(A2 * !B1 * Y)	-0.00120	-0.00121	-0.00121
	(A2 * !A3 * B1 * C1 * !Y)	0.00103	0.00104	0.00103
	(A2 * !A3 * B1 * C1 * !Y)	-0.00119	-0.00123	-0.00121
	(!A2 * A3 * B1 * C1 * !Y)	0.00103	0.00103	0.00103
	(!A2 * A3 * B1 * C1 * !Y)	-0.00112	-0.00116	-0.00116
	(!A2 * A3 * B1 * !C1 * Y)	0.00103	0.00103	0.00103
	(!A2 * A3 * B1 * !C1 * Y)	-0.00112	-0.00116	-0.00116
	(!A2 * A3 * !B1 * Y)	0.00103	0.00103	0.00103
	(!A2 * A3 * !B1 * Y)	-0.00112	-0.00116	-0.00116
	(!A2 * !A3 * B1 * !C1 * Y)	0.00096	0.00096	0.00096
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00124	-0.00124	-0.00124
	(!A2 * !A3 * !B1 * C1 * Y)	0.00097	0.00097	0.00097
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00124	-0.00124	-0.00124
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00097	0.00097	0.00097
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00124	-0.00124	-0.00124

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00202	0.00202	0.00201
	(A2 * B1 * !C1 * Y)	-0.00236	-0.00243	-0.00240
	(A2 * A3 * B1 * C1 * !Y)	0.00203	0.00203	0.00201
	(A2 * A3 * B1 * C1 * !Y)	-0.00235	-0.00242	-0.00240
	(A2 * !B1 * Y)	0.00202	0.00202	0.00201
	(A2 * !B1 * Y)	-0.00236	-0.00243	-0.00240
	(A2 * !A3 * B1 * C1 * !Y)	0.00203	0.00203	0.00201
	(A2 * !A3 * B1 * C1 * !Y)	-0.00235	-0.00242	-0.00240
	(!A2 * A3 * B1 * C1 * !Y)	0.00203	0.00203	0.00201
	(!A2 * A3 * B1 * C1 * !Y)	-0.00221	-0.00229	-0.00228
	(!A2 * A3 * B1 * !C1 * Y)	0.00201	0.00202	0.00201
	(!A2 * A3 * B1 * !C1 * Y)	-0.00222	-0.00230	-0.00229
	(!A2 * A3 * !B1 * Y)	0.00201	0.00202	0.00201
	(!A2 * A3 * !B1 * Y)	-0.00222	-0.00230	-0.00229
	(!A2 * !A3 * B1 * !C1 * Y)	0.00182	0.00184	0.00182
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00248	-0.00250	-0.00248
	(!A2 * !A3 * !B1 * C1 * Y)	0.00186	0.00187	0.00186
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00248	-0.00249	-0.00248
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00186	0.00187	0.00186
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00248	-0.00249	-0.00248

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00401	0.00406	0.00402
	(A2 * B1 * !C1 * Y)	-0.00466	-0.00484	-0.00479
	(A2 * A3 * B1 * C1 * !Y)	0.00401	0.00406	0.00402
	(A2 * A3 * B1 * C1 * !Y)	-0.00466	-0.00484	-0.00479
	(A2 * !B1 * Y)	0.00401	0.00406	0.00402
	(A2 * !B1 * Y)	-0.00466	-0.00484	-0.00479
	(A2 * !A3 * B1 * C1 * !Y)	0.00401	0.00406	0.00402
	(A2 * !A3 * B1 * C1 * !Y)	-0.00466	-0.00484	-0.00479
	(!A2 * A3 * B1 * C1 * !Y)	0.00405	0.00403	0.00402
	(!A2 * A3 * B1 * C1 * !Y)	-0.00444	-0.00459	-0.00456
	(!A2 * A3 * B1 * !C1 * Y)	0.00404	0.00403	0.00402
	(!A2 * A3 * B1 * !C1 * Y)	-0.00445	-0.00460	-0.00457
	(!A2 * A3 * !B1 * Y)	0.00404	0.00403	0.00402
	(!A2 * A3 * !B1 * Y)	-0.00445	-0.00460	-0.00457
	(!A2 * !A3 * B1 * !C1 * Y)	0.00365	0.00366	0.00364
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00497	-0.00498	-0.00496
	(!A2 * !A3 * !B1 * C1 * Y)	0.00373	0.00375	0.00372
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00496	-0.00499	-0.00496
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00373	0.00375	0.00372
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00496	-0.00499	-0.00496

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)**	-0.00103	-0.00103	-0.00103
	(A2 * B1 * !C1 * Y)	0.00122	0.00121	0.00121
	(A2 * A3 * B1 * C1 * !Y)	-0.00103	-0.00103	-0.00103
	(A2 * A3 * B1 * C1 * !Y)	0.00122	0.00121	0.00121
	(A2 * !B1 * Y)	-0.00103	-0.00103	-0.00103
	(A2 * !B1 * Y)	0.00122	0.00121	0.00121
	(A2 * !A3 * B1 * C1 * !Y)	-0.00103	-0.00104	-0.00103
	(A2 * !A3 * B1 * C1 * !Y)	0.00122	0.00123	0.00121
	(!A2 * A3 * B1 * C1 * !Y)	-0.00103	-0.00103	-0.00103
	(!A2 * A3 * B1 * C1 * !Y)	0.00116	0.00116	0.00116
	(!A2 * A3 * B1 * !C1 * Y)	-0.00103	-0.00103	-0.00103
	(!A2 * A3 * B1 * !C1 * Y)	0.00117	0.00116	0.00116
	(!A2 * A3 * !B1 * Y)	-0.00103	-0.00103	-0.00103
	(!A2 * A3 * !B1 * Y)	0.00116	0.00116	0.00116
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00091	-0.00096	-0.00096
	(!A2 * !A3 * B1 * !C1 * Y)	0.00125	0.00124	0.00124
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00095	-0.00097	-0.00097
	(!A2 * !A3 * !B1 * C1 * Y)	0.00125	0.00124	0.00124
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00095	-0.00097	-0.00097
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00125	0.00124	0.00124

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00200	-0.00202	-0.00200
	(A2 * B1 * !C1 * Y)	0.00240	0.00243	0.00240
	(A2 * A3 * B1 * C1 * !Y)	-0.00201	-0.00202	-0.00201
	(A2 * A3 * B1 * C1 * !Y)	0.00239	0.00242	0.00240
	(A2 * !B1 * Y)	-0.00200	-0.00202	-0.00200
	(A2 * !B1 * Y)	0.00240	0.00243	0.00240
	(A2 * !A3 * B1 * C1 * !Y)	-0.00201	-0.00202	-0.00201
	(A2 * !A3 * B1 * C1 * !Y)	0.00239	0.00242	0.00240
	(!A2 * A3 * B1 * C1 * !Y)	-0.00201	-0.00202	-0.00201
	(!A2 * A3 * B1 * C1 * !Y)	0.00226	0.00229	0.00228
	(!A2 * A3 * B1 * !C1 * Y)	-0.00200	-0.00201	-0.00200
	(!A2 * A3 * B1 * !C1 * Y)	0.00228	0.00230	0.00229
	(!A2 * A3 * !B1 * Y)	-0.00200	-0.00201	-0.00200
	(!A2 * A3 * !B1 * Y)	0.00228	0.00230	0.00229
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00174	-0.00184	-0.00182
	(!A2 * !A3 * B1 * !C1 * Y)	0.00250	0.00251	0.00249
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00179	-0.00187	-0.00186
	(!A2 * !A3 * !B1 * C1 * Y)	0.00248	0.00250	0.00249
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00180	-0.00187	-0.00186
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00248	0.00250	0.00249

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00401	-0.00404	-0.00402
	(A2 * B1 * !C1 * Y)	0.00477	0.00484	0.00479
	(A2 * A3 * B1 * C1 * !Y)	-0.00401	-0.00404	-0.00402
	(A2 * A3 * B1 * C1 * !Y)	0.00477	0.00484	0.00479
	(A2 * !B1 * Y)	-0.00401	-0.00404	-0.00402
	(A2 * !B1 * Y)	0.00477	0.00484	0.00479
	(A2 * !A3 * B1 * C1 * !Y)	-0.00401	-0.00404	-0.00402
	(A2 * !A3 * B1 * C1 * !Y)	0.00477	0.00484	0.00479
	(!A2 * A3 * B1 * C1 * !Y)	-0.00401	-0.00403	-0.00402
	(!A2 * A3 * B1 * C1 * !Y)	0.00455	0.00459	0.00456
	(!A2 * A3 * B1 * !C1 * Y)	-0.00400	-0.00402	-0.00401
	(!A2 * A3 * B1 * !C1 * Y)	0.00456	0.00460	0.00457
	(!A2 * A3 * !B1 * Y)	-0.00401	-0.00402	-0.00401
	(!A2 * A3 * !B1 * Y)	0.00456	0.00460	0.00457
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00352	-0.00366	-0.00364
	(!A2 * !A3 * B1 * !C1 * Y)	0.00500	0.00501	0.00497
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00360	-0.00375	-0.00372
	(!A2 * !A3 * !B1 * C1 * Y)	0.00496	0.00499	0.00497
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00361	-0.00375	-0.00372
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00496	0.00499	0.00497

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)**	0.00102	0.00103	0.00103
	(A1 * A3 * B1 * C1 * !Y)	-0.00087	-0.00087	-0.00087
	(A1 * A3 * B1 * !C1 * Y)	0.00098	0.00098	0.00098
	(A1 * A3 * B1 * !C1 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * A3 * !B1 * Y)	0.00098	0.00098	0.00098
	(A1 * A3 * !B1 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * !A3 * B1 * C1 * !Y)	0.00105	0.00103	0.00103
	(A1 * !A3 * B1 * C1 * !Y)	-0.00084	-0.00083	-0.00083
	(A1 * !A3 * B1 * !C1 * Y)	0.00098	0.00098	0.00098
	(A1 * !A3 * B1 * !C1 * Y)	-0.00121	-0.00124	-0.00123
	(A1 * !A3 * !B1 * C1 * Y)	0.00098	0.00098	0.00098
	(A1 * !A3 * !B1 * C1 * Y)	-0.00121	-0.00124	-0.00123
	(A1 * !A3 * !B1 * !C1 * Y)	0.00098	0.00099	0.00098
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00121	-0.00124	-0.00123
	(!A1 * A3 * B1 * C1 * !Y)	0.00103	0.00103	0.00103
	(!A1 * A3 * B1 * C1 * !Y)	-0.00116	-0.00119	-0.00118
	(!A1 * A3 * B1 * !C1 * Y)	0.00098	0.00099	0.00098
	(!A1 * A3 * B1 * !C1 * Y)	-0.00121	-0.00124	-0.00123
	(!A1 * A3 * !B1 * Y)	0.00098	0.00099	0.00098
	(!A1 * A3 * !B1 * Y)	-0.00121	-0.00124	-0.00123
	(!A1 * !A3 * B1 * !C1 * Y)	0.00090	0.00091	0.00090
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00126	-0.00126	-0.00126
	(!A1 * !A3 * !B1 * C1 * Y)	0.00091	0.00092	0.00092
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00126	-0.00126	-0.00126
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00092	0.00091	0.00092
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00127	-0.00126	-0.00126

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00205	0.00206	0.00206
	(A1 * A3 * B1 * C1 * !Y)	-0.00181	-0.00180	-0.00180
	(A1 * A3 * B1 * !C1 * Y)	0.00205	0.00203	0.00203
	(A1 * A3 * B1 * !C1 * Y)	-0.00196	-0.00196	-0.00196
	(A1 * A3 * !B1 * Y)	0.00204	0.00203	0.00203
	(A1 * A3 * !B1 * Y)	-0.00196	-0.00196	-0.00196
	(A1 * !A3 * B1 * C1 * !Y)	0.00208	0.00205	0.00204
	(A1 * !A3 * B1 * C1 * !Y)	-0.00174	-0.00171	-0.00171
	(A1 * !A3 * B1 * !C1 * Y)	0.00202	0.00203	0.00203
	(A1 * !A3 * B1 * !C1 * Y)	-0.00238	-0.00244	-0.00243
	(A1 * !A3 * !B1 * C1 * Y)	0.00202	0.00203	0.00203
	(A1 * !A3 * !B1 * C1 * Y)	-0.00238	-0.00244	-0.00243
	(A1 * !A3 * !B1 * !C1 * Y)	0.00202	0.00204	0.00203
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00238	-0.00244	-0.00243
	(!A1 * A3 * B1 * C1 * !Y)	0.00205	0.00205	0.00204
	(!A1 * A3 * B1 * C1 * !Y)	-0.00240	-0.00247	-0.00245
	(!A1 * A3 * B1 * !C1 * Y)	0.00203	0.00204	0.00203
	(!A1 * A3 * B1 * !C1 * Y)	-0.00243	-0.00249	-0.00247
	(!A1 * A3 * !B1 * Y)	0.00202	0.00204	0.00203
	(!A1 * A3 * !B1 * Y)	-0.00242	-0.00249	-0.00247
	(!A1 * !A3 * B1 * !C1 * Y)	0.00184	0.00186	0.00185
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00253	-0.00254	-0.00253
	(!A1 * !A3 * !B1 * C1 * Y)	0.00187	0.00189	0.00188
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00252	-0.00254	-0.00253
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00188	0.00188	0.00188
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00252	-0.00253	-0.00253

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00406	0.00407	0.00406
	(A1 * A3 * B1 * C1 * !Y)	-0.00349	-0.00347	-0.00346
	(A1 * A3 * B1 * !C1 * Y)	0.00399	0.00398	0.00398
	(A1 * A3 * B1 * !C1 * Y)	-0.00382	-0.00384	-0.00383
	(A1 * A3 * !B1 * Y)	0.00399	0.00398	0.00398
	(A1 * A3 * !B1 * Y)	-0.00383	-0.00384	-0.00383
	(A1 * !A3 * B1 * C1 * !Y)	0.00404	0.00405	0.00404
	(A1 * !A3 * B1 * C1 * !Y)	-0.00330	-0.00331	-0.00332
	(A1 * !A3 * B1 * !C1 * Y)	0.00398	0.00404	0.00397
	(A1 * !A3 * B1 * !C1 * Y)	-0.00467	-0.00479	-0.00476
	(A1 * !A3 * !B1 * C1 * Y)	0.00398	0.00395	0.00397
	(A1 * !A3 * !B1 * C1 * Y)	-0.00467	-0.00479	-0.00476
	(A1 * !A3 * !B1 * !C1 * Y)	0.00398	0.00398	0.00397
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00467	-0.00479	-0.00477
	(!A1 * A3 * B1 * C1 * !Y)	0.00405	0.00406	0.00403
	(!A1 * A3 * B1 * C1 * !Y)	-0.00467	-0.00480	-0.00477
	(!A1 * A3 * B1 * !C1 * Y)	0.00397	0.00399	0.00397
	(!A1 * A3 * B1 * !C1 * Y)	-0.00476	-0.00488	-0.00484
	(!A1 * A3 * !B1 * Y)	0.00396	0.00399	0.00397
	(!A1 * A3 * !B1 * Y)	-0.00476	-0.00488	-0.00484
	(!A1 * !A3 * B1 * !C1 * Y)	0.00361	0.00362	0.00362
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00497	-0.00497	-0.00498
	(!A1 * !A3 * !B1 * C1 * Y)	0.00368	0.00368	0.00368
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00497	-0.00497	-0.00498
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00368	0.00367	0.00368
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00497	-0.00496	-0.00498

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)**	-0.00102	-0.00102	-0.00102
	(A1 * A3 * B1 * C1 * !Y)	0.00087	0.00087	0.00087
	(A1 * A3 * B1 * !C1 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * A3 * B1 * !C1 * Y)	0.00098	0.00098	0.00098
	(A1 * A3 * !B1 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * A3 * !B1 * Y)	0.00098	0.00098	0.00098
	(A1 * !A3 * B1 * C1 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * !A3 * B1 * C1 * !Y)	0.00084	0.00084	0.00084
	(A1 * !A3 * B1 * !C1 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * !A3 * B1 * !C1 * Y)	0.00123	0.00124	0.00123
	(A1 * !A3 * !B1 * C1 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * !A3 * !B1 * C1 * Y)	0.00123	0.00124	0.00123
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * !A3 * !B1 * !C1 * Y)	0.00124	0.00124	0.00123
	(!A1 * A3 * B1 * C1 * !Y)	-0.00103	-0.00103	-0.00102
	(!A1 * A3 * B1 * C1 * !Y)	0.00119	0.00119	0.00118
	(!A1 * A3 * B1 * !C1 * Y)	-0.00097	-0.00098	-0.00098
	(!A1 * A3 * B1 * !C1 * Y)	0.00122	0.00124	0.00123
	(!A1 * A3 * !B1 * Y)	-0.00097	-0.00098	-0.00098
	(!A1 * A3 * !B1 * Y)	0.00123	0.00124	0.00123
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00085	-0.00091	-0.00090
	(!A1 * !A3 * B1 * !C1 * Y)	0.00126	0.00126	0.00126
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00089	-0.00092	-0.00092
	(!A1 * !A3 * !B1 * C1 * Y)	0.00127	0.00127	0.00126
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00089	-0.00091	-0.00092
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00127	0.00127	0.00126

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00205	-0.00204	-0.00204
	(A1 * A3 * B1 * C1 * !Y)	0.00181	0.00180	0.00180
	(A1 * A3 * B1 * !C1 * Y)	-0.00202	-0.00202	-0.00202
	(A1 * A3 * B1 * !C1 * Y)	0.00196	0.00196	0.00196
	(A1 * A3 * !B1 * Y)	-0.00202	-0.00202	-0.00202
	(A1 * A3 * !B1 * Y)	0.00196	0.00196	0.00196
	(A1 * !A3 * B1 * C1 * !Y)	-0.00204	-0.00203	-0.00203
	(A1 * !A3 * B1 * C1 * !Y)	0.00174	0.00174	0.00175
	(A1 * !A3 * B1 * !C1 * Y)	-0.00201	-0.00203	-0.00202
	(A1 * !A3 * B1 * !C1 * Y)	0.00241	0.00244	0.00243
	(A1 * !A3 * !B1 * C1 * Y)	-0.00202	-0.00203	-0.00202
	(A1 * !A3 * !B1 * C1 * Y)	0.00242	0.00244	0.00243
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00202	-0.00203	-0.00202
	(A1 * !A3 * !B1 * !C1 * Y)	0.00243	0.00244	0.00243
	(!A1 * A3 * B1 * C1 * !Y)	-0.00205	-0.00205	-0.00204
	(!A1 * A3 * B1 * C1 * !Y)	0.00246	0.00247	0.00245
	(!A1 * A3 * B1 * !C1 * Y)	-0.00202	-0.00203	-0.00202
	(!A1 * A3 * B1 * !C1 * Y)	0.00246	0.00249	0.00247
	(!A1 * A3 * !B1 * Y)	-0.00202	-0.00203	-0.00202
	(!A1 * A3 * !B1 * Y)	0.00246	0.00249	0.00247
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00175	-0.00186	-0.00185
	(!A1 * !A3 * B1 * !C1 * Y)	0.00254	0.00254	0.00253
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00180	-0.00189	-0.00188
	(!A1 * !A3 * !B1 * C1 * Y)	0.00252	0.00254	0.00253
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00180	-0.00188	-0.00188
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00252	0.00254	0.00253

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00405	-0.00403	-0.00403
	(A1 * A3 * B1 * C1 * !Y)	0.00349	0.00347	0.00346
	(A1 * A3 * B1 * !C1 * Y)	-0.00396	-0.00397	-0.00396
	(A1 * A3 * B1 * !C1 * Y)	0.00382	0.00384	0.00383
	(A1 * A3 * !B1 * Y)	-0.00396	-0.00397	-0.00396
	(A1 * A3 * !B1 * Y)	0.00383	0.00384	0.00383
	(A1 * !A3 * B1 * C1 * !Y)	-0.00403	-0.00402	-0.00402
	(A1 * !A3 * B1 * C1 * !Y)	0.00336	0.00335	0.00337
	(A1 * !A3 * B1 * !C1 * Y)	-0.00398	-0.00398	-0.00396
	(A1 * !A3 * B1 * !C1 * Y)	0.00478	0.00479	0.00476
	(A1 * !A3 * !B1 * C1 * Y)	-0.00396	-0.00395	-0.00396
	(A1 * !A3 * !B1 * C1 * Y)	0.00475	0.00479	0.00476
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00396	-0.00398	-0.00396
	(A1 * !A3 * !B1 * !C1 * Y)	0.00475	0.00479	0.00477
	(!A1 * A3 * B1 * C1 * !Y)	-0.00403	-0.00405	-0.00403
	(!A1 * A3 * B1 * C1 * !Y)	0.00476	0.00480	0.00477
	(!A1 * A3 * B1 * !C1 * Y)	-0.00396	-0.00398	-0.00396
	(!A1 * A3 * B1 * !C1 * Y)	0.00483	0.00488	0.00484
	(!A1 * A3 * !B1 * Y)	-0.00395	-0.00398	-0.00396
	(!A1 * A3 * !B1 * Y)	0.00483	0.00488	0.00484
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00345	-0.00362	-0.00362
	(!A1 * !A3 * B1 * !C1 * Y)	0.00500	0.00499	0.00498
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00354	-0.00368	-0.00368
	(!A1 * !A3 * !B1 * C1 * Y)	0.00497	0.00501	0.00498
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00354	-0.00367	-0.00368
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00497	0.00501	0.00498

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)**	0.00112	0.00111	0.00111
	(A2 * B1 * C1 * !Y)	-0.00073	-0.00073	-0.00073
	(A2 * B1 * !C1 * Y)	0.00100	0.00101	0.00100
	(A2 * B1 * !C1 * Y)	-0.00115	-0.00118	-0.00117
	(A2 * !B1 * C1 * Y)	0.00100	0.00101	0.00100
	(A2 * !B1 * C1 * Y)	-0.00115	-0.00118	-0.00117
	(A2 * !B1 * !C1 * Y)	0.00100	0.00100	0.00100
	(A2 * !B1 * !C1 * Y)	-0.00115	-0.00118	-0.00117
	(A1 * !A2 * B1 * C1 * !Y)	0.00111	0.00111	0.00111
	(A1 * !A2 * B1 * C1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * B1 * !C1 * Y)	0.00100	0.00100	0.00100
	(A1 * !A2 * B1 * !C1 * Y)	-0.00107	-0.00109	-0.00110
	(A1 * !A2 * !B1 * C1 * Y)	0.00100	0.00100	0.00100
	(A1 * !A2 * !B1 * C1 * Y)	-0.00107	-0.00109	-0.00110
	(A1 * !A2 * !B1 * !C1 * Y)	0.00100	0.00100	0.00100
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00107	-0.00110	-0.00110
	(!A1 * !A2 * B1 * !C1 * Y)	0.00092	0.00093	0.00092
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00120	-0.00120	-0.00120
	(!A1 * !A2 * !B1 * C1 * Y)	0.00094	0.00094	0.00094
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00120	-0.00120	-0.00120
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00094	0.00094	0.00094
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00120	-0.00120	-0.00120

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00228	0.00229	0.00229
	(A2 * B1 * C1 * !Y)	-0.00149	-0.00149	-0.00149
	(A2 * B1 * !C1 * Y)	0.00200	0.00201	0.00200
	(A2 * B1 * !C1 * Y)	-0.00240	-0.00246	-0.00244
	(A2 * !B1 * C1 * Y)	0.00200	0.00201	0.00200
	(A2 * !B1 * C1 * Y)	-0.00240	-0.00246	-0.00244
	(A2 * !B1 * !C1 * Y)	0.00200	0.00201	0.00200
	(A2 * !B1 * !C1 * Y)	-0.00241	-0.00246	-0.00244
	(A1 * !A2 * B1 * C1 * !Y)	0.00228	0.00229	0.00229
	(A1 * !A2 * B1 * C1 * !Y)	-0.00148	-0.00149	-0.00149
	(A1 * !A2 * B1 * !C1 * Y)	0.00199	0.00200	0.00200
	(A1 * !A2 * B1 * !C1 * Y)	-0.00225	-0.00231	-0.00230
	(A1 * !A2 * !B1 * C1 * Y)	0.00199	0.00200	0.00200
	(A1 * !A2 * !B1 * C1 * Y)	-0.00225	-0.00231	-0.00230
	(A1 * !A2 * !B1 * !C1 * Y)	0.00199	0.00200	0.00200
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00225	-0.00232	-0.00231
	(!A1 * !A2 * B1 * !C1 * Y)	0.00180	0.00181	0.00181
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00249	-0.00250	-0.00250
	(!A1 * !A2 * !B1 * C1 * Y)	0.00183	0.00183	0.00185
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00249	-0.00249	-0.00250
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00183	0.00186	0.00185
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00249	-0.00251	-0.00250

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00465	0.00467	0.00465
	(A2 * B1 * C1 * !Y)	-0.00297	-0.00298	-0.00297
	(A2 * B1 * !C1 * Y)	0.00383	0.00384	0.00383
	(A2 * B1 * !C1 * Y)	-0.00503	-0.00511	-0.00510
	(A2 * !B1 * C1 * Y)	0.00383	0.00384	0.00383
	(A2 * !B1 * C1 * Y)	-0.00503	-0.00511	-0.00510
	(A2 * !B1 * !C1 * Y)	0.00382	0.00385	0.00383
	(A2 * !B1 * !C1 * Y)	-0.00503	-0.00515	-0.00511
	(A1 * !A2 * B1 * C1 * !Y)	0.00464	0.00467	0.00465
	(A1 * !A2 * B1 * C1 * !Y)	-0.00295	-0.00298	-0.00296
	(A1 * !A2 * B1 * !C1 * Y)	0.00385	0.00384	0.00383
	(A1 * !A2 * B1 * !C1 * Y)	-0.00470	-0.00476	-0.00474
	(A1 * !A2 * !B1 * C1 * Y)	0.00385	0.00384	0.00383
	(A1 * !A2 * !B1 * C1 * Y)	-0.00470	-0.00476	-0.00474
	(A1 * !A2 * !B1 * !C1 * Y)	0.00383	0.00385	0.00383
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00469	-0.00479	-0.00479
	(!A1 * !A2 * B1 * !C1 * Y)	0.00351	0.00349	0.00352
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00524	-0.00523	-0.00525
	(!A1 * !A2 * !B1 * C1 * Y)	0.00359	0.00356	0.00357
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00526	-0.00523	-0.00525
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00357	0.00361	0.00357
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00525	-0.00527	-0.00525

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)**	-0.00107	-0.00108	-0.00111
	(A2 * B1 * C1 * !Y)	0.00076	0.00076	0.00073
	(A2 * B1 * !C1 * Y)	-0.00100	-0.00100	-0.00100
	(A2 * B1 * !C1 * Y)	0.00117	0.00118	0.00117
	(A2 * !B1 * C1 * Y)	-0.00100	-0.00100	-0.00100
	(A2 * !B1 * C1 * Y)	0.00117	0.00118	0.00117
	(A2 * !B1 * !C1 * Y)	-0.00100	-0.00100	-0.00100
	(A2 * !B1 * !C1 * Y)	0.00118	0.00118	0.00117
	(A1 * !A2 * B1 * C1 * !Y)	-0.00101	-0.00101	-0.00110
	(A1 * !A2 * B1 * C1 * !Y)	0.00080	0.00080	0.00074
	(A1 * !A2 * B1 * !C1 * Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * B1 * !C1 * Y)	0.00110	0.00109	0.00110
	(A1 * !A2 * !B1 * C1 * Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * !B1 * C1 * Y)	0.00110	0.00109	0.00110
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * !B1 * !C1 * Y)	0.00110	0.00110	0.00110
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00087	-0.00092	-0.00092
	(!A1 * !A2 * B1 * !C1 * Y)	0.00120	0.00120	0.00120
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00091	-0.00094	-0.00094
	(!A1 * !A2 * !B1 * C1 * Y)	0.00120	0.00120	0.00120
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00091	-0.00094	-0.00094
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00120	0.00120	0.00120

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00221	-0.00222	-0.00229
	(A2 * B1 * C1 * !Y)	0.00156	0.00156	0.00151
	(A2 * B1 * !C1 * Y)	-0.00199	-0.00201	-0.00199
	(A2 * B1 * !C1 * Y)	0.00243	0.00246	0.00244
	(A2 * !B1 * C1 * Y)	-0.00199	-0.00201	-0.00199
	(A2 * !B1 * C1 * Y)	0.00244	0.00246	0.00244
	(A2 * !B1 * !C1 * Y)	-0.00199	-0.00200	-0.00199
	(A2 * !B1 * !C1 * Y)	0.00243	0.00246	0.00244
	(A1 * !A2 * B1 * C1 * !Y)	-0.00203	-0.00204	-0.00225
	(A1 * !A2 * B1 * C1 * !Y)	0.00168	0.00167	0.00152
	(A1 * !A2 * B1 * !C1 * Y)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * B1 * !C1 * Y)	0.00229	0.00231	0.00230
	(A1 * !A2 * !B1 * C1 * Y)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * !B1 * C1 * Y)	0.00229	0.00231	0.00230
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00199	-0.00200	-0.00199
	(A1 * !A2 * !B1 * !C1 * Y)	0.00230	0.00232	0.00231
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00173	-0.00181	-0.00181
	(!A1 * !A2 * B1 * !C1 * Y)	0.00251	0.00251	0.00251
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00178	-0.00183	-0.00185
	(!A1 * !A2 * !B1 * C1 * Y)	0.00250	0.00251	0.00251
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00178	-0.00186	-0.00185
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00250	0.00251	0.00251

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00448	-0.00450	-0.00465
	(A2 * B1 * C1 * !Y)	0.00314	0.00313	0.00301
	(A2 * B1 * !C1 * Y)	-0.00383	-0.00383	-0.00382
	(A2 * B1 * !C1 * Y)	0.00511	0.00511	0.00510
	(A2 * !B1 * C1 * Y)	-0.00381	-0.00383	-0.00382
	(A2 * !B1 * C1 * Y)	0.00508	0.00511	0.00510
	(A2 * !B1 * !C1 * Y)	-0.00381	-0.00384	-0.00382
	(A2 * !B1 * !C1 * Y)	0.00510	0.00515	0.00511
	(A1 * !A2 * B1 * C1 * !Y)	-0.00417	-0.00418	-0.00459
	(A1 * !A2 * B1 * C1 * !Y)	0.00331	0.00330	0.00301
	(A1 * !A2 * B1 * !C1 * Y)	-0.00381	-0.00383	-0.00382
	(A1 * !A2 * B1 * !C1 * Y)	0.00472	0.00476	0.00474
	(A1 * !A2 * !B1 * C1 * Y)	-0.00381	-0.00383	-0.00382
	(A1 * !A2 * !B1 * C1 * Y)	0.00473	0.00476	0.00474
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00381	-0.00383	-0.00382
	(A1 * !A2 * !B1 * !C1 * Y)	0.00477	0.00479	0.00479
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00333	-0.00349	-0.00352
	(!A1 * !A2 * B1 * !C1 * Y)	0.00526	0.00528	0.00525
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00346	-0.00356	-0.00357
	(!A1 * !A2 * !B1 * C1 * Y)	0.00526	0.00528	0.00525
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00346	-0.00359	-0.00357
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00526	0.00527	0.00525

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00092	0.00093	0.00093
	(A3 * !C1 * Y)	-0.00128	-0.00129	-0.00128
	(A2 * !A3 * !C1 * Y)	0.00093	0.00092	0.00093
	(A2 * !A3 * !C1 * Y)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * !A3 * !C1 * Y)	0.00093	0.00093	0.00093
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00129	-0.00129	-0.00128
	(!A1 * !A2 * !A3 * C1 * Y)	0.00049	0.00049	0.00049
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00129	-0.00129	-0.00128
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00056	0.00057	0.00057
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00128	-0.00129	-0.00129
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00193	0.00194	0.00193
	(A3 * !C1 * Y)	-0.00251	-0.00254	-0.00252
	(A2 * !A3 * !C1 * Y)	0.00193	0.00194	0.00193
	(A2 * !A3 * !C1 * Y)	-0.00253	-0.00254	-0.00252
	(A1 * !A2 * !A3 * !C1 * Y)	0.00192	0.00194	0.00193
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00252	-0.00253	-0.00252
	(!A1 * !A2 * !A3 * C1 * Y)	0.00102	0.00103	0.00103
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00252	-0.00254	-0.00251
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00254	-0.00255	-0.00254
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00358	0.00362	0.00358
	(A3 * !C1 * Y)	-0.00291	-0.00293	-0.00291
	(A2 * !A3 * !C1 * Y)	0.00358	0.00358	0.00358
	(A2 * !A3 * !C1 * Y)	-0.00291	-0.00291	-0.00291
	(A1 * !A2 * !A3 * !C1 * Y)	0.00357	0.00360	0.00358
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00291	-0.00292	-0.00291
	(!A1 * !A2 * !A3 * C1 * Y)	0.00184	0.00186	0.00186
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00291	-0.00294	-0.00291
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00215	0.00217	0.00215
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00296	-0.00298	-0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00091	-0.00093	-0.00093
	(A3 * !C1 * Y)	0.00129	0.00130	0.00129
	(A2 * !A3 * !C1 * Y)	-0.00090	-0.00092	-0.00093
	(A2 * !A3 * !C1 * Y)	0.00128	0.00130	0.00129
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00090	-0.00093	-0.00093
	(A1 * !A2 * !A3 * !C1 * Y)	0.00129	0.00130	0.00129
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00046	-0.00046	-0.00047
	(!A1 * !A2 * !A3 * C1 * Y)	0.00131	0.00131	0.00129
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00056	-0.00057	-0.00057
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00129	0.00129	0.00130
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00188	-0.00194	-0.00193
	(A3 * !C1 * Y)	0.00251	0.00255	0.00253
	(A2 * !A3 * !C1 * Y)	-0.00189	-0.00194	-0.00193
	(A2 * !A3 * !C1 * Y)	0.00254	0.00255	0.00253
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00188	-0.00194	-0.00193
	(A1 * !A2 * !A3 * !C1 * Y)	0.00253	0.00255	0.00253
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00096	-0.00097	-0.00099
	(!A1 * !A2 * !A3 * C1 * Y)	0.00259	0.00259	0.00255
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00118	-0.00119	-0.00118
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00256	0.00256	0.00255

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00350	-0.00362	-0.00358
	(A3 * !C1 * Y)	0.00293	0.00294	0.00291
	(A2 * !A3 * !C1 * Y)	-0.00348	-0.00358	-0.00358
	(A2 * !A3 * !C1 * Y)	0.00293	0.00294	0.00291
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00346	-0.00360	-0.00358
	(A1 * !A2 * !A3 * !C1 * Y)	0.00293	0.00294	0.00291
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00174	-0.00174	-0.00179
	(!A1 * !A2 * !A3 * C1 * Y)	0.00305	0.00305	0.00296
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00215	-0.00217	-0.00215
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00296	0.00298	0.00298

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00043	0.00043	0.00042
	(A3 * !B1 * Y)	-0.00151	-0.00152	-0.00153
	(A2 * !A3 * !B1 * Y)	0.00043	0.00043	0.00042
	(A2 * !A3 * !B1 * Y)	-0.00150	-0.00151	-0.00153
	(!A2 * !A3 * !B1 * Y)	0.00043	0.00043	0.00042
	(!A2 * !A3 * !B1 * Y)	-0.00150	-0.00151	-0.00153
	(!A1 * !A2 * !A3 * B1 * Y)	0.00046	0.00046	0.00042
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00144	-0.00145	-0.00152
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00084	0.00084	0.00081
	(A3 * !B1 * Y)	-0.00296	-0.00297	-0.00300
	(A2 * !A3 * !B1 * Y)	0.00084	0.00084	0.00081
	(A2 * !A3 * !B1 * Y)	-0.00295	-0.00297	-0.00300
	(!A2 * !A3 * !B1 * Y)	0.00084	0.00084	0.00081
	(!A2 * !A3 * !B1 * Y)	-0.00294	-0.00296	-0.00300
	(!A1 * !A2 * !A3 * B1 * Y)	0.00088	0.00088	0.00078
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00279	-0.00282	-0.00298
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00158	0.00158	0.00151
	(A3 * !B1 * Y)	-0.00328	-0.00330	-0.00338
	(A2 * !A3 * !B1 * Y)	0.00157	0.00157	0.00151
	(A2 * !A3 * !B1 * Y)	-0.00326	-0.00329	-0.00338
	(!A2 * !A3 * !B1 * Y)	0.00157	0.00157	0.00151
	(!A2 * !A3 * !B1 * Y)	-0.00326	-0.00329	-0.00338
	(!A1 * !A2 * !A3 * B1 * Y)	0.00164	0.00165	0.00147
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00297	-0.00302	-0.00334

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00041	-0.00041	-0.00041
	(A3 * !B1 * Y)	0.00152	0.00154	0.00153
	(A2 * !A3 * !B1 * Y)	-0.00041	-0.00041	-0.00041
	(A2 * !A3 * !B1 * Y)	0.00153	0.00153	0.00153
	(!A2 * !A3 * !B1 * Y)	-0.00041	-0.00041	-0.00041
	(!A2 * !A3 * !B1 * Y)	0.00153	0.00153	0.00153
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00041	-0.00041	-0.00040
	(!A1 * !A2 * !A3 * B1 * Y)	0.00153	0.00154	0.00153
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00079	-0.00079	-0.00079
	(A3 * !B1 * Y)	0.00300	0.00302	0.00301
	(A2 * !A3 * !B1 * Y)	-0.00079	-0.00079	-0.00079
	(A2 * !A3 * !B1 * Y)	0.00301	0.00302	0.00301
	(!A2 * !A3 * !B1 * Y)	-0.00079	-0.00079	-0.00079
	(!A2 * !A3 * !B1 * Y)	0.00300	0.00301	0.00301
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00077	-0.00077	-0.00076
	(!A1 * !A2 * !A3 * B1 * Y)	0.00300	0.00302	0.00301
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00147	-0.00148	-0.00147
	(A3 * !B1 * Y)	0.00337	0.00340	0.00338
	(A2 * !A3 * !B1 * Y)	-0.00149	-0.00148	-0.00147
	(A2 * !A3 * !B1 * Y)	0.00340	0.00340	0.00338
	(!A2 * !A3 * !B1 * Y)	-0.00148	-0.00147	-0.00147
	(!A2 * !A3 * !B1 * Y)	0.00338	0.00338	0.00338
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00144	-0.00144	-0.00143
	(!A1 * !A2 * !A3 * B1 * Y)	0.00337	0.00338	0.00338

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311a_1	14.38560
sky130_fd_sc_hs__o311a_2	14.38560
sky130_fd_sc_hs__o311a_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__o311a_1	0.00237	0.00283	0.00245	0.00240	0.00249	0.36166
sky130_fd_sc_hs__o311a_2	0.00263	0.00264	0.00265	0.00263	0.00263	0.71795
sky130_fd_sc_hs__o311a_4	0.00431	0.00473	0.00442	0.00541	0.00470	1.41024

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.00020	0.00038
sky130_fd_sc_hs__o311a_2	0.00000	0.00028	0.00040
sky130_fd_sc_hs__o311a_4	0.00000	0.00056	0.00084

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)	0.24988	1.28253	9.09346
	A2->X (RR)	0.24662	1.28022	9.06224
	A3->X (RR)	0.23347	1.25432	8.96252
	B1->X (RR)	0.23602	1.28996	9.05130
	C1->X (RR)	0.22726	1.27698	8.85976
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.25202	1.12997	9.09602
	A2->X (RR)	0.24439	1.11794	9.04507
	A3->X (RR)	0.22109	1.09369	8.97403
	B1->X (RR)	0.24304	1.15955	9.13868
	C1->X (RR)	0.23212	1.15030	8.97428
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.26824	1.04538	9.21535
	A2->X (RR)	0.25546	1.02816	9.15809
	A3->X (RR)	0.24109	1.01324	9.09187
	B1->X (RR)	0.26075	1.07883	9.26536
	C1->X (RR)	0.24361	1.05718	9.05922

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	1.05345	1.91616	7.74128
	A2->X (FF)	1.03185	1.88152	7.87062
	A3->X (FF)	0.88853	1.67749	7.20808
	B1->X (FF)	0.23664	1.04809	6.36088
	C1->X (FF)	0.21606	1.01968	6.25957
sky130_fd_sc_hs__o311a_2	A1->X (FF)	1.16055	2.03878	8.11556
	A2->X (FF)	1.11581	1.98902	8.25243
	A3->X (FF)	1.03391	1.84366	7.76854
	B1->X (FF)	0.29809	1.09865	6.69971
	C1->X (FF)	0.27130	1.06752	6.60165
sky130_fd_sc_hs__o311a_4	A1->X (FF)	1.23559	2.07855	8.14142
	A2->X (FF)	1.20578	2.03491	8.26875
	A3->X (FF)	1.07134	1.82866	7.64686
	B1->X (FF)	0.27396	1.04110	6.62356
	C1->X (FF)	0.24416	1.00908	6.50880

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.00926	0.00921	0.00909
	A1	0.00421	0.00415	0.00406
	A2	0.00856	0.00854	0.00844
	A2	0.00378	0.00377	0.00368
	A3	0.00726	0.00727	0.00720
	A3	0.00304	0.00305	0.00300
	B1	0.00849	0.00844	0.00834
	B1	0.00423	0.00418	0.00410
	C1	0.00807	0.00798	0.00787
	C1	0.00421	0.00412	0.00403
sky130_fd_sc_hs__o311a_2	A1	0.01101	0.01103	0.01093
	A1	0.00555	0.00557	0.00552
	A2	0.01005	0.01023	0.01023
	A2	0.00505	0.00523	0.00528
	A3	0.00916	0.00931	0.00931
	A3	0.00462	0.00477	0.00479
	B1	0.01021	0.01023	0.01014
	B1	0.00569	0.00572	0.00567
	C1	0.00969	0.00969	0.00958
	C1	0.00568	0.00569	0.00561

sky130_fd_sc_hs__o311a_4	**A1**	0.02065	0.02099	0.02115
	A1	0.01131	0.01164	0.01195
	A2	0.01927	0.01964	0.01974
	A2	0.01041	0.01079	0.01103
	A3	0.01682	0.01724	0.01726
	A3	0.00891	0.00939	0.00944
	B1	0.01971	0.01997	0.02006
	B1	0.01129	0.01154	0.01175
	C1	0.01826	0.01842	0.01852
	C1	0.01129	0.01148	0.01160

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00326	0.00325	0.00323
	A1	0.00823	0.00823	0.00815
	A2	0.00328	0.00325	0.00329
	A2	0.00795	0.00792	0.00784
	A3	0.00328	0.00328	0.00425
	A3	0.00737	0.00737	0.00730
	B1	0.00242	0.00233	0.00233
	B1	0.00670	0.00661	0.00656
	C1	0.00214	0.00198	0.00210
	C1	0.00605	0.00592	0.00587

sky130_fd_sc_hs__o311a_2	**A1**	0.00465	0.00485	0.00488
	A1	0.01001	0.01020	0.01021
	A2	0.00467	0.00489	0.00500
	A2	0.00954	0.00974	0.00976
	A3	0.00468	0.00483	0.00490
	A3	0.00905	0.00922	0.00921
	B1	0.00426	0.00432	0.00511
	B1	0.00878	0.00883	0.00882
	C1	0.00389	0.00367	0.00391
	C1	0.00797	0.00797	0.00797
sky130_fd_sc_hs__o311a_4	**A1**	0.00960	0.01013	0.01040
	A1	0.01876	0.01931	0.01950
	A2	0.00947	0.00996	0.01056
	A2	0.01808	0.01858	0.01876
	A3	0.00961	0.00998	0.01190
	A3	0.01721	0.01760	0.01773
	B1	0.00828	0.00828	0.01115
	B1	0.01673	0.01684	0.01684
	C1	0.00760	0.00770	0.00788
	C1	0.01469	0.01485	0.01490

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)**	0.00090	0.00090	0.00090
	(A2 * B1 * !C1 * !X)	-0.00119	-0.00122	-0.00121
	(A2 * A3 * B1 * C1 * X)	0.00105	0.00106	0.00105
	(A2 * A3 * B1 * C1 * X)	-0.00103	-0.00106	-0.00105
	(A2 * !B1 * !X)	0.00090	0.00090	0.00090
	(A2 * !B1 * !X)	-0.00119	-0.00122	-0.00121
	(A2 * !A3 * B1 * C1 * X)	0.00105	0.00106	0.00105
	(A2 * !A3 * B1 * C1 * X)	-0.00103	-0.00106	-0.00105
	(!A2 * A3 * B1 * C1 * X)	0.00105	0.00106	0.00105
	(!A2 * A3 * B1 * C1 * X)	-0.00098	-0.00101	-0.00101
	(!A2 * A3 * B1 * !C1 * !X)	0.00090	0.00091	0.00090
	(!A2 * A3 * B1 * !C1 * !X)	-0.00114	-0.00116	-0.00116
	(!A2 * A3 * !B1 * !X)	0.00090	0.00091	0.00090
	(!A2 * A3 * !B1 * !X)	-0.00114	-0.00116	-0.00116
	(!A2 * !A3 * B1 * !C1 * !X)	0.00085	0.00085	0.00085
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00122	-0.00123	-0.00123
	(!A2 * !A3 * !B1 * C1 * !X)	0.00086	0.00087	0.00086
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00122	-0.00123	-0.00123
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00086	0.00087	0.00086
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00122	-0.00123	-0.00123

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00096	0.00097	0.00096
	(A2 * B1 * !C1 * !X)	-0.00131	-0.00134	-0.00133
	(A2 * A3 * B1 * C1 * X)	0.00109	0.00110	0.00109
	(A2 * A3 * B1 * C1 * X)	-0.00118	-0.00121	-0.00120
	(A2 * !B1 * !X)	0.00096	0.00097	0.00096
	(A2 * !B1 * !X)	-0.00131	-0.00134	-0.00133
	(A2 * !A3 * B1 * C1 * X)	0.00109	0.00110	0.00109
	(A2 * !A3 * B1 * C1 * X)	-0.00118	-0.00121	-0.00120
	(!A2 * A3 * B1 * C1 * X)	0.00109	0.00109	0.00109
	(!A2 * A3 * B1 * C1 * X)	-0.00110	-0.00113	-0.00114
	(!A2 * A3 * B1 * !C1 * !X)	0.00096	0.00096	0.00096
	(!A2 * A3 * B1 * !C1 * !X)	-0.00123	-0.00126	-0.00127
	(!A2 * A3 * !B1 * !X)	0.00096	0.00096	0.00096
	(!A2 * A3 * !B1 * !X)	-0.00123	-0.00126	-0.00127
	(!A2 * !A3 * B1 * !C1 * !X)	0.00089	0.00089	0.00089
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00136	-0.00136	-0.00135
	(!A2 * !A3 * !B1 * C1 * !X)	0.00090	0.00091	0.00090
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00136	-0.00136	-0.00136
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00136	-0.00136	-0.00136

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00163	0.00164	0.00162
	(A2 * B1 * !C1 * !X)	-0.00217	-0.00223	-0.00221
	(A2 * A3 * B1 * C1 * X)	0.00163	0.00164	0.00162
	(A2 * A3 * B1 * C1 * X)	-0.00217	-0.00223	-0.00221
	(A2 * !B1 * !X)	0.00163	0.00164	0.00162
	(A2 * !B1 * !X)	-0.00217	-0.00223	-0.00221
	(A2 * !A3 * B1 * C1 * X)	0.00163	0.00164	0.00162
	(A2 * !A3 * B1 * C1 * X)	-0.00217	-0.00223	-0.00220
	(!A2 * A3 * B1 * C1 * X)	0.00162	0.00163	0.00162
	(!A2 * A3 * B1 * C1 * X)	-0.00204	-0.00210	-0.00210
	(!A2 * A3 * B1 * !C1 * !X)	0.00162	0.00163	0.00162
	(!A2 * A3 * B1 * !C1 * !X)	-0.00204	-0.00210	-0.00210
	(!A2 * A3 * !B1 * !X)	0.00162	0.00163	0.00162
	(!A2 * A3 * !B1 * !X)	-0.00204	-0.00210	-0.00210
	(!A2 * !A3 * B1 * !C1 * !X)	0.00149	0.00152	0.00151
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00225	-0.00227	-0.00226
	(!A2 * !A3 * !B1 * C1 * !X)	0.00152	0.00154	0.00153
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00225	-0.00227	-0.00226
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00152	0.00154	0.00153
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00225	-0.00227	-0.00226

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)**	-0.00090	-0.00090	-0.00090
	(A2 * B1 * !C1 * !X)	0.00121	0.00122	0.00121
	(A2 * A3 * B1 * C1 * X)	-0.00105	-0.00106	-0.00105
	(A2 * A3 * B1 * C1 * X)	0.00106	0.00106	0.00105
	(A2 * !B1 * !X)	-0.00090	-0.00090	-0.00090
	(A2 * !B1 * !X)	0.00122	0.00122	0.00121
	(A2 * !A3 * B1 * C1 * X)	-0.00105	-0.00106	-0.00105
	(A2 * !A3 * B1 * C1 * X)	0.00106	0.00106	0.00105
	(!A2 * A3 * B1 * C1 * X)	-0.00105	-0.00105	-0.00105
	(!A2 * A3 * B1 * C1 * X)	0.00101	0.00101	0.00101
	(!A2 * A3 * B1 * !C1 * !X)	-0.00090	-0.00089	-0.00090
	(!A2 * A3 * B1 * !C1 * !X)	0.00117	0.00116	0.00116
	(!A2 * A3 * !B1 * !X)	-0.00090	-0.00089	-0.00090
	(!A2 * A3 * !B1 * !X)	0.00117	0.00116	0.00116
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00081	-0.00085	-0.00085
	(!A2 * !A3 * B1 * !C1 * !X)	0.00123	0.00123	0.00123
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00085	-0.00087	-0.00086
	(!A2 * !A3 * !B1 * C1 * !X)	0.00123	0.00123	0.00123
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00084	-0.00087	-0.00086
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00123	0.00123	0.00123

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00096	-0.00096	-0.00096
	(A2 * B1 * !C1 * !X)	0.00134	0.00134	0.00133
	(A2 * A3 * B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(A2 * A3 * B1 * C1 * X)	0.00120	0.00121	0.00120
	(A2 * !B1 * !X)	-0.00096	-0.00096	-0.00096
	(A2 * !B1 * !X)	0.00134	0.00134	0.00133
	(A2 * !A3 * B1 * C1 * X)	-0.00109	-0.00110	-0.00109
	(A2 * !A3 * B1 * C1 * X)	0.00121	0.00121	0.00120
	(!A2 * A3 * B1 * C1 * X)	-0.00109	-0.00109	-0.00109
	(!A2 * A3 * B1 * C1 * X)	0.00115	0.00113	0.00114
	(!A2 * A3 * B1 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(!A2 * A3 * B1 * !C1 * !X)	0.00128	0.00126	0.00127
	(!A2 * A3 * !B1 * !X)	-0.00096	-0.00096	-0.00096
	(!A2 * A3 * !B1 * !X)	0.00127	0.00126	0.00127
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00084	-0.00089	-0.00089
	(!A2 * !A3 * B1 * !C1 * !X)	0.00136	0.00136	0.00136
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00088	-0.00091	-0.00090
	(!A2 * !A3 * !B1 * C1 * !X)	0.00137	0.00136	0.00136
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00087	-0.00090	-0.00090
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00137	0.00136	0.00136

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00163	-0.00163	-0.00162
	(A2 * B1 * !C1 * !X)	0.00222	0.00223	0.00221
	(A2 * A3 * B1 * C1 * X)	-0.00163	-0.00163	-0.00162
	(A2 * A3 * B1 * C1 * X)	0.00222	0.00223	0.00221
	(A2 * !B1 * !X)	-0.00161	-0.00163	-0.00162
	(A2 * !B1 * !X)	0.00219	0.00223	0.00221
	(A2 * !A3 * B1 * C1 * X)	-0.00163	-0.00163	-0.00162
	(A2 * !A3 * B1 * C1 * X)	0.00222	0.00223	0.00220
	(!A2 * A3 * B1 * C1 * X)	-0.00162	-0.00162	-0.00162
	(!A2 * A3 * B1 * C1 * X)	0.00211	0.00210	0.00210
	(!A2 * A3 * B1 * !C1 * !X)	-0.00162	-0.00162	-0.00162
	(!A2 * A3 * B1 * !C1 * !X)	0.00211	0.00210	0.00210
	(!A2 * A3 * !B1 * !X)	-0.00161	-0.00162	-0.00162
	(!A2 * A3 * !B1 * !X)	0.00209	0.00210	0.00210
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00143	-0.00152	-0.00151
	(!A2 * !A3 * B1 * !C1 * !X)	0.00226	0.00227	0.00227
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00149	-0.00154	-0.00153
	(!A2 * !A3 * !B1 * C1 * !X)	0.00228	0.00227	0.00227
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00149	-0.00154	-0.00153
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00228	0.00227	0.00227

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)**	0.00109	0.00109	0.00109
	(A1 * A3 * B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A3 * B1 * !C1 * !X)	0.00089	0.00090	0.00090
	(A1 * A3 * B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A1 * A3 * !B1 * !X)	0.00091	0.00090	0.00090
	(A1 * A3 * !B1 * !X)	-0.00108	-0.00109	-0.00108
	(A1 * !A3 * B1 * C1 * X)	0.00110	0.00109	0.00108
	(A1 * !A3 * B1 * C1 * X)	-0.00079	-0.00078	-0.00078
	(A1 * !A3 * B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(A1 * !A3 * B1 * !C1 * !X)	-0.00127	-0.00129	-0.00128
	(A1 * !A3 * !B1 * C1 * !X)	0.00090	0.00090	0.00090
	(A1 * !A3 * !B1 * C1 * !X)	-0.00127	-0.00129	-0.00128
	(A1 * !A3 * !B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00127	-0.00129	-0.00128
	(!A1 * A3 * B1 * C1 * X)	0.00108	0.00108	0.00108
	(!A1 * A3 * B1 * C1 * X)	-0.00107	-0.00110	-0.00110
	(!A1 * A3 * B1 * !C1 * !X)	0.00090	0.00090	0.00090
	(!A1 * A3 * B1 * !C1 * !X)	-0.00126	-0.00129	-0.00128
	(!A1 * A3 * !B1 * !X)	0.00090	0.00090	0.00090
	(!A1 * A3 * !B1 * !X)	-0.00126	-0.00129	-0.00128
	(!A1 * !A3 * B1 * !C1 * !X)	0.00085	0.00085	0.00084
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00131	-0.00131	-0.00131
	(!A1 * !A3 * !B1 * C1 * !X)	0.00087	0.00086	0.00086
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00131	-0.00130	-0.00131
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00087	0.00087	0.00086
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00131	-0.00131	-0.00131

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00100	0.00101	0.00100
	(A1 * A3 * B1 * C1 * X)	-0.00091	-0.00090	-0.00090
	(A1 * A3 * B1 * !C1 * !X)	0.00097	0.00096	0.00096
	(A1 * A3 * B1 * !C1 * !X)	-0.00101	-0.00101	-0.00101
	(A1 * A3 * !B1 * !X)	0.00097	0.00096	0.00096
	(A1 * A3 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(A1 * !A3 * B1 * C1 * X)	0.00102	0.00101	0.00100
	(A1 * !A3 * B1 * C1 * X)	-0.00087	-0.00086	-0.00086
	(A1 * !A3 * B1 * !C1 * !X)	0.00096	0.00096	0.00096
	(A1 * !A3 * B1 * !C1 * !X)	-0.00123	-0.00126	-0.00125
	(A1 * !A3 * !B1 * C1 * !X)	0.00096	0.00096	0.00096
	(A1 * !A3 * !B1 * C1 * !X)	-0.00123	-0.00126	-0.00125
	(A1 * !A3 * !B1 * !C1 * !X)	0.00096	0.00097	0.00096
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00124	-0.00126	-0.00126
	(!A1 * A3 * B1 * C1 * X)	0.00100	0.00101	0.00100
	(!A1 * A3 * B1 * C1 * X)	-0.00119	-0.00123	-0.00122
	(!A1 * A3 * B1 * !C1 * !X)	0.00096	0.00097	0.00096
	(!A1 * A3 * B1 * !C1 * !X)	-0.00124	-0.00127	-0.00126
	(!A1 * A3 * !B1 * !X)	0.00096	0.00097	0.00096
	(!A1 * A3 * !B1 * !X)	-0.00124	-0.00127	-0.00126
	(!A1 * !A3 * B1 * !C1 * !X)	0.00089	0.00089	0.00088
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00130	-0.00129	-0.00129
	(!A1 * !A3 * !B1 * C1 * !X)	0.00091	0.00091	0.00090
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00130	-0.00130	-0.00129
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00091	0.00091	0.00090
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00129

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00188	0.00189	0.00188
	(A1 * A3 * B1 * C1 * X)	-0.00166	-0.00164	-0.00164
	(A1 * A3 * B1 * !C1 * !X)	0.00189	0.00188	0.00188
	(A1 * A3 * B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(A1 * A3 * !B1 * !X)	0.00189	0.00188	0.00188
	(A1 * A3 * !B1 * !X)	-0.00180	-0.00181	-0.00180
	(A1 * !A3 * B1 * C1 * X)	0.00188	0.00188	0.00188
	(A1 * !A3 * B1 * C1 * X)	-0.00156	-0.00157	-0.00157
	(A1 * !A3 * B1 * !C1 * !X)	0.00188	0.00187	0.00188
	(A1 * !A3 * B1 * !C1 * !X)	-0.00215	-0.00220	-0.00219
	(A1 * !A3 * !B1 * C1 * !X)	0.00188	0.00188	0.00188
	(A1 * !A3 * !B1 * C1 * !X)	-0.00215	-0.00220	-0.00219
	(A1 * !A3 * !B1 * !C1 * !X)	0.00188	0.00189	0.00188
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00215	-0.00221	-0.00219
	(!A1 * A3 * B1 * C1 * X)	0.00187	0.00188	0.00188
	(!A1 * A3 * B1 * C1 * X)	-0.00214	-0.00220	-0.00219
	(!A1 * A3 * B1 * !C1 * !X)	0.00190	0.00188	0.00188
	(!A1 * A3 * B1 * !C1 * !X)	-0.00217	-0.00220	-0.00219
	(!A1 * A3 * !B1 * !X)	0.00188	0.00188	0.00188
	(!A1 * A3 * !B1 * !X)	-0.00216	-0.00220	-0.00219
	(!A1 * !A3 * B1 * !C1 * !X)	0.00174	0.00174	0.00173
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00225	-0.00225	-0.00225
	(!A1 * !A3 * !B1 * C1 * !X)	0.00176	0.00177	0.00176
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00224	-0.00225	-0.00225
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00176	0.00176	0.00176
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00224	-0.00225	-0.00225

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)**	-0.00109	-0.00108	-0.00108
	(A1 * A3 * B1 * C1 * X)	0.00082	0.00082	0.00082
	(A1 * A3 * B1 * !C1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * A3 * B1 * !C1 * !X)	0.00108	0.00109	0.00108
	(A1 * A3 * !B1 * !X)	-0.00089	-0.00090	-0.00089
	(A1 * A3 * !B1 * !X)	0.00108	0.00109	0.00108
	(A1 * !A3 * B1 * C1 * X)	-0.00108	-0.00108	-0.00108
	(A1 * !A3 * B1 * C1 * X)	0.00079	0.00079	0.00079
	(A1 * !A3 * B1 * !C1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * B1 * !C1 * !X)	0.00129	0.00129	0.00128
	(A1 * !A3 * !B1 * C1 * !X)	-0.00090	-0.00090	-0.00090
	(A1 * !A3 * !B1 * C1 * !X)	0.00129	0.00129	0.00128
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00090	-0.00090	-0.00089
	(A1 * !A3 * !B1 * !C1 * !X)	0.00129	0.00129	0.00128
	(!A1 * A3 * B1 * C1 * X)	-0.00108	-0.00108	-0.00108
	(!A1 * A3 * B1 * C1 * X)	0.00110	0.00110	0.00110
	(!A1 * A3 * B1 * !C1 * !X)	-0.00090	-0.00090	-0.00089
	(!A1 * A3 * B1 * !C1 * !X)	0.00129	0.00129	0.00128
	(!A1 * A3 * !B1 * !X)	-0.00089	-0.00090	-0.00089
	(!A1 * A3 * !B1 * !X)	0.00128	0.00129	0.00128
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00080	-0.00085	-0.00084
	(!A1 * !A3 * B1 * !C1 * !X)	0.00131	0.00131	0.00131
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00084	-0.00086	-0.00086
	(!A1 * !A3 * !B1 * C1 * !X)	0.00131	0.00131	0.00131
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00084	-0.00086	-0.00086
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00131	0.00131	0.00131

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00100	-0.00100	-0.00100
	(A1 * A3 * B1 * C1 * X)	0.00091	0.00090	0.00090
	(A1 * A3 * B1 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * A3 * B1 * !C1 * !X)	0.00101	0.00101	0.00101
	(A1 * A3 * !B1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * A3 * !B1 * !X)	0.00101	0.00101	0.00101
	(A1 * !A3 * B1 * C1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * B1 * C1 * X)	0.00088	0.00088	0.00088
	(A1 * !A3 * B1 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * !A3 * B1 * !C1 * !X)	0.00126	0.00126	0.00125
	(A1 * !A3 * !B1 * C1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * !A3 * !B1 * C1 * !X)	0.00126	0.00126	0.00125
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00096	-0.00097	-0.00096
	(A1 * !A3 * !B1 * !C1 * !X)	0.00126	0.00126	0.00126
	(!A1 * A3 * B1 * C1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * A3 * B1 * C1 * X)	0.00123	0.00123	0.00122
	(!A1 * A3 * B1 * !C1 * !X)	-0.00096	-0.00097	-0.00096
	(!A1 * A3 * B1 * !C1 * !X)	0.00127	0.00127	0.00126
	(!A1 * A3 * !B1 * !X)	-0.00096	-0.00097	-0.00096
	(!A1 * A3 * !B1 * !X)	0.00125	0.00127	0.00126
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00084	-0.00089	-0.00088
	(!A1 * !A3 * B1 * !C1 * !X)	0.00130	0.00129	0.00129
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00087	-0.00091	-0.00090
	(!A1 * !A3 * !B1 * C1 * !X)	0.00130	0.00130	0.00130
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00087	-0.00091	-0.00090
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00130	0.00130	0.00130

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00188	-0.00188	-0.00188
	(A1 * A3 * B1 * C1 * X)	0.00166	0.00164	0.00164
	(A1 * A3 * B1 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(A1 * A3 * B1 * !C1 * !X)	0.00180	0.00181	0.00180
	(A1 * A3 * !B1 * !X)	-0.00187	-0.00188	-0.00187
	(A1 * A3 * !B1 * !X)	0.00180	0.00181	0.00180
	(A1 * !A3 * B1 * C1 * X)	-0.00188	-0.00187	-0.00187
	(A1 * !A3 * B1 * C1 * X)	0.00159	0.00158	0.00159
	(A1 * !A3 * B1 * !C1 * !X)	-0.00188	-0.00187	-0.00188
	(A1 * !A3 * B1 * !C1 * !X)	0.00220	0.00220	0.00219
	(A1 * !A3 * !B1 * C1 * !X)	-0.00188	-0.00188	-0.00188
	(A1 * !A3 * !B1 * C1 * !X)	0.00219	0.00220	0.00219
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00187	-0.00189	-0.00188
	(A1 * !A3 * !B1 * !C1 * !X)	0.00218	0.00221	0.00219
	(!A1 * A3 * B1 * C1 * X)	-0.00187	-0.00188	-0.00188
	(!A1 * A3 * B1 * C1 * X)	0.00220	0.00220	0.00219
	(!A1 * A3 * B1 * !C1 * !X)	-0.00186	-0.00188	-0.00188
	(!A1 * A3 * B1 * !C1 * !X)	0.00217	0.00221	0.00219
	(!A1 * A3 * !B1 * !X)	-0.00187	-0.00188	-0.00188
	(!A1 * A3 * !B1 * !X)	0.00219	0.00221	0.00219
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00164	-0.00174	-0.00173
	(!A1 * !A3 * B1 * !C1 * !X)	0.00225	0.00225	0.00225
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00171	-0.00177	-0.00176
	(!A1 * !A3 * !B1 * C1 * !X)	0.00225	0.00225	0.00225
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00171	-0.00176	-0.00176
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00225	0.00225	0.00225

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)**	0.00102	0.00101	0.00101
	(A2 * B1 * C1 * X)	-0.00072	-0.00072	-0.00071
	(A2 * B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(A2 * B1 * !C1 * !X)	-0.00111	-0.00114	-0.00113
	(A2 * !B1 * C1 * !X)	0.00089	0.00090	0.00089
	(A2 * !B1 * C1 * !X)	-0.00111	-0.00114	-0.00113
	(A2 * !B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(A2 * !B1 * !C1 * !X)	-0.00112	-0.00114	-0.00113
	(A1 * !A2 * B1 * C1 * X)	0.00102	0.00101	0.00101
	(A1 * !A2 * B1 * C1 * X)	-0.00073	-0.00071	-0.00071
	(A1 * !A2 * B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(A1 * !A2 * B1 * !C1 * !X)	-0.00105	-0.00107	-0.00107
	(A1 * !A2 * !B1 * C1 * !X)	0.00089	0.00090	0.00089
	(A1 * !A2 * !B1 * C1 * !X)	-0.00105	-0.00107	-0.00107
	(A1 * !A2 * !B1 * !C1 * !X)	0.00089	0.00089	0.00089
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00105	-0.00107	-0.00108
	(!A1 * !A2 * B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00115	-0.00115	-0.00115
	(!A1 * !A2 * !B1 * C1 * !X)	0.00085	0.00086	0.00085
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00115	-0.00116	-0.00115
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00085	0.00085	0.00085
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00115	-0.00115	-0.00115

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00114	0.00112	0.00112
	(A2 * B1 * C1 * X)	-0.00075	-0.00073	-0.00073
	(A2 * B1 * !C1 * !X)	0.00096	0.00097	0.00096
	(A2 * B1 * !C1 * !X)	-0.00120	-0.00123	-0.00122
	(A2 * !B1 * C1 * !X)	0.00096	0.00097	0.00096
	(A2 * !B1 * C1 * !X)	-0.00120	-0.00123	-0.00122
	(A2 * !B1 * !C1 * !X)	0.00097	0.00097	0.00096
	(A2 * !B1 * !C1 * !X)	-0.00120	-0.00123	-0.00122
	(A1 * !A2 * B1 * C1 * X)	0.00114	0.00112	0.00112
	(A1 * !A2 * B1 * C1 * X)	-0.00074	-0.00073	-0.00073
	(A1 * !A2 * B1 * !C1 * !X)	0.00097	0.00097	0.00096
	(A1 * !A2 * B1 * !C1 * !X)	-0.00113	-0.00115	-0.00115
	(A1 * !A2 * !B1 * C1 * !X)	0.00097	0.00097	0.00096
	(A1 * !A2 * !B1 * C1 * !X)	-0.00113	-0.00115	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00097	0.00096	0.00096
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00113	-0.00115	-0.00116
	(!A1 * !A2 * B1 * !C1 * !X)	0.00089	0.00090	0.00089
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * !A2 * !B1 * C1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00090	0.00091	0.00090
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00126	-0.00126	-0.00126

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00194	0.00191	0.00191
	(A2 * B1 * C1 * X)	-0.00144	-0.00141	-0.00141
	(A2 * B1 * !C1 * !X)	0.00165	0.00167	0.00165
	(A2 * B1 * !C1 * !X)	-0.00223	-0.00227	-0.00226
	(A2 * !B1 * C1 * !X)	0.00165	0.00167	0.00165
	(A2 * !B1 * C1 * !X)	-0.00223	-0.00227	-0.00226
	(A2 * !B1 * !C1 * !X)	0.00166	0.00167	0.00165
	(A2 * !B1 * !C1 * !X)	-0.00223	-0.00228	-0.00226
	(A1 * !A2 * B1 * C1 * X)	0.00190	0.00191	0.00192
	(A1 * !A2 * B1 * C1 * X)	-0.00140	-0.00141	-0.00141
	(A1 * !A2 * B1 * !C1 * !X)	0.00166	0.00167	0.00165
	(A1 * !A2 * B1 * !C1 * !X)	-0.00211	-0.00214	-0.00214
	(A1 * !A2 * !B1 * C1 * !X)	0.00166	0.00167	0.00165
	(A1 * !A2 * !B1 * C1 * !X)	-0.00211	-0.00214	-0.00214
	(A1 * !A2 * !B1 * !C1 * !X)	0.00166	0.00167	0.00165
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00211	-0.00215	-0.00214
	(!A1 * !A2 * B1 * !C1 * !X)	0.00153	0.00153	0.00152
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00231	-0.00232	-0.00231
	(!A1 * !A2 * !B1 * C1 * !X)	0.00156	0.00156	0.00155
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00232	-0.00232	-0.00231
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00156	0.00156	0.00155
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00232	-0.00232	-0.00231

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)**	-0.00095	-0.00096	-0.00100
	(A2 * B1 * C1 * X)	0.00076	0.00076	0.00073
	(A2 * B1 * !C1 * !X)	-0.00088	-0.00089	-0.00089
	(A2 * B1 * !C1 * !X)	0.00112	0.00114	0.00113
	(A2 * !B1 * C1 * !X)	-0.00088	-0.00089	-0.00089
	(A2 * !B1 * C1 * !X)	0.00112	0.00114	0.00113
	(A2 * !B1 * !C1 * !X)	-0.00088	-0.00089	-0.00089
	(A2 * !B1 * !C1 * !X)	0.00112	0.00114	0.00113
	(A1 * !A2 * B1 * C1 * X)	-0.00088	-0.00089	-0.00099
	(A1 * !A2 * B1 * C1 * X)	0.00080	0.00080	0.00073
	(A1 * !A2 * B1 * !C1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !A2 * B1 * !C1 * !X)	0.00107	0.00107	0.00107
	(A1 * !A2 * !B1 * C1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !A2 * !B1 * C1 * !X)	0.00107	0.00107	0.00107
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00089	-0.00089	-0.00089
	(A1 * !A2 * !B1 * !C1 * !X)	0.00108	0.00107	0.00108
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00080	-0.00084	-0.00083
	(!A1 * !A2 * B1 * !C1 * !X)	0.00115	0.00115	0.00115
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00083	-0.00086	-0.00085
	(!A1 * !A2 * !B1 * C1 * !X)	0.00115	0.00116	0.00115
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00085	-0.00085
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00115	0.00116	0.00116

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00109	-0.00110	-0.00112
	(A2 * B1 * C1 * X)	0.00076	0.00076	0.00074
	(A2 * B1 * !C1 * !X)	-0.00096	-0.00097	-0.00096
	(A2 * B1 * !C1 * !X)	0.00123	0.00123	0.00122
	(A2 * !B1 * C1 * !X)	-0.00096	-0.00097	-0.00096
	(A2 * !B1 * C1 * !X)	0.00123	0.00123	0.00122
	(A2 * !B1 * !C1 * !X)	-0.00097	-0.00097	-0.00096
	(A2 * !B1 * !C1 * !X)	0.00123	0.00123	0.00122
	(A1 * !A2 * B1 * C1 * X)	-0.00102	-0.00102	-0.00111
	(A1 * !A2 * B1 * C1 * X)	0.00080	0.00080	0.00074
	(A1 * !A2 * B1 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * !A2 * B1 * !C1 * !X)	0.00114	0.00115	0.00115
	(A1 * !A2 * !B1 * C1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * !A2 * !B1 * C1 * !X)	0.00114	0.00115	0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * !A2 * !B1 * !C1 * !X)	0.00115	0.00115	0.00116
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00084	-0.00089	-0.00089
	(!A1 * !A2 * B1 * !C1 * !X)	0.00126	0.00126	0.00126
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00088	-0.00091	-0.00090
	(!A1 * !A2 * !B1 * C1 * !X)	0.00127	0.00126	0.00126
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00088	-0.00091	-0.00090
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00127	0.00126	0.00126

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00180	-0.00181	-0.00191
	(A2 * B1 * C1 * X)	0.00152	0.00152	0.00144
	(A2 * B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(A2 * B1 * !C1 * !X)	0.00225	0.00227	0.00226
	(A2 * !B1 * C1 * !X)	-0.00165	-0.00166	-0.00165
	(A2 * !B1 * C1 * !X)	0.00226	0.00227	0.00226
	(A2 * !B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(A2 * !B1 * !C1 * !X)	0.00226	0.00228	0.00226
	(A1 * !A2 * B1 * C1 * X)	-0.00168	-0.00169	-0.00188
	(A1 * !A2 * B1 * C1 * X)	0.00160	0.00159	0.00144
	(A1 * !A2 * B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * B1 * !C1 * !X)	0.00213	0.00214	0.00214
	(A1 * !A2 * !B1 * C1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * !B1 * C1 * !X)	0.00213	0.00214	0.00214
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * !B1 * !C1 * !X)	0.00214	0.00215	0.00214
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00145	-0.00153	-0.00152
	(!A1 * !A2 * B1 * !C1 * !X)	0.00231	0.00232	0.00232
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00151	-0.00156	-0.00155
	(!A1 * !A2 * !B1 * C1 * !X)	0.00232	0.00232	0.00232
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00151	-0.00156	-0.00155
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00232	0.00233	0.00232

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00079	0.00080	0.00079
	(A3 * !C1 * !X)	-0.00117	-0.00118	-0.00118
	(A2 * !A3 * !C1 * !X)	0.00079	0.00080	0.00079
	(A2 * !A3 * !C1 * !X)	-0.00117	-0.00118	-0.00118
	(A1 * !A2 * !A3 * !C1 * !X)	0.00080	0.00080	0.00079
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00118	-0.00118	-0.00118
	(!A1 * !A2 * !A3 * C1 * !X)	0.00048	0.00048	0.00046
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00118	-0.00118	-0.00117
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00056	0.00056	0.00055
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00118	-0.00118	-0.00118
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00089	0.00090	0.00089
	(A3 * !C1 * !X)	-0.00122	-0.00123	-0.00122
	(A2 * !A3 * !C1 * !X)	0.00089	0.00090	0.00089
	(A2 * !A3 * !C1 * !X)	-0.00121	-0.00123	-0.00122
	(A1 * !A2 * !A3 * !C1 * !X)	0.00089	0.00090	0.00089
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00122	-0.00123	-0.00122
	(!A1 * !A2 * !A3 * C1 * !X)	0.00047	0.00047	0.00046
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00124	-0.00124	-0.00123
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00125	-0.00125	-0.00124
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00175	0.00176	0.00175
	(A3 * !C1 * !X)	-0.00263	-0.00264	-0.00263
	(A2 * !A3 * !C1 * !X)	0.00175	0.00176	0.00175
	(A2 * !A3 * !C1 * !X)	-0.00263	-0.00264	-0.00263
	(A1 * !A2 * !A3 * !C1 * !X)	0.00174	0.00176	0.00175
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00263	-0.00264	-0.00263
	(!A1 * !A2 * !A3 * C1 * !X)	0.00103	0.00103	0.00102
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00264	-0.00264	-0.00262
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00117	0.00118	0.00117
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00264	-0.00266	-0.00265

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00078	-0.00080	-0.00079
	(A3 * !C1 * !X)	0.00118	0.00119	0.00118
	(A2 * !A3 * !C1 * !X)	-0.00078	-0.00080	-0.00079
	(A2 * !A3 * !C1 * !X)	0.00118	0.00118	0.00118
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00078	-0.00080	-0.00079
	(A1 * !A2 * !A3 * !C1 * !X)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00043	-0.00043	-0.00044
	(!A1 * !A2 * !A3 * C1 * !X)	0.00119	0.00120	0.00118
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00056	-0.00056	-0.00055
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00118	0.00118	0.00118
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00087	-0.00090	-0.00089
	(A3 * !C1 * !X)	0.00122	0.00123	0.00122
	(A2 * !A3 * !C1 * !X)	-0.00087	-0.00090	-0.00089
	(A2 * !A3 * !C1 * !X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00087	-0.00090	-0.00089
	(A1 * !A2 * !A3 * !C1 * !X)	0.00123	0.00123	0.00122
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00044	-0.00044	-0.00045
	(!A1 * !A2 * !A3 * C1 * !X)	0.00127	0.00126	0.00124
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00054	-0.00054	-0.00054
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00125	0.00125	0.00125

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00172	-0.00176	-0.00175
	(A3 * !C1 * !X)	0.00264	0.00266	0.00264
	(A2 * !A3 * !C1 * !X)	-0.00172	-0.00176	-0.00175
	(A2 * !A3 * !C1 * !X)	0.00264	0.00266	0.00264
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00171	-0.00176	-0.00175
	(A1 * !A2 * !A3 * !C1 * !X)	0.00264	0.00266	0.00264
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00095	-0.00096	-0.00098
	(!A1 * !A2 * !A3 * C1 * !X)	0.00269	0.00270	0.00265
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00267	0.00266	0.00265

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00038	0.00038	0.00037
	(A3 * !B1 * !X)	-0.00138	-0.00138	-0.00139
	(A2 * !A3 * !B1 * !X)	0.00038	0.00038	0.00037
	(A2 * !A3 * !B1 * !X)	-0.00137	-0.00138	-0.00139
	(!A2 * !A3 * !B1 * !X)	0.00038	0.00038	0.00037
	(!A2 * !A3 * !B1 * !X)	-0.00137	-0.00138	-0.00139
	(!A1 * !A2 * !A3 * B1 * !X)	0.00044	0.00044	0.00039
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00129	-0.00130	-0.00138
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00043	0.00043	0.00042
	(A3 * !B1 * !X)	-0.00139	-0.00140	-0.00141
	(A2 * !A3 * !B1 * !X)	0.00043	0.00043	0.00042
	(A2 * !A3 * !B1 * !X)	-0.00139	-0.00140	-0.00141
	(!A2 * !A3 * !B1 * !X)	0.00043	0.00043	0.00042
	(!A2 * !A3 * !B1 * !X)	-0.00139	-0.00139	-0.00141
	(!A1 * !A2 * !A3 * B1 * !X)	0.00046	0.00046	0.00041
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00133	-0.00133	-0.00141
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00077	0.00077	0.00074
	(A3 * !B1 * !X)	-0.00259	-0.00260	-0.00264
	(A2 * !A3 * !B1 * !X)	0.00076	0.00077	0.00074
	(A2 * !A3 * !B1 * !X)	-0.00257	-0.00260	-0.00264
	(!A2 * !A3 * !B1 * !X)	0.00077	0.00077	0.00074
	(!A2 * !A3 * !B1 * !X)	-0.00259	-0.00260	-0.00264
	(!A1 * !A2 * !A3 * B1 * !X)	0.00081	0.00082	0.00072
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00243	-0.00246	-0.00262

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(A3 * !B1 * !X)	0.00139	0.00139	0.00139
	(A2 * !A3 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(A2 * !A3 * !B1 * !X)	0.00139	0.00139	0.00139
	(!A2 * !A3 * !B1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !A3 * !B1 * !X)	0.00139	0.00139	0.00139
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00036	-0.00036	-0.00035
	(!A1 * !A2 * !A3 * B1 * !X)	0.00138	0.00139	0.00139
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00042	-0.00041	-0.00041
	(A3 * !B1 * !X)	0.00142	0.00142	0.00141
	(A2 * !A3 * !B1 * !X)	-0.00040	-0.00041	-0.00041
	(A2 * !A3 * !B1 * !X)	0.00140	0.00141	0.00141
	(!A2 * !A3 * !B1 * !X)	-0.00040	-0.00041	-0.00041
	(!A2 * !A3 * !B1 * !X)	0.00140	0.00141	0.00141
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !A3 * B1 * !X)	0.00140	0.00141	0.00141
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(A3 * !B1 * !X)	0.00263	0.00265	0.00264
	(A2 * !A3 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(A2 * !A3 * !B1 * !X)	0.00263	0.00265	0.00264
	(!A2 * !A3 * !B1 * !X)	-0.00072	-0.00072	-0.00072
	(!A2 * !A3 * !B1 * !X)	0.00263	0.00265	0.00264
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * !A3 * B1 * !X)	0.00263	0.00264	0.00264

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31ai_1	9.59040
sky130_fd_sc_hs__o31ai_2	15.98400
sky130_fd_sc_hs__o31ai_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__o31ai_1	0.00243	0.00288	0.00285	0.00259	0.10120
sky130_fd_sc_hs__o31ai_2	0.00493	0.00486	0.00519	0.00517	0.18832
sky130_fd_sc_hs__o31ai_4	0.00947	0.00952	0.01010	0.00760	0.36601

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.00011	0.00019
sky130_fd_sc_hs__o31ai_2	0.00000	0.00022	0.00039
sky130_fd_sc_hs__o31ai_4	0.00000	0.00035	0.00058

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)	0.60175	2.37027	13.50890
	A2->Y (FR)	0.59444	2.35055	13.73280
	A3->Y (FR)	0.49818	2.19177	13.11840
	B1->Y (FR)	0.10678	1.05122	8.15146
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.60204	2.13518	13.46560
	A2->Y (FR)	0.55575	2.07137	13.65130
	A3->Y (FR)	0.46036	1.91502	13.07620
	B1->Y (FR)	0.09361	0.97813	8.13634
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.54467	1.88438	13.46020
	A2->Y (FR)	0.50360	1.82712	13.67650
	A3->Y (FR)	0.40277	1.66612	13.16650
	B1->Y (FR)	0.11947	1.10986	9.83126

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.06148	0.54824	3.82736
	A2->Y (RF)	0.06460	0.54386	3.81354
	A3->Y (RF)	0.05746	0.53002	3.78554
	B1->Y (RF)	0.05291	0.57116	4.00510
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.06217	0.52314	3.85902
	A2->Y (RF)	0.06228	0.51249	3.83413
	A3->Y (RF)	0.05695	0.49911	3.81170
	B1->Y (RF)	0.04927	0.53819	4.06793
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.06085	0.48428	3.83931
	A2->Y (RF)	0.05990	0.47258	3.81084
	A3->Y (RF)	0.05189	0.45081	3.74473
	B1->Y (RF)	0.04784	0.52745	4.34962

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00049	0.00041	0.00038
	A1	0.00514	0.00506	0.00503
	A2	0.00052	0.00041	0.00037
	A2	0.00494	0.00482	0.00477
	A3	0.00051	0.00037	0.00032
	A3	0.00441	0.00427	0.00381
	B1	-0.00015	-0.00027	-0.00029
	B1	0.00375	0.00364	0.00365
sky130_fd_sc_hs__o31ai_2	A1	0.00089	0.00066	0.00062
	A1	0.01021	0.00998	0.00991
	A2	0.00093	0.00069	0.00064
	A2	0.00918	0.00894	0.00889
	A3	0.00085	0.00056	0.00050
	A3	0.00826	0.00796	0.00711
	B1	-0.00095	-0.00114	-0.00116
	B1	0.00664	0.00643	0.00647
sky130_fd_sc_hs__o31ai_4	A1	0.00135	0.00097	0.00089
	A1	0.01931	0.01894	0.01888
	A2	0.00133	0.00094	0.00087
	A2	0.01745	0.01705	0.01697
	A3	0.00121	0.00069	0.00065
	A3	0.01554	0.01502	0.01489
	B1	-0.00179	-0.00211	-0.00211
	B1	0.01056	0.01021	0.01025

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00592	0.00584	0.00574
	A1	0.00127	0.00118	0.00110
	A2	0.00527	0.00520	0.00512
	A2	0.00082	0.00074	0.00067
	A3	0.00430	0.00428	0.00423
	A3	0.00031	0.00029	0.00024
	B1	0.00509	0.00501	0.00489
	B1	0.00126	0.00116	0.00108
sky130_fd_sc_hs__o31ai_2	A1	0.01194	0.01174	0.01150
	A1	0.00266	0.00244	0.00226
	A2	0.00991	0.00977	0.00965
	A2	0.00155	0.00141	0.00130
	A3	0.00812	0.00809	0.00802
	A3	0.00055	0.00049	0.00043
	B1	0.01005	0.00986	0.00964
	B1	0.00269	0.00247	0.00231
sky130_fd_sc_hs__o31ai_4	A1	0.02183	0.02143	0.02096
	A1	0.00390	0.00345	0.00313
	A2	0.01804	0.01774	0.01751
	A2	0.00176	0.00140	0.00125
	A3	0.01430	0.01419	0.01416
	A3	-0.00035	-0.00050	-0.00051
	B1	0.01758	0.01740	0.01712
	B1	0.00565	0.00545	0.00522

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)**	0.00103	0.00104	0.00103
	(A2 * A3 * B1 * !Y)	-0.00115	-0.00118	-0.00118
	(A2 * !B1 * Y)	0.00103	0.00104	0.00103
	(A2 * !B1 * Y)	-0.00115	-0.00119	-0.00118
	(A2 * !A3 * B1 * !Y)	0.00103	0.00104	0.00103
	(A2 * !A3 * B1 * !Y)	-0.00115	-0.00119	-0.00118
	(!A2 * A3 * B1 * !Y)	0.00104	0.00103	0.00103
	(!A2 * A3 * B1 * !Y)	-0.00109	-0.00112	-0.00112
	(!A2 * A3 * !B1 * Y)	0.00104	0.00103	0.00103
	(!A2 * A3 * !B1 * Y)	-0.00109	-0.00112	-0.00112
	(!A2 * !A3 * !B1 * Y)	0.00097	0.00098	0.00097
	(!A2 * !A3 * !B1 * Y)	-0.00121	-0.00121	-0.00121
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00210	0.00210	0.00208
	(A2 * A3 * B1 * !Y)	-0.00238	-0.00245	-0.00243
	(A2 * !B1 * Y)	0.00209	0.00210	0.00208
	(A2 * !B1 * Y)	-0.00239	-0.00246	-0.00244
	(A2 * !A3 * B1 * !Y)	0.00210	0.00210	0.00208
	(A2 * !A3 * B1 * !Y)	-0.00238	-0.00245	-0.00243
	(!A2 * A3 * B1 * !Y)	0.00209	0.00210	0.00208
	(!A2 * A3 * B1 * !Y)	-0.00224	-0.00231	-0.00230
	(!A2 * A3 * !B1 * Y)	0.00208	0.00209	0.00208
	(!A2 * A3 * !B1 * Y)	-0.00225	-0.00232	-0.00231
	(!A2 * !A3 * !B1 * Y)	0.00193	0.00194	0.00192
	(!A2 * !A3 * !B1 * Y)	-0.00252	-0.00254	-0.00252

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00402	0.00405	0.00401
	(A2 * A3 * B1 * !Y)	-0.00470	-0.00486	-0.00481
	(A2 * !B1 * Y)	0.00400	0.00404	0.00400
	(A2 * !B1 * Y)	-0.00472	-0.00487	-0.00482
	(A2 * !A3 * B1 * !Y)	0.00402	0.00405	0.00401
	(A2 * !A3 * B1 * !Y)	-0.00470	-0.00486	-0.00481
	(!A2 * A3 * B1 * !Y)	0.00399	0.00403	0.00401
	(!A2 * A3 * B1 * !Y)	-0.00440	-0.00458	-0.00457
	(!A2 * A3 * !B1 * Y)	0.00398	0.00402	0.00400
	(!A2 * A3 * !B1 * Y)	-0.00442	-0.00460	-0.00458
	(!A2 * !A3 * !B1 * Y)	0.00369	0.00373	0.00370
	(!A2 * !A3 * !B1 * Y)	-0.00497	-0.00501	-0.00499

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)**	-0.00103	-0.00103	-0.00103
	(A2 * A3 * B1 * !Y)	0.00119	0.00118	0.00118
	(A2 * !B1 * Y)	-0.00103	-0.00104	-0.00103
	(A2 * !B1 * Y)	0.00118	0.00119	0.00118
	(A2 * !A3 * B1 * !Y)	-0.00103	-0.00104	-0.00103
	(A2 * !A3 * B1 * !Y)	0.00118	0.00119	0.00118
	(!A2 * A3 * B1 * !Y)	-0.00103	-0.00103	-0.00103
	(!A2 * A3 * B1 * !Y)	0.00112	0.00112	0.00112
	(!A2 * A3 * !B1 * Y)	-0.00103	-0.00103	-0.00103
	(!A2 * A3 * !B1 * Y)	0.00113	0.00112	0.00112
	(!A2 * !A3 * !B1 * Y)	-0.00094	-0.00098	-0.00097
	(!A2 * !A3 * !B1 * Y)	0.00122	0.00121	0.00121

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00207	-0.00209	-0.00208
	(A2 * A3 * B1 * !Y)	0.00241	0.00245	0.00243
	(A2 * !B1 * Y)	-0.00207	-0.00209	-0.00207
	(A2 * !B1 * Y)	0.00242	0.00246	0.00244
	(A2 * !A3 * B1 * !Y)	-0.00208	-0.00209	-0.00208
	(A2 * !A3 * B1 * !Y)	0.00242	0.00245	0.00243
	(!A2 * A3 * B1 * !Y)	-0.00207	-0.00209	-0.00208
	(!A2 * A3 * B1 * !Y)	0.00228	0.00231	0.00230
	(!A2 * A3 * !B1 * Y)	-0.00207	-0.00208	-0.00207
	(!A2 * A3 * !B1 * Y)	0.00231	0.00232	0.00231
	(!A2 * !A3 * !B1 * Y)	-0.00185	-0.00194	-0.00192
	(!A2 * !A3 * !B1 * Y)	0.00252	0.00254	0.00253
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00401	-0.00403	-0.00401
	(A2 * A3 * B1 * !Y)	0.00482	0.00486	0.00481
	(A2 * !B1 * Y)	-0.00400	-0.00402	-0.00400
	(A2 * !B1 * Y)	0.00483	0.00487	0.00482
	(A2 * !A3 * B1 * !Y)	-0.00401	-0.00403	-0.00401
	(A2 * !A3 * B1 * !Y)	0.00482	0.00486	0.00481
	(!A2 * A3 * B1 * !Y)	-0.00399	-0.00401	-0.00401
	(!A2 * A3 * B1 * !Y)	0.00455	0.00458	0.00457
	(!A2 * A3 * !B1 * Y)	-0.00398	-0.00400	-0.00399
	(!A2 * A3 * !B1 * Y)	0.00459	0.00460	0.00458
	(!A2 * !A3 * !B1 * Y)	-0.00359	-0.00373	-0.00370
	(!A2 * !A3 * !B1 * Y)	0.00502	0.00503	0.00500

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)**	0.00118	0.00118	0.00118
	(A1 * A3 * B1 * !Y)	-0.00091	-0.00090	-0.00090
	(A1 * A3 * !B1 * Y)	0.00103	0.00102	0.00102
	(A1 * A3 * !B1 * Y)	-0.00113	-0.00113	-0.00113
	(A1 * !A3 * B1 * !Y)	0.00118	0.00118	0.00118
	(A1 * !A3 * B1 * !Y)	-0.00086	-0.00086	-0.00087
	(A1 * !A3 * !B1 * Y)	0.00102	0.00103	0.00102
	(A1 * !A3 * !B1 * Y)	-0.00135	-0.00139	-0.00138
	(!A1 * A3 * B1 * !Y)	0.00118	0.00119	0.00118
	(!A1 * A3 * B1 * !Y)	-0.00120	-0.00123	-0.00122
	(!A1 * A3 * !B1 * Y)	0.00102	0.00103	0.00102
	(!A1 * A3 * !B1 * Y)	-0.00136	-0.00139	-0.00138
	(!A1 * !A3 * !B1 * Y)	0.00095	0.00096	0.00095
	(!A1 * !A3 * !B1 * Y)	-0.00142	-0.00142	-0.00141
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00206	0.00207	0.00206
	(A1 * A3 * B1 * !Y)	-0.00178	-0.00177	-0.00176
	(A1 * A3 * !B1 * Y)	0.00202	0.00202	0.00201
	(A1 * A3 * !B1 * Y)	-0.00194	-0.00195	-0.00194
	(A1 * !A3 * B1 * !Y)	0.00205	0.00206	0.00205
	(A1 * !A3 * B1 * !Y)	-0.00167	-0.00167	-0.00168
	(A1 * !A3 * !B1 * Y)	0.00201	0.00202	0.00201
	(A1 * !A3 * !B1 * Y)	-0.00237	-0.00243	-0.00241
	(!A1 * A3 * B1 * !Y)	0.00205	0.00206	0.00204
	(!A1 * A3 * B1 * !Y)	-0.00236	-0.00243	-0.00241
	(!A1 * A3 * !B1 * Y)	0.00201	0.00203	0.00201
	(!A1 * A3 * !B1 * Y)	-0.00240	-0.00247	-0.00244
	(!A1 * !A3 * !B1 * Y)	0.00187	0.00188	0.00186
	(!A1 * !A3 * !B1 * Y)	-0.00251	-0.00252	-0.00251

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00408	0.00411	0.00408
	(A1 * A3 * B1 * !Y)	-0.00355	-0.00353	-0.00352
	(A1 * A3 * !B1 * Y)	0.00400	0.00401	0.00398
	(A1 * A3 * !B1 * Y)	-0.00388	-0.00389	-0.00388
	(A1 * !A3 * B1 * !Y)	0.00408	0.00409	0.00406
	(A1 * !A3 * B1 * !Y)	-0.00334	-0.00334	-0.00335
	(A1 * !A3 * !B1 * Y)	0.00398	0.00397	0.00398
	(A1 * !A3 * !B1 * Y)	-0.00474	-0.00481	-0.00482
	(!A1 * A3 * B1 * !Y)	0.00406	0.00408	0.00405
	(!A1 * A3 * B1 * !Y)	-0.00468	-0.00477	-0.00479
	(!A1 * A3 * !B1 * Y)	0.00398	0.00400	0.00398
	(!A1 * A3 * !B1 * Y)	-0.00479	-0.00485	-0.00488
	(!A1 * !A3 * !B1 * Y)	0.00367	0.00371	0.00368
	(!A1 * !A3 * !B1 * Y)	-0.00501	-0.00505	-0.00502

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)**	-0.00118	-0.00118	-0.00118
	(A1 * A3 * B1 * !Y)	0.00091	0.00090	0.00090
	(A1 * A3 * !B1 * Y)	-0.00102	-0.00102	-0.00102
	(A1 * A3 * !B1 * Y)	0.00113	0.00113	0.00113
	(A1 * !A3 * B1 * !Y)	-0.00118	-0.00118	-0.00118
	(A1 * !A3 * B1 * !Y)	0.00088	0.00088	0.00088
	(A1 * !A3 * !B1 * Y)	-0.00102	-0.00103	-0.00102
	(A1 * !A3 * !B1 * Y)	0.00138	0.00139	0.00138
	(!A1 * A3 * B1 * !Y)	-0.00118	-0.00119	-0.00118
	(!A1 * A3 * B1 * !Y)	0.00123	0.00123	0.00122
	(!A1 * A3 * !B1 * Y)	-0.00102	-0.00103	-0.00102
	(!A1 * A3 * !B1 * Y)	0.00139	0.00139	0.00138
	(!A1 * !A3 * !B1 * Y)	-0.00092	-0.00095	-0.00095
	(!A1 * !A3 * !B1 * Y)	0.00142	0.00142	0.00142
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00206	-0.00206	-0.00205
	(A1 * A3 * B1 * !Y)	0.00178	0.00177	0.00176
	(A1 * A3 * !B1 * Y)	-0.00201	-0.00201	-0.00201
	(A1 * A3 * !B1 * Y)	0.00194	0.00195	0.00194
	(A1 * !A3 * B1 * !Y)	-0.00204	-0.00205	-0.00204
	(A1 * !A3 * B1 * !Y)	0.00171	0.00171	0.00171
	(A1 * !A3 * !B1 * Y)	-0.00201	-0.00202	-0.00201
	(A1 * !A3 * !B1 * Y)	0.00240	0.00243	0.00241
	(!A1 * A3 * B1 * !Y)	-0.00204	-0.00206	-0.00204
	(!A1 * A3 * B1 * !Y)	0.00240	0.00243	0.00241
	(!A1 * A3 * !B1 * Y)	-0.00201	-0.00202	-0.00201
	(!A1 * A3 * !B1 * Y)	0.00244	0.00247	0.00244
	(!A1 * !A3 * !B1 * Y)	-0.00180	-0.00188	-0.00186
	(!A1 * !A3 * !B1 * Y)	0.00251	0.00252	0.00251

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00408	-0.00407	-0.00406
	(A1 * A3 * B1 * !Y)	0.00355	0.00353	0.00352
	(A1 * A3 * !B1 * Y)	-0.00397	-0.00398	-0.00397
	(A1 * A3 * !B1 * Y)	0.00388	0.00389	0.00388
	(A1 * !A3 * B1 * !Y)	-0.00404	-0.00405	-0.00404
	(A1 * !A3 * B1 * !Y)	0.00339	0.00341	0.00341
	(A1 * !A3 * !B1 * Y)	-0.00397	-0.00397	-0.00397
	(A1 * !A3 * !B1 * Y)	0.00482	0.00481	0.00482
	(!A1 * A3 * B1 * !Y)	-0.00405	-0.00404	-0.00405
	(!A1 * A3 * B1 * !Y)	0.00478	0.00477	0.00479
	(!A1 * A3 * !B1 * Y)	-0.00398	-0.00395	-0.00397
	(!A1 * A3 * !B1 * Y)	0.00489	0.00485	0.00488
	(!A1 * !A3 * !B1 * Y)	-0.00357	-0.00371	-0.00368
	(!A1 * !A3 * !B1 * Y)	0.00504	0.00505	0.00503

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00128	0.00127	0.00127
	(A2 * B1 * !Y)	-0.00074	-0.00074	-0.00074
	(A2 * !B1 * Y)	0.00098	0.00099	0.00098
	(A2 * !B1 * Y)	-0.00134	-0.00137	-0.00136
	(A1 * !A2 * B1 * !Y)	0.00127	0.00127	0.00127
	(A1 * !A2 * B1 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * !B1 * Y)	0.00098	0.00098	0.00098
	(A1 * !A2 * !B1 * Y)	-0.00126	-0.00129	-0.00129
	(!A1 * !A2 * !B1 * Y)	0.00092	0.00092	0.00092
	(!A1 * !A2 * !B1 * Y)	-0.00140	-0.00140	-0.00140

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00238	0.00238	0.00237
	(A2 * B1 * !Y)	-0.00148	-0.00148	-0.00147
	(A2 * !B1 * Y)	0.00196	0.00197	0.00196
	(A2 * !B1 * Y)	-0.00250	-0.00254	-0.00254
	(A1 * !A2 * B1 * !Y)	0.00238	0.00238	0.00237
	(A1 * !A2 * B1 * !Y)	-0.00148	-0.00147	-0.00147
	(A1 * !A2 * !B1 * Y)	0.00197	0.00197	0.00196
	(A1 * !A2 * !B1 * Y)	-0.00236	-0.00240	-0.00240
	(!A1 * !A2 * !B1 * Y)	0.00182	0.00184	0.00183
	(!A1 * !A2 * !B1 * Y)	-0.00261	-0.00263	-0.00262
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00469	0.00466	0.00465
	(A2 * B1 * !Y)	-0.00297	-0.00294	-0.00293
	(A2 * !B1 * Y)	0.00387	0.00387	0.00385
	(A2 * !B1 * Y)	-0.00497	-0.00504	-0.00503
	(A1 * !A2 * B1 * !Y)	0.00468	0.00466	0.00465
	(A1 * !A2 * B1 * !Y)	-0.00296	-0.00293	-0.00292
	(A1 * !A2 * !B1 * Y)	0.00382	0.00390	0.00385
	(A1 * !A2 * !B1 * Y)	-0.00462	-0.00476	-0.00470
	(!A1 * !A2 * !B1 * Y)	0.00356	0.00362	0.00358
	(!A1 * !A2 * !B1 * Y)	-0.00517	-0.00522	-0.00519

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00124	-0.00124	-0.00127
	(A2 * B1 * !Y)	0.00078	0.00077	0.00075
	(A2 * !B1 * Y)	-0.00098	-0.00098	-0.00098
	(A2 * !B1 * Y)	0.00137	0.00137	0.00136
	(A1 * !A2 * B1 * !Y)	-0.00116	-0.00117	-0.00126
	(A1 * !A2 * B1 * !Y)	0.00081	0.00081	0.00075
	(A1 * !A2 * !B1 * Y)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * !B1 * Y)	0.00129	0.00129	0.00129
	(!A1 * !A2 * !B1 * Y)	-0.00089	-0.00092	-0.00092
	(!A1 * !A2 * !B1 * Y)	0.00140	0.00140	0.00140
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00230	-0.00232	-0.00237
	(A2 * B1 * !Y)	0.00153	0.00154	0.00149
	(A2 * !B1 * Y)	-0.00196	-0.00196	-0.00196
	(A2 * !B1 * Y)	0.00254	0.00254	0.00254
	(A1 * !A2 * B1 * !Y)	-0.00211	-0.00213	-0.00234
	(A1 * !A2 * B1 * !Y)	0.00164	0.00165	0.00150
	(A1 * !A2 * !B1 * Y)	-0.00196	-0.00196	-0.00196
	(A1 * !A2 * !B1 * Y)	0.00239	0.00240	0.00240
	(!A1 * !A2 * !B1 * Y)	-0.00176	-0.00184	-0.00183
	(!A1 * !A2 * !B1 * Y)	0.00261	0.00263	0.00262
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00450	-0.00453	-0.00464
	(A2 * B1 * !Y)	0.00306	0.00306	0.00296
	(A2 * !B1 * Y)	-0.00384	-0.00385	-0.00384
	(A2 * !B1 * Y)	0.00502	0.00504	0.00503
	(A1 * !A2 * B1 * !Y)	-0.00415	-0.00418	-0.00457
	(A1 * !A2 * B1 * !Y)	0.00328	0.00327	0.00299
	(A1 * !A2 * !B1 * Y)	-0.00382	-0.00387	-0.00384
	(A1 * !A2 * !B1 * Y)	0.00472	0.00476	0.00470
	(!A1 * !A2 * !B1 * Y)	-0.00347	-0.00362	-0.00358
	(!A1 * !A2 * !B1 * Y)	0.00519	0.00523	0.00520

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)	0.00044	0.00044	0.00041
	(!A1 * !A2 * !A3 * Y)	-0.00142	-0.00143	-0.00147
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00087	0.00087	0.00080
	(!A1 * !A2 * !A3 * Y)	-0.00281	-0.00283	-0.00293
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00157	0.00157	0.00145
	(!A1 * !A2 * !A3 * Y)	-0.00325	-0.00329	-0.00349

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)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !A3 * Y)	0.00147	0.00148	0.00147
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00079	-0.00078	-0.00078
	(!A1 * !A2 * !A3 * Y)	0.00295	0.00295	0.00294
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00142	-0.00141	-0.00140
	(!A1 * !A2 * !A3 * Y)	0.00352	0.00351	0.00350

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31a_1	11.18880
sky130_fd_sc_hs__o31a_2	12.78720
sky130_fd_sc_hs__o31a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__o31a_1	0.00240	0.00234	0.00237	0.00220	0.35413
sky130_fd_sc_hs__o31a_2	0.00255	0.00247	0.00252	0.00267	0.67108
sky130_fd_sc_hs__o31a_4	0.00429	0.00462	0.00462	0.00465	1.38719

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.00017	0.00023
sky130_fd_sc_hs__o31a_2	0.00000	0.00026	0.00033
sky130_fd_sc_hs__o31a_4	0.00000	0.00053	0.00065

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)	0.18333	1.21194	8.86178
	A2->X (RR)	0.18093	1.20344	8.80452
	A3->X (RR)	0.16826	1.18116	8.71060
	B1->X (RR)	0.17162	1.19302	8.61910
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.18380	1.08121	8.97033
	A2->X (RR)	0.18244	1.07546	8.92991
	A3->X (RR)	0.16875	1.05715	8.86127
	B1->X (RR)	0.17333	1.07762	8.79278
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.19064	0.97136	9.06515
	A2->X (RR)	0.18421	0.95880	9.00626
	A3->X (RR)	0.17348	0.94386	8.93510
	B1->X (RR)	0.17890	0.97162	8.88515

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.81648	1.64621	7.29626
	A2->X (FF)	0.77628	1.60241	7.36993
	A3->X (FF)	0.68781	1.44984	6.72833
	B1->X (FF)	0.21573	1.00478	6.05781
sky130_fd_sc_hs__o31a_2	A1->X (FF)	1.07984	1.92794	7.75171
	A2->X (FF)	1.04014	1.88405	7.88024
	A3->X (FF)	0.95199	1.72552	7.30071
	B1->X (FF)	0.24494	1.02823	6.35093
sky130_fd_sc_hs__o31a_4	A1->X (FF)	1.03362	1.85171	7.79204
	A2->X (FF)	0.99660	1.80597	7.89089
	A3->X (FF)	0.88500	1.61859	7.26266
	B1->X (FF)	0.22667	0.98435	6.38200

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00747	0.00741	0.00731
	A1	0.00328	0.00321	0.00313
	A2	0.00666	0.00666	0.00659
	A2	0.00291	0.00290	0.00286
	A3	0.00581	0.00577	0.00570
	A3	0.00242	0.00237	0.00232
	B1	0.00665	0.00657	0.00647
	B1	0.00342	0.00335	0.00325
sky130_fd_sc_hs__o31a_2	A1	0.00961	0.00968	0.00963
	A1	0.00513	0.00520	0.00520
	A2	0.00876	0.00890	0.00890
	A2	0.00475	0.00490	0.00493
	A3	0.00794	0.00807	0.00805
	A3	0.00427	0.00439	0.00441
	B1	0.00879	0.00880	0.00873
	B1	0.00510	0.00512	0.00507
sky130_fd_sc_hs__o31a_4	A1	0.01799	0.01830	0.01843
	A1	0.01000	0.01030	0.01054
	A2	0.01671	0.01703	0.01712
	A2	0.00913	0.00946	0.00964
	A3	0.01441	0.01471	0.01479
	A3	0.00782	0.00811	0.00828
	B1	0.01654	0.01669	0.01675
	B1	0.00997	0.01013	0.01029

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00275	0.00274	0.00328
	A1	0.00691	0.00691	0.00685
	A2	0.00276	0.00278	0.00287
	A2	0.00645	0.00647	0.00642
	A3	0.00276	0.00276	0.00293
	A3	0.00605	0.00606	0.00600
	B1	0.00221	0.00211	0.00223
	B1	0.00549	0.00538	0.00536
sky130_fd_sc_hs__o31a_2	A1	0.00432	0.00447	0.00474
	A1	0.00875	0.00890	0.00887
	A2	0.00435	0.00453	0.00455
	A2	0.00827	0.00846	0.00844
	A3	0.00433	0.00446	0.00555
	A3	0.00790	0.00804	0.00803
	B1	0.00364	0.00366	0.00428
	B1	0.00740	0.00743	0.00743
sky130_fd_sc_hs__o31a_4	A1	0.00847	0.00903	0.00926
	A1	0.01644	0.01701	0.01719
	A2	0.00815	0.00871	0.00892
	A2	0.01563	0.01620	0.01634
	A3	0.00844	0.00885	0.01198
	A3	0.01485	0.01527	0.01539
	B1	0.00724	0.00742	0.00892
	B1	0.01403	0.01416	0.01421

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)**	0.00099	0.00099	0.00098
	(A2 * A3 * B1 * X)	-0.00103	-0.00105	-0.00105
	(A2 * !B1 * !X)	0.00084	0.00084	0.00084
	(A2 * !B1 * !X)	-0.00118	-0.00120	-0.00120
	(A2 * !A3 * B1 * X)	0.00099	0.00099	0.00098
	(A2 * !A3 * B1 * X)	-0.00103	-0.00105	-0.00105
	(!A2 * A3 * B1 * X)	0.00099	0.00098	0.00098
	(!A2 * A3 * B1 * X)	-0.00097	-0.00100	-0.00100
	(!A2 * A3 * !B1 * !X)	0.00084	0.00084	0.00084
	(!A2 * A3 * !B1 * !X)	-0.00112	-0.00115	-0.00115
	(!A2 * !A3 * !B1 * !X)	0.00079	0.00079	0.00078
	(!A2 * !A3 * !B1 * !X)	-0.00122	-0.00122	-0.00122
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00110	0.00110	0.00109
	(A2 * A3 * B1 * X)	-0.00108	-0.00110	-0.00110
	(A2 * !B1 * !X)	0.00102	0.00102	0.00101
	(A2 * !B1 * !X)	-0.00116	-0.00118	-0.00118
	(A2 * !A3 * B1 * X)	0.00110	0.00110	0.00109
	(A2 * !A3 * B1 * X)	-0.00108	-0.00110	-0.00110
	(!A2 * A3 * B1 * X)	0.00110	0.00110	0.00109
	(!A2 * A3 * B1 * X)	-0.00102	-0.00105	-0.00105
	(!A2 * A3 * !B1 * !X)	0.00102	0.00102	0.00101
	(!A2 * A3 * !B1 * !X)	-0.00110	-0.00113	-0.00113
	(!A2 * !A3 * !B1 * !X)	0.00096	0.00096	0.00096
	(!A2 * !A3 * !B1 * !X)	-0.00120	-0.00120	-0.00120

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00164	0.00166	0.00164
	(A2 * A3 * B1 * X)	-0.00215	-0.00222	-0.00219
	(A2 * !B1 * !X)	0.00164	0.00166	0.00164
	(A2 * !B1 * !X)	-0.00216	-0.00222	-0.00220
	(A2 * !A3 * B1 * X)	0.00164	0.00166	0.00164
	(A2 * !A3 * B1 * X)	-0.00215	-0.00221	-0.00219
	(!A2 * A3 * B1 * X)	0.00166	0.00165	0.00164
	(!A2 * A3 * B1 * X)	-0.00202	-0.00208	-0.00207
	(!A2 * A3 * !B1 * !X)	0.00166	0.00165	0.00164
	(!A2 * A3 * !B1 * !X)	-0.00203	-0.00209	-0.00208
	(!A2 * !A3 * !B1 * !X)	0.00152	0.00154	0.00152
	(!A2 * !A3 * !B1 * !X)	-0.00226	-0.00228	-0.00227

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)**	-0.00098	-0.00098	-0.00098
	(A2 * A3 * B1 * X)	0.00105	0.00105	0.00105
	(A2 * !B1 * !X)	-0.00084	-0.00083	-0.00083
	(A2 * !B1 * !X)	0.00120	0.00120	0.00120
	(A2 * !A3 * B1 * X)	-0.00098	-0.00098	-0.00098
	(A2 * !A3 * B1 * X)	0.00105	0.00105	0.00105
	(!A2 * A3 * B1 * X)	-0.00099	-0.00098	-0.00098
	(!A2 * A3 * B1 * X)	0.00101	0.00100	0.00100
	(!A2 * A3 * !B1 * !X)	-0.00084	-0.00083	-0.00083
	(!A2 * A3 * !B1 * !X)	0.00115	0.00115	0.00115
	(!A2 * !A3 * !B1 * !X)	-0.00076	-0.00079	-0.00078
	(!A2 * !A3 * !B1 * !X)	0.00123	0.00122	0.00122

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00109	-0.00109	-0.00109
	(A2 * A3 * B1 * X)	0.00110	0.00110	0.00110
	(A2 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(A2 * !B1 * !X)	0.00118	0.00118	0.00118
	(A2 * !A3 * B1 * X)	-0.00109	-0.00109	-0.00109
	(A2 * !A3 * B1 * X)	0.00110	0.00110	0.00110
	(!A2 * A3 * B1 * X)	-0.00110	-0.00109	-0.00109
	(!A2 * A3 * B1 * X)	0.00106	0.00105	0.00105
	(!A2 * A3 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(!A2 * A3 * !B1 * !X)	0.00113	0.00113	0.00113
	(!A2 * !A3 * !B1 * !X)	-0.00093	-0.00096	-0.00096
	(!A2 * !A3 * !B1 * !X)	0.00121	0.00121	0.00121
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00164	-0.00165	-0.00164
	(A2 * A3 * B1 * X)	0.00221	0.00222	0.00219
	(A2 * !B1 * !X)	-0.00163	-0.00165	-0.00164
	(A2 * !B1 * !X)	0.00219	0.00222	0.00220
	(A2 * !A3 * B1 * X)	-0.00163	-0.00165	-0.00164
	(A2 * !A3 * B1 * X)	0.00217	0.00221	0.00219
	(!A2 * A3 * B1 * X)	-0.00165	-0.00164	-0.00164
	(!A2 * A3 * B1 * X)	0.00209	0.00208	0.00207
	(!A2 * A3 * !B1 * !X)	-0.00163	-0.00164	-0.00164
	(!A2 * A3 * !B1 * !X)	0.00207	0.00209	0.00208
	(!A2 * !A3 * !B1 * !X)	-0.00148	-0.00154	-0.00152
	(!A2 * !A3 * !B1 * !X)	0.00229	0.00229	0.00228

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)**	0.00091	0.00091	0.00091
	(A1 * A3 * B1 * X)	-0.00076	-0.00075	-0.00075
	(A1 * A3 * !B1 * !X)	0.00087	0.00086	0.00086
	(A1 * A3 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A3 * B1 * X)	0.00092	0.00091	0.00091
	(A1 * !A3 * B1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !A3 * !B1 * !X)	0.00087	0.00086	0.00086
	(A1 * !A3 * !B1 * !X)	-0.00106	-0.00108	-0.00107
	(!A1 * A3 * B1 * X)	0.00091	0.00091	0.00091
	(!A1 * A3 * B1 * X)	-0.00101	-0.00104	-0.00103
	(!A1 * A3 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A1 * A3 * !B1 * !X)	-0.00106	-0.00108	-0.00108
	(!A1 * !A3 * !B1 * !X)	0.00081	0.00080	0.00081
	(!A1 * !A3 * !B1 * !X)	-0.00111	-0.00110	-0.00110
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00102	0.00102	0.00102
	(A1 * A3 * B1 * X)	-0.00078	-0.00077	-0.00077
	(A1 * A3 * !B1 * !X)	0.00098	0.00098	0.00098
	(A1 * A3 * !B1 * !X)	-0.00088	-0.00088	-0.00088
	(A1 * !A3 * B1 * X)	0.00103	0.00102	0.00102
	(A1 * !A3 * B1 * X)	-0.00075	-0.00074	-0.00074
	(A1 * !A3 * !B1 * !X)	0.00097	0.00097	0.00098
	(A1 * !A3 * !B1 * !X)	-0.00107	-0.00109	-0.00109
	(!A1 * A3 * B1 * X)	0.00102	0.00102	0.00102
	(!A1 * A3 * B1 * X)	-0.00103	-0.00106	-0.00105
	(!A1 * A3 * !B1 * !X)	0.00097	0.00098	0.00098
	(!A1 * A3 * !B1 * !X)	-0.00107	-0.00110	-0.00109
	(!A1 * !A3 * !B1 * !X)	0.00092	0.00092	0.00092
	(!A1 * !A3 * !B1 * !X)	-0.00112	-0.00112	-0.00112

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00197	0.00201	0.00198
	(A1 * A3 * B1 * X)	-0.00159	-0.00161	-0.00159
	(A1 * A3 * !B1 * !X)	0.00196	0.00200	0.00197
	(A1 * A3 * !B1 * !X)	-0.00174	-0.00175	-0.00173
	(A1 * !A3 * B1 * X)	0.00196	0.00200	0.00197
	(A1 * !A3 * B1 * X)	-0.00151	-0.00154	-0.00153
	(A1 * !A3 * !B1 * !X)	0.00196	0.00199	0.00196
	(A1 * !A3 * !B1 * !X)	-0.00215	-0.00220	-0.00219
	(!A1 * A3 * B1 * X)	0.00197	0.00199	0.00197
	(!A1 * A3 * B1 * X)	-0.00208	-0.00216	-0.00214
	(!A1 * A3 * !B1 * !X)	0.00196	0.00198	0.00196
	(!A1 * A3 * !B1 * !X)	-0.00210	-0.00217	-0.00215
	(!A1 * !A3 * !B1 * !X)	0.00185	0.00186	0.00184
	(!A1 * !A3 * !B1 * !X)	-0.00224	-0.00226	-0.00225

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)**	-0.00091	-0.00091	-0.00091
	(A1 * A3 * B1 * X)	0.00076	0.00075	0.00075
	(A1 * A3 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * A3 * !B1 * !X)	0.00086	0.00086	0.00086
	(A1 * !A3 * B1 * X)	-0.00090	-0.00091	-0.00091
	(A1 * !A3 * B1 * X)	0.00072	0.00073	0.00073
	(A1 * !A3 * !B1 * !X)	-0.00087	-0.00086	-0.00086
	(A1 * !A3 * !B1 * !X)	0.00108	0.00108	0.00107
	(!A1 * A3 * B1 * X)	-0.00091	-0.00091	-0.00091
	(!A1 * A3 * B1 * X)	0.00104	0.00104	0.00103
	(!A1 * A3 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * A3 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A1 * !A3 * !B1 * !X)	-0.00078	-0.00080	-0.00081
	(!A1 * !A3 * !B1 * !X)	0.00111	0.00110	0.00110
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00102	-0.00101	-0.00101
	(A1 * A3 * B1 * X)	0.00078	0.00077	0.00077
	(A1 * A3 * !B1 * !X)	-0.00097	-0.00097	-0.00097
	(A1 * A3 * !B1 * !X)	0.00088	0.00088	0.00088
	(A1 * !A3 * B1 * X)	-0.00101	-0.00101	-0.00101
	(A1 * !A3 * B1 * X)	0.00075	0.00075	0.00075
	(A1 * !A3 * !B1 * !X)	-0.00097	-0.00097	-0.00097
	(A1 * !A3 * !B1 * !X)	0.00109	0.00109	0.00109
	(!A1 * A3 * B1 * X)	-0.00102	-0.00102	-0.00101
	(!A1 * A3 * B1 * X)	0.00106	0.00106	0.00105
	(!A1 * A3 * !B1 * !X)	-0.00097	-0.00098	-0.00097
	(!A1 * A3 * !B1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !A3 * !B1 * !X)	-0.00089	-0.00092	-0.00092
	(!A1 * !A3 * !B1 * !X)	0.00112	0.00112	0.00112

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00197	-0.00198	-0.00197
	(A1 * A3 * B1 * X)	0.00159	0.00161	0.00159
	(A1 * A3 * !B1 * !X)	-0.00196	-0.00197	-0.00196
	(A1 * A3 * !B1 * !X)	0.00174	0.00175	0.00173
	(A1 * !A3 * B1 * X)	-0.00196	-0.00197	-0.00196
	(A1 * !A3 * B1 * X)	0.00155	0.00157	0.00155
	(A1 * !A3 * !B1 * !X)	-0.00196	-0.00197	-0.00196
	(A1 * !A3 * !B1 * !X)	0.00218	0.00220	0.00219
	(!A1 * A3 * B1 * X)	-0.00197	-0.00198	-0.00197
	(!A1 * A3 * B1 * X)	0.00214	0.00216	0.00214
	(!A1 * A3 * !B1 * !X)	-0.00196	-0.00197	-0.00196
	(!A1 * A3 * !B1 * !X)	0.00215	0.00217	0.00215
	(!A1 * !A3 * !B1 * !X)	-0.00179	-0.00186	-0.00184
	(!A1 * !A3 * !B1 * !X)	0.00224	0.00227	0.00225

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00100	0.00099	0.00099
	(A2 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * !B1 * !X)	0.00085	0.00086	0.00086
	(A2 * !B1 * !X)	-0.00108	-0.00111	-0.00110
	(A1 * !A2 * B1 * X)	0.00100	0.00099	0.00099
	(A1 * !A2 * B1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * !A2 * !B1 * !X)	0.00086	0.00086	0.00085
	(A1 * !A2 * !B1 * !X)	-0.00101	-0.00103	-0.00103
	(!A1 * !A2 * !B1 * !X)	0.00080	0.00081	0.00080
	(!A1 * !A2 * !B1 * !X)	-0.00112	-0.00112	-0.00112

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00117	0.00116	0.00116
	(A2 * B1 * X)	-0.00068	-0.00067	-0.00067
	(A2 * !B1 * !X)	0.00100	0.00100	0.00100
	(A2 * !B1 * !X)	-0.00110	-0.00112	-0.00112
	(A1 * !A2 * B1 * X)	0.00117	0.00116	0.00116
	(A1 * !A2 * B1 * X)	-0.00068	-0.00067	-0.00067
	(A1 * !A2 * !B1 * !X)	0.00101	0.00101	0.00100
	(A1 * !A2 * !B1 * !X)	-0.00103	-0.00105	-0.00105
	(!A1 * !A2 * !B1 * !X)	0.00095	0.00095	0.00095
	(!A1 * !A2 * !B1 * !X)	-0.00114	-0.00114	-0.00114
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00198	0.00197	0.00197
	(A2 * B1 * X)	-0.00148	-0.00146	-0.00146
	(A2 * !B1 * !X)	0.00176	0.00176	0.00176
	(A2 * !B1 * !X)	-0.00221	-0.00227	-0.00226
	(A1 * !A2 * B1 * X)	0.00199	0.00197	0.00197
	(A1 * !A2 * B1 * X)	-0.00149	-0.00146	-0.00146
	(A1 * !A2 * !B1 * !X)	0.00176	0.00178	0.00176
	(A1 * !A2 * !B1 * !X)	-0.00208	-0.00213	-0.00213
	(!A1 * !A2 * !B1 * !X)	0.00163	0.00164	0.00163
	(!A1 * !A2 * !B1 * !X)	-0.00237	-0.00238	-0.00237

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00096	-0.00096	-0.00099
	(A2 * B1 * X)	0.00070	0.00070	0.00068
	(A2 * !B1 * !X)	-0.00085	-0.00086	-0.00085
	(A2 * !B1 * !X)	0.00110	0.00111	0.00110
	(A1 * !A2 * B1 * X)	-0.00090	-0.00090	-0.00098
	(A1 * !A2 * B1 * X)	0.00073	0.00073	0.00068
	(A1 * !A2 * !B1 * !X)	-0.00086	-0.00085	-0.00085
	(A1 * !A2 * !B1 * !X)	0.00103	0.00103	0.00103
	(!A1 * !A2 * !B1 * !X)	-0.00077	-0.00080	-0.00080
	(!A1 * !A2 * !B1 * !X)	0.00113	0.00112	0.00112
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00112	-0.00112	-0.00116
	(A2 * B1 * X)	0.00070	0.00070	0.00067
	(A2 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(A2 * !B1 * !X)	0.00112	0.00112	0.00112
	(A1 * !A2 * B1 * X)	-0.00106	-0.00107	-0.00114
	(A1 * !A2 * B1 * X)	0.00073	0.00073	0.00068
	(A1 * !A2 * !B1 * !X)	-0.00101	-0.00100	-0.00100
	(A1 * !A2 * !B1 * !X)	0.00105	0.00105	0.00105
	(!A1 * !A2 * !B1 * !X)	-0.00092	-0.00095	-0.00095
	(!A1 * !A2 * !B1 * !X)	0.00114	0.00114	0.00114
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00190	-0.00191	-0.00197
	(A2 * B1 * X)	0.00152	0.00152	0.00148
	(A2 * !B1 * !X)	-0.00176	-0.00176	-0.00176
	(A2 * !B1 * !X)	0.00226	0.00227	0.00226
	(A1 * !A2 * B1 * X)	-0.00175	-0.00175	-0.00194
	(A1 * !A2 * B1 * X)	0.00161	0.00161	0.00149
	(A1 * !A2 * !B1 * !X)	-0.00176	-0.00176	-0.00176
	(A1 * !A2 * !B1 * !X)	0.00213	0.00213	0.00213
	(!A1 * !A2 * !B1 * !X)	-0.00158	-0.00164	-0.00163
	(!A1 * !A2 * !B1 * !X)	0.00238	0.00238	0.00238

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)	0.00037	0.00037	0.00034
	(!A1 * !A2 * !A3 * !X)	-0.00112	-0.00112	-0.00116
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00048	0.00048	0.00044
	(!A1 * !A2 * !A3 * !X)	-0.00141	-0.00141	-0.00146
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00071	0.00071	0.00065
	(!A1 * !A2 * !A3 * !X)	-0.00264	-0.00266	-0.00275

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)	-0.00034	-0.00033	-0.00033
	(!A1 * !A2 * !A3 * !X)	0.00118	0.00117	0.00117
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !A2 * !A3 * !X)	0.00146	0.00147	0.00147
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00062	-0.00063	-0.00062
	(!A1 * !A2 * !A3 * !X)	0.00275	0.00277	0.00276

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32ai_1	11.18880
sky130_fd_sc_hs__o32ai_2	20.77920
sky130_fd_sc_hs__o32ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__o32ai_1	0.00244	0.00269	0.00265	0.00262	0.00275	0.10025
sky130_fd_sc_hs__o32ai_2	0.00511	0.00480	0.00530	0.00501	0.00515	0.18933
sky130_fd_sc_hs__o32ai_4	0.00963	0.00972	0.00999	0.01024	0.01003	0.36407

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.00014	0.00019
sky130_fd_sc_hs__o32ai_2	0.00000	0.00029	0.00039
sky130_fd_sc_hs__o32ai_4	0.00000	0.00058	0.00077

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)	0.72031	2.48536	13.56480
	A2->Y (FR)	0.69246	2.44570	13.77360
	A3->Y (FR)	0.59449	2.28594	13.21660
	B1->Y (FR)	0.25822	1.59437	10.68360
	B2->Y (FR)	0.22413	1.51094	10.35430
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.72080	2.24670	13.54530
	A2->Y (FR)	0.68432	2.19828	13.77710
	A3->Y (FR)	0.57305	2.01917	13.20360
	B1->Y (FR)	0.24916	1.46028	10.83460
	B2->Y (FR)	0.19539	1.35385	10.47140
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.70659	2.03374	13.51480
	A2->Y (FR)	0.67291	1.98813	13.76020
	A3->Y (FR)	0.55890	1.80946	13.20240
	B1->Y (FR)	0.23697	1.31615	10.77390
	B2->Y (FR)	0.18596	1.21539	10.44620

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.07066	0.56556	3.84368
	A2->Y (RF)	0.07367	0.56711	3.87370
	A3->Y (RF)	0.06676	0.55471	3.85029
	B1->Y (RF)	0.05887	0.57744	4.02632
	B2->Y (RF)	0.05349	0.56317	3.98826
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.07019	0.53143	3.81085
	A2->Y (RF)	0.07336	0.53682	3.88120
	A3->Y (RF)	0.06569	0.52245	3.85276
	B1->Y (RF)	0.05685	0.54253	4.06088
	B2->Y (RF)	0.05107	0.53006	4.06191
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.08085	0.51658	3.87269
	A2->Y (RF)	0.07690	0.50503	3.84426
	A3->Y (RF)	0.06576	0.48597	3.79996
	B1->Y (RF)	0.06644	0.55918	4.37029
	B2->Y (RF)	0.05949	0.55679	4.46417

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00114	0.00104	0.00101
	A1	0.00631	0.00622	0.00618
	A2	0.00122	0.00111	0.00106
	A2	0.00598	0.00586	0.00582
	A3	0.00121	0.00108	0.00103
	A3	0.00543	0.00530	0.00524
	B1	-0.00003	-0.00014	-0.00016
	B1	0.00436	0.00426	0.00424
	B2	0.00000	-0.00012	-0.00014
	B2	0.00390	0.00378	0.00375
sky130_fd_sc_hs__o32ai_2	A1	0.00198	0.00175	0.00167
	A1	0.01285	0.01264	0.01255
	A2	0.00212	0.00185	0.00179
	A2	0.01174	0.01146	0.01140
	A3	0.00204	0.00167	0.00161
	A3	0.01090	0.01054	0.01045
	B1	-0.00026	-0.00047	-0.00049
	B1	0.00861	0.00842	0.00841
	B2	-0.00038	-0.00060	-0.00062
	B2	0.00766	0.00742	0.00742

sky130_fd_sc_hs__o32ai_4	**A1**	0.00401	0.00355	0.00343
	A1	0.02528	0.02486	0.02471
	A2	0.00406	0.00357	0.00343
	A2	0.02342	0.02292	0.02278
	A3	0.00405	0.00336	0.00328
	A3	0.02142	0.02076	0.02058
	B1	-0.00062	-0.00106	-0.00108
	B1	0.01741	0.01695	0.01696
	B2	-0.00065	-0.00117	-0.00117
	B2	0.01532	0.01485	0.01483

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.00693	0.00685	0.00671
	A1	0.00165	0.00156	0.00146
	A2	0.00606	0.00601	0.00590
	A2	0.00114	0.00108	0.00099
	A3	0.00507	0.00506	0.00498
	A3	0.00065	0.00065	0.00057
	B1	0.00595	0.00587	0.00572
	B1	0.00168	0.00158	0.00147
	B2	0.00505	0.00500	0.00486
	B2	0.00124	0.00118	0.00107

sky130_fd_sc_hs__o32ai_2	**A1**	0.01432	0.01414	0.01380
	A1	0.00324	0.00305	0.00282
	A2	0.01239	0.01226	0.01202
	A2	0.00246	0.00231	0.00212
	A3	0.01046	0.01042	0.01028
	A3	0.00119	0.00117	0.00102
	B1	0.01199	0.01177	0.01148
	B1	0.00339	0.00316	0.00294
	B2	0.01009	0.00998	0.00973
	B2	0.00224	0.00211	0.00193
sky130_fd_sc_hs__o32ai_4	**A1**	0.02788	0.02752	0.02693
	A1	0.00620	0.00580	0.00538
	A2	0.02432	0.02399	0.02361
	A2	0.00434	0.00402	0.00369
	A3	0.02024	0.02014	0.01989
	A3	0.00208	0.00194	0.00176
	B1	0.02382	0.02333	0.02287
	B1	0.00637	0.00587	0.00547
	B2	0.01984	0.01960	0.01929
	B2	0.00425	0.00400	0.00368

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)**	0.00105	0.00106	0.00105
	(A2 * A3 * B2 * !Y)	-0.00118	-0.00121	-0.00120
	(A2 * A3 * B1 * !B2 * !Y)	0.00105	0.00106	0.00105
	(A2 * A3 * B1 * !B2 * !Y)	-0.00118	-0.00121	-0.00120
	(A2 * !B1 * !B2 * Y)	0.00105	0.00106	0.00105
	(A2 * !B1 * !B2 * Y)	-0.00118	-0.00121	-0.00120
	(A2 * !A3 * B2 * !Y)	0.00105	0.00106	0.00105
	(A2 * !A3 * B2 * !Y)	-0.00118	-0.00121	-0.00120
	(A2 * !A3 * B1 * !B2 * !Y)	0.00105	0.00106	0.00105
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00118	-0.00121	-0.00120
	(!A2 * A3 * B2 * !Y)	0.00105	0.00105	0.00105
	(!A2 * A3 * B2 * !Y)	-0.00111	-0.00114	-0.00114
	(!A2 * A3 * B1 * !B2 * !Y)	0.00105	0.00105	0.00105
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00111	-0.00114	-0.00114
	(!A2 * A3 * !B1 * !B2 * Y)	0.00105	0.00105	0.00105
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00111	-0.00114	-0.00114
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00099	0.00100	0.00099
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00122	-0.00123	-0.00122

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00217	0.00219	0.00217
	(A2 * A3 * B2 * !Y)	-0.00244	-0.00251	-0.00249
	(A2 * A3 * B1 * !B2 * !Y)	0.00217	0.00219	0.00217
	(A2 * A3 * B1 * !B2 * !Y)	-0.00244	-0.00251	-0.00249
	(A2 * !B1 * !B2 * Y)	0.00217	0.00219	0.00217
	(A2 * !B1 * !B2 * Y)	-0.00244	-0.00251	-0.00249
	(A2 * !A3 * B2 * !Y)	0.00217	0.00219	0.00217
	(A2 * !A3 * B2 * !Y)	-0.00244	-0.00251	-0.00249
	(A2 * !A3 * B1 * !B2 * !Y)	0.00217	0.00219	0.00217
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00244	-0.00251	-0.00249
	(!A2 * A3 * B2 * !Y)	0.00219	0.00218	0.00218
	(!A2 * A3 * B2 * !Y)	-0.00231	-0.00237	-0.00238
	(!A2 * A3 * B1 * !B2 * !Y)	0.00219	0.00218	0.00218
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00231	-0.00237	-0.00238
	(!A2 * A3 * !B1 * !B2 * Y)	0.00218	0.00217	0.00217
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00232	-0.00238	-0.00238
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00201	0.00202	0.00201
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00259	-0.00260	-0.00259

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00406	0.00412	0.00408
	(A2 * A3 * B2 * !Y)	-0.00471	-0.00489	-0.00484
	(A2 * A3 * B1 * !B2 * !Y)	0.00406	0.00412	0.00408
	(A2 * A3 * B1 * !B2 * !Y)	-0.00471	-0.00489	-0.00484
	(A2 * !B1 * !B2 * Y)	0.00406	0.00412	0.00408
	(A2 * !B1 * !B2 * Y)	-0.00471	-0.00489	-0.00484
	(A2 * !A3 * B2 * !Y)	0.00406	0.00412	0.00408
	(A2 * !A3 * B2 * !Y)	-0.00471	-0.00489	-0.00484
	(A2 * !A3 * B1 * !B2 * !Y)	0.00406	0.00412	0.00408
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00471	-0.00489	-0.00484
	(!A2 * A3 * B2 * !Y)	0.00410	0.00410	0.00408
	(!A2 * A3 * B2 * !Y)	-0.00449	-0.00460	-0.00461
	(!A2 * A3 * B1 * !B2 * !Y)	0.00410	0.00410	0.00408
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00449	-0.00460	-0.00461
	(!A2 * A3 * !B1 * !B2 * Y)	0.00409	0.00409	0.00408
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00451	-0.00462	-0.00462
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00380	0.00381	0.00379
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00504	-0.00505	-0.00503

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)**	-0.00105	-0.00105	-0.00105
	(A2 * A3 * B2 * !Y)	0.00121	0.00121	0.00120
	(A2 * A3 * B1 * !B2 * !Y)	-0.00105	-0.00105	-0.00105
	(A2 * A3 * B1 * !B2 * !Y)	0.00121	0.00121	0.00120
	(A2 * !B1 * !B2 * Y)	-0.00105	-0.00105	-0.00105
	(A2 * !B1 * !B2 * Y)	0.00121	0.00121	0.00120
	(A2 * !A3 * B2 * !Y)	-0.00105	-0.00105	-0.00105
	(A2 * !A3 * B2 * !Y)	0.00121	0.00121	0.00120
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00105	-0.00105	-0.00105
	(A2 * !A3 * B1 * !B2 * !Y)	0.00121	0.00121	0.00120
	(!A2 * A3 * B2 * !Y)	-0.00105	-0.00105	-0.00105
	(!A2 * A3 * B2 * !Y)	0.00114	0.00114	0.00114
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00105	-0.00105	-0.00105
	(!A2 * A3 * B1 * !B2 * !Y)	0.00114	0.00114	0.00114
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00105	-0.00105	-0.00105
	(!A2 * A3 * !B1 * !B2 * Y)	0.00115	0.00114	0.00114
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00096	-0.00099	-0.00099
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00123	0.00123	0.00123

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00217	-0.00218	-0.00217
	(A2 * A3 * B2 * !Y)	0.00251	0.00251	0.00249
	(A2 * A3 * B1 * !B2 * !Y)	-0.00217	-0.00218	-0.00217
	(A2 * A3 * B1 * !B2 * !Y)	0.00251	0.00251	0.00249
	(A2 * !B1 * !B2 * Y)	-0.00217	-0.00218	-0.00217
	(A2 * !B1 * !B2 * Y)	0.00251	0.00251	0.00249
	(A2 * !A3 * B2 * !Y)	-0.00217	-0.00218	-0.00217
	(A2 * !A3 * B2 * !Y)	0.00251	0.00251	0.00249
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00217	-0.00218	-0.00217
	(A2 * !A3 * B1 * !B2 * !Y)	0.00251	0.00251	0.00249
	(!A2 * A3 * B2 * !Y)	-0.00218	-0.00217	-0.00217
	(!A2 * A3 * B2 * !Y)	0.00239	0.00237	0.00238
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00218	-0.00217	-0.00217
	(!A2 * A3 * B1 * !B2 * !Y)	0.00239	0.00237	0.00238
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00216	-0.00216	-0.00217
	(!A2 * A3 * !B1 * !B2 * Y)	0.00238	0.00238	0.00238
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00194	-0.00202	-0.00201
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00262	0.00261	0.00260

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00406	-0.00409	-0.00407
	(A2 * A3 * B2 * !Y)	0.00488	0.00489	0.00484
	(A2 * A3 * B1 * !B2 * !Y)	-0.00406	-0.00409	-0.00407
	(A2 * A3 * B1 * !B2 * !Y)	0.00488	0.00489	0.00484
	(A2 * !B1 * !B2 * Y)	-0.00406	-0.00409	-0.00407
	(A2 * !B1 * !B2 * Y)	0.00483	0.00489	0.00484
	(A2 * !A3 * B2 * !Y)	-0.00406	-0.00409	-0.00407
	(A2 * !A3 * B2 * !Y)	0.00488	0.00489	0.00484
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00406	-0.00409	-0.00407
	(A2 * !A3 * B1 * !B2 * !Y)	0.00488	0.00489	0.00484
	(!A2 * A3 * B2 * !Y)	-0.00408	-0.00408	-0.00408
	(!A2 * A3 * B2 * !Y)	0.00461	0.00460	0.00461
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00407	-0.00408	-0.00408
	(!A2 * A3 * B1 * !B2 * !Y)	0.00461	0.00460	0.00461
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00406	-0.00407	-0.00407
	(!A2 * A3 * !B1 * !B2 * Y)	0.00461	0.00462	0.00462
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00367	-0.00381	-0.00379
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00507	0.00507	0.00504

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)**	0.00102	0.00102	0.00102
	(A1 * A3 * B2 * !Y)	-0.00094	-0.00093	-0.00093
	(A1 * A3 * B1 * !B2 * !Y)	0.00102	0.00102	0.00102
	(A1 * A3 * B1 * !B2 * !Y)	-0.00094	-0.00093	-0.00093
	(A1 * A3 * !B1 * !B2 * Y)	0.00102	0.00101	0.00101
	(A1 * A3 * !B1 * !B2 * Y)	-0.00101	-0.00101	-0.00101
	(A1 * !A3 * B2 * !Y)	0.00104	0.00103	0.00102
	(A1 * !A3 * B2 * !Y)	-0.00090	-0.00089	-0.00089
	(A1 * !A3 * B1 * !B2 * !Y)	0.00104	0.00103	0.00102
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00090	-0.00089	-0.00089
	(A1 * !A3 * !B1 * !B2 * Y)	0.00101	0.00102	0.00101
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00123	-0.00126	-0.00125
	(!A1 * A3 * B2 * !Y)	0.00102	0.00103	0.00102
	(!A1 * A3 * B2 * !Y)	-0.00122	-0.00125	-0.00124
	(!A1 * A3 * B1 * !B2 * !Y)	0.00102	0.00103	0.00102
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00122	-0.00125	-0.00124
	(!A1 * A3 * !B1 * !B2 * Y)	0.00101	0.00102	0.00101
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00123	-0.00127	-0.00125
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00094	0.00095	0.00094
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00129	-0.00129	-0.00129

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00202	0.00202	0.00202
	(A1 * A3 * B2 * !Y)	-0.00175	-0.00174	-0.00173
	(A1 * A3 * B1 * !B2 * !Y)	0.00202	0.00203	0.00202
	(A1 * A3 * B1 * !B2 * !Y)	-0.00175	-0.00174	-0.00173
	(A1 * A3 * !B1 * !B2 * Y)	0.00198	0.00199	0.00198
	(A1 * A3 * !B1 * !B2 * Y)	-0.00192	-0.00193	-0.00192
	(A1 * !A3 * B2 * !Y)	0.00201	0.00201	0.00201
	(A1 * !A3 * B2 * !Y)	-0.00165	-0.00166	-0.00166
	(A1 * !A3 * B1 * !B2 * !Y)	0.00201	0.00201	0.00201
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00165	-0.00166	-0.00166
	(A1 * !A3 * !B1 * !B2 * Y)	0.00197	0.00201	0.00198
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00233	-0.00239	-0.00238
	(!A1 * A3 * B2 * !Y)	0.00202	0.00202	0.00201
	(!A1 * A3 * B2 * !Y)	-0.00233	-0.00240	-0.00238
	(!A1 * A3 * B1 * !B2 * !Y)	0.00202	0.00202	0.00201
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00233	-0.00240	-0.00238
	(!A1 * A3 * !B1 * !B2 * Y)	0.00197	0.00199	0.00198
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00238	-0.00244	-0.00242
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00182	0.00182	0.00183
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00247	-0.00248	-0.00248

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00413	0.00415	0.00413
	(A1 * A3 * B2 * !Y)	-0.00353	-0.00353	-0.00353
	(A1 * A3 * B1 * !B2 * !Y)	0.00413	0.00415	0.00413
	(A1 * A3 * B1 * !B2 * !Y)	-0.00353	-0.00353	-0.00353
	(A1 * A3 * !B1 * !B2 * Y)	0.00405	0.00408	0.00408
	(A1 * A3 * !B1 * !B2 * Y)	-0.00386	-0.00386	-0.00386
	(A1 * !A3 * B2 * !Y)	0.00418	0.00413	0.00412
	(A1 * !A3 * B2 * !Y)	-0.00342	-0.00338	-0.00339
	(A1 * !A3 * B1 * !B2 * !Y)	0.00419	0.00413	0.00412
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00343	-0.00338	-0.00339
	(A1 * !A3 * !B1 * !B2 * Y)	0.00408	0.00415	0.00408
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00471	-0.00483	-0.00480
	(!A1 * A3 * B2 * !Y)	0.00414	0.00415	0.00412
	(!A1 * A3 * B2 * !Y)	-0.00476	-0.00490	-0.00486
	(!A1 * A3 * B1 * !B2 * !Y)	0.00414	0.00415	0.00412
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00476	-0.00490	-0.00486
	(!A1 * A3 * !B1 * !B2 * Y)	0.00408	0.00410	0.00408
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00483	-0.00495	-0.00491
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00378	0.00382	0.00379
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00503	-0.00506	-0.00504

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)**	-0.00102	-0.00102	-0.00102
	(A1 * A3 * B2 * !Y)	0.00094	0.00093	0.00093
	(A1 * A3 * B1 * !B2 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * A3 * B1 * !B2 * !Y)	0.00094	0.00093	0.00093
	(A1 * A3 * !B1 * !B2 * Y)	-0.00101	-0.00101	-0.00101
	(A1 * A3 * !B1 * !B2 * Y)	0.00101	0.00101	0.00101
	(A1 * !A3 * B2 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * !A3 * B2 * !Y)	0.00090	0.00090	0.00090
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00102	-0.00102	-0.00102
	(A1 * !A3 * B1 * !B2 * !Y)	0.00090	0.00090	0.00090
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00101	-0.00101	-0.00101
	(A1 * !A3 * !B1 * !B2 * Y)	0.00126	0.00126	0.00125
	(!A1 * A3 * B2 * !Y)	-0.00102	-0.00103	-0.00102
	(!A1 * A3 * B2 * !Y)	0.00125	0.00125	0.00124
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00102	-0.00103	-0.00102
	(!A1 * A3 * B1 * !B2 * !Y)	0.00125	0.00125	0.00124
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00101	-0.00102	-0.00101
	(!A1 * A3 * !B1 * !B2 * Y)	0.00125	0.00127	0.00125
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00091	-0.00095	-0.00094
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00129	0.00129	0.00129

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00201	-0.00201	-0.00201
	(A1 * A3 * B2 * !Y)	0.00175	0.00174	0.00173
	(A1 * A3 * B1 * !B2 * !Y)	-0.00201	-0.00201	-0.00201
	(A1 * A3 * B1 * !B2 * !Y)	0.00175	0.00174	0.00173
	(A1 * A3 * !B1 * !B2 * Y)	-0.00197	-0.00197	-0.00197
	(A1 * A3 * !B1 * !B2 * Y)	0.00192	0.00193	0.00192
	(A1 * !A3 * B2 * !Y)	-0.00200	-0.00200	-0.00200
	(A1 * !A3 * B2 * !Y)	0.00168	0.00168	0.00169
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00200	-0.00200	-0.00200
	(A1 * !A3 * B1 * !B2 * !Y)	0.00168	0.00168	0.00169
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00197	-0.00198	-0.00197
	(A1 * !A3 * !B1 * !B2 * Y)	0.00237	0.00239	0.00238
	(!A1 * A3 * B2 * !Y)	-0.00201	-0.00202	-0.00201
	(!A1 * A3 * B2 * !Y)	0.00237	0.00240	0.00238
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00201	-0.00202	-0.00201
	(!A1 * A3 * B1 * !B2 * !Y)	0.00237	0.00240	0.00238
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00197	-0.00198	-0.00197
	(!A1 * A3 * !B1 * !B2 * Y)	0.00241	0.00244	0.00242
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00177	-0.00182	-0.00183
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00250	0.00250	0.00248

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00411	-0.00411	-0.00411
	(A1 * A3 * B2 * !Y)	0.00353	0.00353	0.00353
	(A1 * A3 * B1 * !B2 * !Y)	-0.00411	-0.00411	-0.00411
	(A1 * A3 * B1 * !B2 * !Y)	0.00353	0.00353	0.00353
	(A1 * A3 * !B1 * !B2 * Y)	-0.00405	-0.00407	-0.00407
	(A1 * A3 * !B1 * !B2 * Y)	0.00386	0.00386	0.00386
	(A1 * !A3 * B2 * !Y)	-0.00410	-0.00410	-0.00410
	(A1 * !A3 * B2 * !Y)	0.00342	0.00342	0.00344
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00411	-0.00410	-0.00410
	(A1 * !A3 * B1 * !B2 * !Y)	0.00343	0.00342	0.00344
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00404	-0.00409	-0.00407
	(A1 * !A3 * !B1 * !B2 * Y)	0.00476	0.00483	0.00480
	(!A1 * A3 * B2 * !Y)	-0.00411	-0.00414	-0.00412
	(!A1 * A3 * B2 * !Y)	0.00484	0.00490	0.00486
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00411	-0.00414	-0.00412
	(!A1 * A3 * B1 * !B2 * !Y)	0.00485	0.00490	0.00486
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00407	-0.00409	-0.00407
	(!A1 * A3 * !B1 * !B2 * Y)	0.00490	0.00495	0.00491
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00365	-0.00382	-0.00379
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00506	0.00507	0.00505

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00110	0.00110	0.00110
	(A2 * B2 * !Y)	-0.00075	-0.00075	-0.00075
	(A2 * B1 * !B2 * !Y)	0.00110	0.00110	0.00110
	(A2 * B1 * !B2 * !Y)	-0.00075	-0.00075	-0.00075
	(A2 * !B1 * !B2 * Y)	0.00100	0.00101	0.00101
	(A2 * !B1 * !B2 * Y)	-0.00115	-0.00118	-0.00117
	(A1 * !A2 * B2 * !Y)	0.00110	0.00110	0.00110
	(A1 * !A2 * B2 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * B1 * !B2 * !Y)	0.00110	0.00110	0.00110
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * !B1 * !B2 * Y)	0.00100	0.00102	0.00100
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00108	-0.00109	-0.00110
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00093	0.00094	0.00093
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00121	-0.00121	-0.00121
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00243	0.00243	0.00243
	(A2 * B2 * !Y)	-0.00149	-0.00148	-0.00148
	(A2 * B1 * !B2 * !Y)	0.00243	0.00243	0.00243
	(A2 * B1 * !B2 * !Y)	-0.00149	-0.00148	-0.00148
	(A2 * !B1 * !B2 * Y)	0.00196	0.00196	0.00196
	(A2 * !B1 * !B2 * Y)	-0.00257	-0.00261	-0.00260
	(A1 * !A2 * B2 * !Y)	0.00243	0.00243	0.00243
	(A1 * !A2 * B2 * !Y)	-0.00148	-0.00148	-0.00148
	(A1 * !A2 * B1 * !B2 * !Y)	0.00243	0.00243	0.00243
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00148	-0.00148	-0.00148
	(A1 * !A2 * !B1 * !B2 * Y)	0.00198	0.00196	0.00196
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00241	-0.00244	-0.00243
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00183	0.00184	0.00183
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00267	-0.00268	-0.00267

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00459	0.00460	0.00460
	(A2 * B2 * !Y)	-0.00293	-0.00293	-0.00293
	(A2 * B1 * !B2 * !Y)	0.00460	0.00460	0.00460
	(A2 * B1 * !B2 * !Y)	-0.00294	-0.00293	-0.00293
	(A2 * !B1 * !B2 * Y)	0.00382	0.00382	0.00383
	(A2 * !B1 * !B2 * Y)	-0.00493	-0.00499	-0.00500
	(A1 * !A2 * B2 * !Y)	0.00458	0.00461	0.00460
	(A1 * !A2 * B2 * !Y)	-0.00292	-0.00294	-0.00292
	(A1 * !A2 * B1 * !B2 * !Y)	0.00459	0.00462	0.00460
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00293	-0.00294	-0.00292
	(A1 * !A2 * !B1 * !B2 * Y)	0.00385	0.00389	0.00383
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00462	-0.00467	-0.00466
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00354	0.00359	0.00357
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00513	-0.00517	-0.00515

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00107	-0.00107	-0.00110
	(A2 * B2 * !Y)	0.00078	0.00078	0.00075
	(A2 * B1 * !B2 * !Y)	-0.00107	-0.00107	-0.00110
	(A2 * B1 * !B2 * !Y)	0.00078	0.00078	0.00075
	(A2 * !B1 * !B2 * Y)	-0.00100	-0.00101	-0.00100
	(A2 * !B1 * !B2 * Y)	0.00118	0.00118	0.00117
	(A1 * !A2 * B2 * !Y)	-0.00099	-0.00100	-0.00109
	(A1 * !A2 * B2 * !Y)	0.00083	0.00082	0.00076
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00100	-0.00100	-0.00109
	(A1 * !A2 * B1 * !B2 * !Y)	0.00083	0.00082	0.00076
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * !B1 * !B2 * Y)	0.00109	0.00109	0.00110
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00090	-0.00094	-0.00093
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00121	0.00121	0.00121
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00233	-0.00234	-0.00243
	(A2 * B2 * !Y)	0.00159	0.00158	0.00150
	(A2 * B1 * !B2 * !Y)	-0.00232	-0.00234	-0.00243
	(A2 * B1 * !B2 * !Y)	0.00157	0.00158	0.00150
	(A2 * !B1 * !B2 * Y)	-0.00196	-0.00196	-0.00196
	(A2 * !B1 * !B2 * Y)	0.00259	0.00261	0.00260
	(A1 * !A2 * B2 * !Y)	-0.00218	-0.00218	-0.00239
	(A1 * !A2 * B2 * !Y)	0.00167	0.00166	0.00151
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00216	-0.00218	-0.00239
	(A1 * !A2 * B1 * !B2 * !Y)	0.00165	0.00166	0.00151
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00196	-0.00196	-0.00196
	(A1 * !A2 * !B1 * !B2 * Y)	0.00242	0.00244	0.00243
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00177	-0.00184	-0.00183
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00269	0.00268	0.00267

sky130_fd_sc_hs__o32ai_4	(A2 * B2 * !Y)	-0.00443	-0.00444	-0.00459
	(A2 * B2 * !Y)	0.00312	0.00310	0.00297
	(A2 * B1 * !B2 * !Y)	-0.00439	-0.00445	-0.00459
	(A2 * B1 * !B2 * !Y)	0.00308	0.00311	0.00297
	(A2 * !B1 * !B2 * Y)	-0.00382	-0.00381	-0.00382
	(A2 * !B1 * !B2 * Y)	0.00500	0.00499	0.00500
	(A1 * !A2 * B2 * !Y)	-0.00408	-0.00413	-0.00453
	(A1 * !A2 * B2 * !Y)	0.00325	0.00327	0.00298
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00408	-0.00412	-0.00453
	(A1 * !A2 * B1 * !B2 * !Y)	0.00326	0.00327	0.00298
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00382	-0.00383	-0.00382
	(A1 * !A2 * !B1 * !B2 * Y)	0.00465	0.00467	0.00466
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00346	-0.00359	-0.00357
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00517	0.00517	0.00515

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B2 * !Y)	0.00112	0.00113	0.00112
	(A3 * B2 * !Y)	-0.00115	-0.00119	-0.00118
	(A2 * !A3 * B2 * !Y)	0.00112	0.00113	0.00112
	(A2 * !A3 * B2 * !Y)	-0.00115	-0.00119	-0.00118
	(A1 * !A2 * !A3 * B2 * !Y)	0.00112	0.00113	0.00112
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00115	-0.00119	-0.00118
	(!A1 * !A2 * !A3 * B2 * Y)	0.00044	0.00044	0.00044
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00141	-0.00144	-0.00143
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00050	0.00050	0.00046
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00138	-0.00139	-0.00146

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00206	0.00205	0.00203
	(A3 * B2 * !Y)	-0.00229	-0.00235	-0.00233
	(A2 * !A3 * B2 * !Y)	0.00206	0.00205	0.00203
	(A2 * !A3 * B2 * !Y)	-0.00229	-0.00235	-0.00233
	(A1 * !A2 * !A3 * B2 * !Y)	0.00206	0.00205	0.00203
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00229	-0.00233	-0.00233
	(!A1 * !A2 * !A3 * B2 * Y)	0.00071	0.00071	0.00070
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00281	-0.00286	-0.00284
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00083	0.00083	0.00074
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00273	-0.00276	-0.00289
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00430	0.00431	0.00427
	(A3 * B2 * !Y)	-0.00456	-0.00466	-0.00467
	(A2 * !A3 * B2 * !Y)	0.00430	0.00431	0.00427
	(A2 * !A3 * B2 * !Y)	-0.00456	-0.00470	-0.00467
	(A1 * !A2 * !A3 * B2 * !Y)	0.00430	0.00431	0.00427
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00456	-0.00469	-0.00467
	(!A1 * !A2 * !A3 * B2 * Y)	0.00142	0.00143	0.00141
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00582	-0.00595	-0.00591
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00166	0.00166	0.00149
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00570	-0.00575	-0.00601

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00112	-0.00113	-0.00112
	(A3 * B2 * !Y)	0.00118	0.00119	0.00118
	(A2 * !A3 * B2 * !Y)	-0.00112	-0.00113	-0.00112
	(A2 * !A3 * B2 * !Y)	0.00117	0.00119	0.00118
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00112	-0.00113	-0.00112
	(A1 * !A2 * !A3 * B2 * !Y)	0.00118	0.00119	0.00118
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !A3 * B2 * Y)	0.00145	0.00144	0.00143
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00146	0.00146	0.00146
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00204	-0.00204	-0.00203
	(A3 * B2 * !Y)	0.00233	0.00235	0.00233
	(A2 * !A3 * B2 * !Y)	-0.00204	-0.00204	-0.00203
	(A2 * !A3 * B2 * !Y)	0.00233	0.00235	0.00233
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00203	-0.00204	-0.00203
	(A1 * !A2 * !A3 * B2 * !Y)	0.00232	0.00233	0.00233
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00071	-0.00071	-0.00070
	(!A1 * !A2 * !A3 * B2 * Y)	0.00286	0.00287	0.00284
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00071	-0.00071	-0.00071
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00289	0.00290	0.00290
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00427	-0.00427	-0.00427
	(A3 * B2 * !Y)	0.00466	0.00466	0.00467
	(A2 * !A3 * B2 * !Y)	-0.00427	-0.00429	-0.00427
	(A2 * !A3 * B2 * !Y)	0.00466	0.00470	0.00467
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00429	-0.00429	-0.00427
	(A1 * !A2 * !A3 * B2 * !Y)	0.00471	0.00469	0.00467
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00142	-0.00143	-0.00141
	(!A1 * !A2 * !A3 * B2 * Y)	0.00594	0.00596	0.00591
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00143	-0.00143	-0.00143
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00601	0.00603	0.00603

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00118	0.00118	0.00118
	(A3 * B1 * !Y)	-0.00073	-0.00073	-0.00073
	(A2 * !A3 * B1 * !Y)	0.00119	0.00118	0.00118
	(A2 * !A3 * B1 * !Y)	-0.00074	-0.00073	-0.00073
	(A1 * !A2 * !A3 * B1 * !Y)	0.00118	0.00118	0.00118
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00073	-0.00073	-0.00073
	(!A1 * !A2 * !A3 * B1 * Y)	0.00037	0.00038	0.00037
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00143	-0.00146	-0.00145
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00043	0.00043	0.00039
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00140	-0.00141	-0.00148
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00230	0.00231	0.00231
	(A3 * B1 * !Y)	-0.00149	-0.00149	-0.00149
	(A2 * !A3 * B1 * !Y)	0.00229	0.00231	0.00231
	(A2 * !A3 * B1 * !Y)	-0.00149	-0.00149	-0.00149
	(A1 * !A2 * !A3 * B1 * !Y)	0.00231	0.00231	0.00231
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00151	-0.00150	-0.00149
	(!A1 * !A2 * !A3 * B1 * Y)	0.00075	0.00075	0.00074
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00287	-0.00290	-0.00288
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00086	0.00086	0.00078
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00279	-0.00280	-0.00295

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00450	0.00454	0.00452
	(A3 * B1 * !Y)	-0.00295	-0.00297	-0.00295
	(A2 * !A3 * B1 * !Y)	0.00453	0.00453	0.00452
	(A2 * !A3 * B1 * !Y)	-0.00300	-0.00297	-0.00295
	(A1 * !A2 * !A3 * B1 * !Y)	0.00453	0.00453	0.00452
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00299	-0.00297	-0.00295
	(!A1 * !A2 * !A3 * B1 * Y)	0.00143	0.00145	0.00143
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00564	-0.00574	-0.00570
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00166	0.00167	0.00150
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00552	-0.00558	-0.00585

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00114	-0.00115	-0.00118
	(A3 * B1 * !Y)	0.00075	0.00076	0.00073
	(A2 * !A3 * B1 * !Y)	-0.00114	-0.00115	-0.00118
	(A2 * !A3 * B1 * !Y)	0.00075	0.00076	0.00073
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00115	-0.00115	-0.00118
	(A1 * !A2 * !A3 * B1 * !Y)	0.00076	0.00076	0.00073
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00037	-0.00038	-0.00037
	(!A1 * !A2 * !A3 * B1 * Y)	0.00145	0.00146	0.00145
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00148	0.00149	0.00148

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00220	-0.00222	-0.00230
	(A3 * B1 * !Y)	0.00159	0.00159	0.00151
	(A2 * !A3 * B1 * !Y)	-0.00220	-0.00222	-0.00230
	(A2 * !A3 * B1 * !Y)	0.00158	0.00159	0.00151
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00221	-0.00222	-0.00230
	(A1 * !A2 * !A3 * B1 * !Y)	0.00160	0.00159	0.00151
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00075	-0.00075	-0.00074
	(!A1 * !A2 * !A3 * B1 * Y)	0.00290	0.00290	0.00288
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00075	-0.00075	-0.00075
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00295	0.00297	0.00296
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00434	-0.00437	-0.00452
	(A3 * B1 * !Y)	0.00312	0.00313	0.00299
	(A2 * !A3 * B1 * !Y)	-0.00433	-0.00437	-0.00452
	(A2 * !A3 * B1 * !Y)	0.00311	0.00313	0.00299
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00435	-0.00438	-0.00452
	(A1 * !A2 * !A3 * B1 * !Y)	0.00313	0.00313	0.00300
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00143	-0.00144	-0.00143
	(!A1 * !A2 * !A3 * B1 * Y)	0.00574	0.00574	0.00570
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00145	-0.00145	-0.00144
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00586	0.00589	0.00587

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32a_1	12.78720
sky130_fd_sc_hs__o32a_2	15.98400
sky130_fd_sc_hs__o32a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__o32a_1	0.00243	0.00236	0.00236	0.00239	0.00246	0.35642
sky130_fd_sc_hs__o32a_2	0.00255	0.00250	0.00257	0.00279	0.00262	0.70921
sky130_fd_sc_hs__o32a_4	0.00430	0.00463	0.00437	0.00593	0.00470	1.40284

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.00022	0.00027
sky130_fd_sc_hs__o32a_2	0.00000	0.00028	0.00037
sky130_fd_sc_hs__o32a_4	0.00000	0.00056	0.00073

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)	0.20140	1.24598	9.00665
	A2->X (RR)	0.19857	1.23937	8.95934
	A3->X (RR)	0.18801	1.22071	8.88080
	B1->X (RR)	0.18686	1.22589	8.75400
	B2->X (RR)	0.17766	1.20654	8.66968
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.20165	1.10182	9.06811
	A2->X (RR)	0.20067	1.09807	9.03590
	A3->X (RR)	0.19115	1.08381	8.97792
	B1->X (RR)	0.18808	1.09800	8.89029
	B2->X (RR)	0.17828	1.07848	8.81828
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.22086	1.02080	9.26748
	A2->X (RR)	0.21225	1.00642	9.21110
	A3->X (RR)	0.19767	0.98453	9.12304
	B1->X (RR)	0.20950	1.02654	9.09775
	B2->X (RR)	0.19299	0.99636	8.99632

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.88695	1.74485	7.52732
	A2->X (FF)	0.84651	1.70154	7.62416
	A3->X (FF)	0.75581	1.54571	7.03426
	B1->X (FF)	0.41979	1.25776	6.90051
	B2->X (FF)	0.38215	1.16850	6.44659
sky130_fd_sc_hs__o32a_2	A1->X (FF)	1.17883	2.05238	8.07380
	A2->X (FF)	1.13995	2.00985	8.22235
	A3->X (FF)	1.05292	1.85386	7.68605
	B1->X (FF)	0.58742	1.42383	7.39330
	B2->X (FF)	0.54564	1.33007	6.97203
sky130_fd_sc_hs__o32a_4	A1->X (FF)	1.10936	1.94439	8.04002
	A2->X (FF)	1.07285	1.89510	8.15159
	A3->X (FF)	0.94404	1.70037	7.55624
	B1->X (FF)	0.53239	1.33122	7.34442
	B2->X (FF)	0.47863	1.22688	6.88835

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.00877	0.00871	0.00858
	A1	0.00379	0.00373	0.00362
	A2	0.00795	0.00797	0.00789
	A2	0.00343	0.00345	0.00340
	A3	0.00708	0.00711	0.00700
	A3	0.00294	0.00296	0.00288
	B1	0.00788	0.00780	0.00767
	B1	0.00375	0.00369	0.00356
	B2	0.00698	0.00689	0.00674
	B2	0.00331	0.00323	0.00309
sky130_fd_sc_hs__o32a_2	A1	0.01090	0.01098	0.01091
	A1	0.00551	0.00560	0.00558
	A2	0.01008	0.01026	0.01025
	A2	0.00515	0.00533	0.00534
	A3	0.00925	0.00943	0.00939
	A3	0.00467	0.00485	0.00486
	B1	0.00998	0.01002	0.00992
	B1	0.00538	0.00544	0.00540
	B2	0.00899	0.00901	0.00891
	B2	0.00506	0.00509	0.00502

sky130_fd_sc_hs__o32a_4	**A1**	0.02084	0.02116	0.02129
	A1	0.01121	0.01154	0.01181
	A2	0.01929	0.01961	0.01968
	A2	0.01024	0.01057	0.01078
	A3	0.01697	0.01735	0.01736
	A3	0.00903	0.00942	0.00944
	B1	0.01964	0.01980	0.01979
	B1	0.01092	0.01109	0.01116
	B2	0.01731	0.01751	0.01748
	B2	0.01016	0.01037	0.01044

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00313	0.00311	0.00307
	A1	0.00797	0.00796	0.00789
	A2	0.00305	0.00307	0.00379
	A2	0.00750	0.00752	0.00746
	A3	0.00303	0.00304	0.00361
	A3	0.00708	0.00709	0.00702
	B1	0.00215	0.00216	0.00274
	B1	0.00636	0.00638	0.00634
	B2	0.00222	0.00217	0.00251
	B2	0.00592	0.00587	0.00586

sky130_fd_sc_hs__o32a_2	**A1**	0.00509	0.00526	0.00627
	A1	0.01046	0.01062	0.01062
	A2	0.00524	0.00541	0.00544
	A2	0.01002	0.01018	0.01018
	A3	0.00510	0.00525	0.00606
	A3	0.00962	0.00977	0.00976
	B1	0.00409	0.00428	0.00671
	B1	0.00875	0.00894	0.00893
	B2	0.00414	0.00429	0.00538
	B2	0.00816	0.00829	0.00831
sky130_fd_sc_hs__o32a_4	**A1**	0.00918	0.00970	0.01093
	A1	0.01879	0.01932	0.01952
	A2	0.00915	0.00967	0.01089
	A2	0.01812	0.01862	0.01879
	A3	0.00918	0.00961	0.01322
	A3	0.01695	0.01739	0.01753
	B1	0.00750	0.00790	0.01174
	B1	0.01645	0.01687	0.01686
	B2	0.00751	0.00780	0.00896
	B2	0.01485	0.01515	0.01524

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)**	0.00100	0.00101	0.00100
	(A2 * A3 * B2 * X)	-0.00104	-0.00106	-0.00106
	(A2 * A3 * B1 * !B2 * X)	0.00100	0.00101	0.00100
	(A2 * A3 * B1 * !B2 * X)	-0.00104	-0.00106	-0.00106
	(A2 * !B1 * !B2 * !X)	0.00085	0.00086	0.00085
	(A2 * !B1 * !B2 * !X)	-0.00120	-0.00121	-0.00121
	(A2 * !A3 * B2 * X)	0.00100	0.00101	0.00100
	(A2 * !A3 * B2 * X)	-0.00104	-0.00106	-0.00106
	(A2 * !A3 * B1 * !B2 * X)	0.00100	0.00101	0.00100
	(A2 * !A3 * B1 * !B2 * X)	-0.00104	-0.00106	-0.00106
	(!A2 * A3 * B2 * X)	0.00100	0.00100	0.00100
	(!A2 * A3 * B2 * X)	-0.00098	-0.00101	-0.00101
	(!A2 * A3 * B1 * !B2 * X)	0.00100	0.00100	0.00100
	(!A2 * A3 * B1 * !B2 * X)	-0.00098	-0.00101	-0.00101
	(!A2 * A3 * !B1 * !B2 * !X)	0.00085	0.00085	0.00085
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00113	-0.00116	-0.00116
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00080	0.00079	0.00080
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00123	-0.00123	-0.00124

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00113	0.00114	0.00113
	(A2 * A3 * B2 * X)	-0.00104	-0.00106	-0.00106
	(A2 * A3 * B1 * !B2 * X)	0.00113	0.00114	0.00113
	(A2 * A3 * B1 * !B2 * X)	-0.00104	-0.00106	-0.00106
	(A2 * !B1 * !B2 * !X)	0.00098	0.00099	0.00098
	(A2 * !B1 * !B2 * !X)	-0.00119	-0.00121	-0.00121
	(A2 * !A3 * B2 * X)	0.00113	0.00114	0.00113
	(A2 * !A3 * B2 * X)	-0.00104	-0.00106	-0.00106
	(A2 * !A3 * B1 * !B2 * X)	0.00113	0.00114	0.00113
	(A2 * !A3 * B1 * !B2 * X)	-0.00104	-0.00106	-0.00106
	(!A2 * A3 * B2 * X)	0.00113	0.00112	0.00113
	(!A2 * A3 * B2 * X)	-0.00098	-0.00101	-0.00101
	(!A2 * A3 * B1 * !B2 * X)	0.00113	0.00112	0.00113
	(!A2 * A3 * B1 * !B2 * X)	-0.00098	-0.00101	-0.00101
	(!A2 * A3 * !B1 * !B2 * !X)	0.00098	0.00098	0.00098
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00113	-0.00115	-0.00116
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00092	0.00093	0.00092
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00123	-0.00123	-0.00123

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00171	0.00172	0.00171
	(A2 * A3 * B2 * X)	-0.00209	-0.00216	-0.00214
	(A2 * A3 * B1 * !B2 * X)	0.00171	0.00172	0.00171
	(A2 * A3 * B1 * !B2 * X)	-0.00209	-0.00216	-0.00214
	(A2 * !B1 * !B2 * !X)	0.00171	0.00172	0.00171
	(A2 * !B1 * !B2 * !X)	-0.00209	-0.00216	-0.00214
	(A2 * !A3 * B2 * X)	0.00171	0.00172	0.00171
	(A2 * !A3 * B2 * X)	-0.00209	-0.00216	-0.00214
	(A2 * !A3 * B1 * !B2 * X)	0.00171	0.00172	0.00171
	(A2 * !A3 * B1 * !B2 * X)	-0.00209	-0.00216	-0.00214
	(!A2 * A3 * B2 * X)	0.00172	0.00172	0.00171
	(!A2 * A3 * B2 * X)	-0.00199	-0.00205	-0.00204
	(!A2 * A3 * B1 * !B2 * X)	0.00172	0.00172	0.00171
	(!A2 * A3 * B1 * !B2 * X)	-0.00199	-0.00205	-0.00204
	(!A2 * A3 * !B1 * !B2 * !X)	0.00172	0.00172	0.00171
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00199	-0.00205	-0.00204
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00159	0.00160	0.00159
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00221	-0.00222	-0.00221

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)**	-0.00100	-0.00100	-0.00100
	(A2 * A3 * B2 * X)	0.00106	0.00106	0.00106
	(A2 * A3 * B1 * !B2 * X)	-0.00100	-0.00100	-0.00100
	(A2 * A3 * B1 * !B2 * X)	0.00106	0.00106	0.00106
	(A2 * !B1 * !B2 * !X)	-0.00085	-0.00085	-0.00085
	(A2 * !B1 * !B2 * !X)	0.00122	0.00121	0.00121
	(A2 * !A3 * B2 * X)	-0.00100	-0.00100	-0.00100
	(A2 * !A3 * B2 * X)	0.00106	0.00106	0.00106
	(A2 * !A3 * B1 * !B2 * X)	-0.00100	-0.00100	-0.00100
	(A2 * !A3 * B1 * !B2 * X)	0.00106	0.00106	0.00106
	(!A2 * A3 * B2 * X)	-0.00100	-0.00100	-0.00100
	(!A2 * A3 * B2 * X)	0.00102	0.00101	0.00101
	(!A2 * A3 * B1 * !B2 * X)	-0.00100	-0.00100	-0.00100
	(!A2 * A3 * B1 * !B2 * X)	0.00102	0.00101	0.00101
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00085	-0.00085	-0.00085
	(!A2 * A3 * !B1 * !B2 * !X)	0.00117	0.00116	0.00116
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00077	-0.00079	-0.00080
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00124	0.00124	0.00124

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00113	-0.00112	-0.00112
	(A2 * A3 * B2 * X)	0.00107	0.00106	0.00106
	(A2 * A3 * B1 * !B2 * X)	-0.00113	-0.00112	-0.00112
	(A2 * A3 * B1 * !B2 * X)	0.00107	0.00106	0.00106
	(A2 * !B1 * !B2 * !X)	-0.00098	-0.00098	-0.00098
	(A2 * !B1 * !B2 * !X)	0.00121	0.00121	0.00121
	(A2 * !A3 * B2 * X)	-0.00113	-0.00112	-0.00112
	(A2 * !A3 * B2 * X)	0.00107	0.00106	0.00106
	(A2 * !A3 * B1 * !B2 * X)	-0.00113	-0.00112	-0.00112
	(A2 * !A3 * B1 * !B2 * X)	0.00107	0.00106	0.00106
	(!A2 * A3 * B2 * X)	-0.00113	-0.00112	-0.00112
	(!A2 * A3 * B2 * X)	0.00102	0.00101	0.00101
	(!A2 * A3 * B1 * !B2 * X)	-0.00113	-0.00112	-0.00112
	(!A2 * A3 * B1 * !B2 * X)	0.00102	0.00101	0.00101
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00097	-0.00098	-0.00098
	(!A2 * A3 * !B1 * !B2 * !X)	0.00115	0.00115	0.00116
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00089	-0.00093	-0.00092
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00124	0.00123	0.00123

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00171	-0.00171	-0.00170
	(A2 * A3 * B2 * X)	0.00215	0.00216	0.00214
	(A2 * A3 * B1 * !B2 * X)	-0.00171	-0.00171	-0.00170
	(A2 * A3 * B1 * !B2 * X)	0.00215	0.00216	0.00214
	(A2 * !B1 * !B2 * !X)	-0.00170	-0.00171	-0.00170
	(A2 * !B1 * !B2 * !X)	0.00214	0.00216	0.00214
	(A2 * !A3 * B2 * X)	-0.00171	-0.00171	-0.00170
	(A2 * !A3 * B2 * X)	0.00215	0.00216	0.00214
	(A2 * !A3 * B1 * !B2 * X)	-0.00170	-0.00171	-0.00170
	(A2 * !A3 * B1 * !B2 * X)	0.00212	0.00216	0.00214
	(!A2 * A3 * B2 * X)	-0.00171	-0.00171	-0.00170
	(!A2 * A3 * B2 * X)	0.00205	0.00205	0.00204
	(!A2 * A3 * B1 * !B2 * X)	-0.00171	-0.00171	-0.00170
	(!A2 * A3 * B1 * !B2 * X)	0.00205	0.00205	0.00204
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00170	-0.00171	-0.00170
	(!A2 * A3 * !B1 * !B2 * !X)	0.00203	0.00205	0.00204
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00155	-0.00160	-0.00159
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00223	0.00223	0.00222

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)**	0.00091	0.00092	0.00091
	(A1 * A3 * B2 * X)	-0.00076	-0.00076	-0.00076
	(A1 * A3 * B1 * !B2 * X)	0.00091	0.00092	0.00091
	(A1 * A3 * B1 * !B2 * X)	-0.00076	-0.00076	-0.00076
	(A1 * A3 * !B1 * !B2 * !X)	0.00087	0.00087	0.00087
	(A1 * A3 * !B1 * !B2 * !X)	-0.00086	-0.00087	-0.00086
	(A1 * !A3 * B2 * X)	0.00092	0.00091	0.00091
	(A1 * !A3 * B2 * X)	-0.00073	-0.00072	-0.00072
	(A1 * !A3 * B1 * !B2 * X)	0.00092	0.00091	0.00091
	(A1 * !A3 * B1 * !B2 * X)	-0.00073	-0.00072	-0.00072
	(A1 * !A3 * !B1 * !B2 * !X)	0.00087	0.00088	0.00087
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00106	-0.00108	-0.00107
	(!A1 * A3 * B2 * X)	0.00091	0.00091	0.00091
	(!A1 * A3 * B2 * X)	-0.00101	-0.00105	-0.00104
	(!A1 * A3 * B1 * !B2 * X)	0.00091	0.00091	0.00091
	(!A1 * A3 * B1 * !B2 * X)	-0.00101	-0.00105	-0.00104
	(!A1 * A3 * !B1 * !B2 * !X)	0.00087	0.00087	0.00087
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00106	-0.00109	-0.00108
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00081	0.00082	0.00081
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00110	-0.00111	-0.00110

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00105	0.00105	0.00105
	(A1 * A3 * B2 * X)	-0.00077	-0.00076	-0.00076
	(A1 * A3 * B1 * !B2 * X)	0.00105	0.00105	0.00105
	(A1 * A3 * B1 * !B2 * X)	-0.00077	-0.00076	-0.00076
	(A1 * A3 * !B1 * !B2 * !X)	0.00100	0.00100	0.00100
	(A1 * A3 * !B1 * !B2 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A3 * B2 * X)	0.00106	0.00105	0.00105
	(A1 * !A3 * B2 * X)	-0.00074	-0.00073	-0.00073
	(A1 * !A3 * B1 * !B2 * X)	0.00106	0.00105	0.00105
	(A1 * !A3 * B1 * !B2 * X)	-0.00073	-0.00073	-0.00073
	(A1 * !A3 * !B1 * !B2 * !X)	0.00100	0.00102	0.00100
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00106	-0.00109	-0.00108
	(!A1 * A3 * B2 * X)	0.00105	0.00105	0.00104
	(!A1 * A3 * B2 * X)	-0.00102	-0.00105	-0.00104
	(!A1 * A3 * B1 * !B2 * X)	0.00105	0.00105	0.00104
	(!A1 * A3 * B1 * !B2 * X)	-0.00102	-0.00105	-0.00104
	(!A1 * A3 * !B1 * !B2 * !X)	0.00100	0.00100	0.00100
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00107	-0.00109	-0.00109
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00093	0.00094	0.00093
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00111	-0.00111	-0.00111

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00175	0.00176	0.00175
	(A1 * A3 * B2 * X)	-0.00170	-0.00168	-0.00168
	(A1 * A3 * B1 * !B2 * X)	0.00175	0.00176	0.00175
	(A1 * A3 * B1 * !B2 * X)	-0.00170	-0.00168	-0.00168
	(A1 * A3 * !B1 * !B2 * !X)	0.00176	0.00175	0.00175
	(A1 * A3 * !B1 * !B2 * !X)	-0.00181	-0.00181	-0.00181
	(A1 * !A3 * B2 * X)	0.00177	0.00176	0.00175
	(A1 * !A3 * B2 * X)	-0.00163	-0.00162	-0.00162
	(A1 * !A3 * B1 * !B2 * X)	0.00178	0.00176	0.00175
	(A1 * !A3 * B1 * !B2 * X)	-0.00165	-0.00162	-0.00162
	(A1 * !A3 * !B1 * !B2 * !X)	0.00175	0.00178	0.00175
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00223	-0.00228	-0.00226
	(!A1 * A3 * B2 * X)	0.00175	0.00175	0.00175
	(!A1 * A3 * B2 * X)	-0.00224	-0.00229	-0.00228
	(!A1 * A3 * B1 * !B2 * X)	0.00175	0.00175	0.00175
	(!A1 * A3 * B1 * !B2 * X)	-0.00224	-0.00229	-0.00228
	(!A1 * A3 * !B1 * !B2 * !X)	0.00174	0.00175	0.00175
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00222	-0.00229	-0.00228
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00165	0.00165	0.00163
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00236	-0.00237	-0.00236

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)**	-0.00091	-0.00091	-0.00091
	(A1 * A3 * B2 * X)	0.00076	0.00076	0.00076
	(A1 * A3 * B1 * !B2 * X)	-0.00091	-0.00091	-0.00091
	(A1 * A3 * B1 * !B2 * X)	0.00076	0.00076	0.00076
	(A1 * A3 * !B1 * !B2 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * A3 * !B1 * !B2 * !X)	0.00086	0.00087	0.00086
	(A1 * !A3 * B2 * X)	-0.00090	-0.00091	-0.00091
	(A1 * !A3 * B2 * X)	0.00073	0.00073	0.00074
	(A1 * !A3 * B1 * !B2 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !A3 * B1 * !B2 * X)	0.00073	0.00073	0.00074
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A3 * !B1 * !B2 * !X)	0.00108	0.00108	0.00107
	(!A1 * A3 * B2 * X)	-0.00091	-0.00091	-0.00091
	(!A1 * A3 * B2 * X)	0.00104	0.00105	0.00104
	(!A1 * A3 * B1 * !B2 * X)	-0.00091	-0.00091	-0.00091
	(!A1 * A3 * B1 * !B2 * X)	0.00105	0.00105	0.00104
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00086	-0.00087	-0.00087
	(!A1 * A3 * !B1 * !B2 * !X)	0.00108	0.00109	0.00108
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00078	-0.00082	-0.00081
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00111	0.00111	0.00111

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00105	-0.00104	-0.00104
	(A1 * A3 * B2 * X)	0.00077	0.00076	0.00076
	(A1 * A3 * B1 * !B2 * X)	-0.00105	-0.00104	-0.00104
	(A1 * A3 * B1 * !B2 * X)	0.00077	0.00076	0.00076
	(A1 * A3 * !B1 * !B2 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * A3 * !B1 * !B2 * !X)	0.00087	0.00087	0.00087
	(A1 * !A3 * B2 * X)	-0.00105	-0.00104	-0.00104
	(A1 * !A3 * B2 * X)	0.00074	0.00074	0.00074
	(A1 * !A3 * B1 * !B2 * X)	-0.00104	-0.00104	-0.00104
	(A1 * !A3 * B1 * !B2 * X)	0.00073	0.00074	0.00074
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * !B1 * !B2 * !X)	0.00109	0.00109	0.00108
	(!A1 * A3 * B2 * X)	-0.00105	-0.00105	-0.00104
	(!A1 * A3 * B2 * X)	0.00105	0.00105	0.00104
	(!A1 * A3 * B1 * !B2 * X)	-0.00105	-0.00105	-0.00104
	(!A1 * A3 * B1 * !B2 * X)	0.00105	0.00105	0.00104
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * A3 * !B1 * !B2 * !X)	0.00109	0.00110	0.00109
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00090	-0.00094	-0.00093
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00112	0.00112	0.00111

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00175	-0.00175	-0.00175
	(A1 * A3 * B2 * X)	0.00170	0.00168	0.00168
	(A1 * A3 * B1 * !B2 * X)	-0.00175	-0.00175	-0.00175
	(A1 * A3 * B1 * !B2 * X)	0.00170	0.00168	0.00168
	(A1 * A3 * !B1 * !B2 * !X)	-0.00174	-0.00175	-0.00175
	(A1 * A3 * !B1 * !B2 * !X)	0.00181	0.00181	0.00181
	(A1 * !A3 * B2 * X)	-0.00175	-0.00174	-0.00174
	(A1 * !A3 * B2 * X)	0.00165	0.00164	0.00165
	(A1 * !A3 * B1 * !B2 * X)	-0.00175	-0.00174	-0.00174
	(A1 * !A3 * B1 * !B2 * X)	0.00165	0.00164	0.00165
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00175	-0.00176	-0.00175
	(A1 * !A3 * !B1 * !B2 * !X)	0.00228	0.00228	0.00226
	(!A1 * A3 * B2 * X)	-0.00175	-0.00175	-0.00175
	(!A1 * A3 * B2 * X)	0.00228	0.00229	0.00228
	(!A1 * A3 * B1 * !B2 * X)	-0.00175	-0.00175	-0.00175
	(!A1 * A3 * B1 * !B2 * X)	0.00229	0.00229	0.00228
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00174	-0.00175	-0.00175
	(!A1 * A3 * !B1 * !B2 * !X)	0.00226	0.00229	0.00228
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00158	-0.00165	-0.00163
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00236	0.00237	0.00236

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00101	0.00099	0.00099
	(A2 * B2 * X)	-0.00068	-0.00066	-0.00066
	(A2 * B1 * !B2 * X)	0.00100	0.00099	0.00099
	(A2 * B1 * !B2 * X)	-0.00067	-0.00066	-0.00066
	(A2 * !B1 * !B2 * !X)	0.00087	0.00088	0.00087
	(A2 * !B1 * !B2 * !X)	-0.00107	-0.00109	-0.00108
	(A1 * !A2 * B2 * X)	0.00100	0.00099	0.00099
	(A1 * !A2 * B2 * X)	-0.00067	-0.00066	-0.00066
	(A1 * !A2 * B1 * !B2 * X)	0.00101	0.00099	0.00099
	(A1 * !A2 * B1 * !B2 * X)	-0.00068	-0.00066	-0.00066
	(A1 * !A2 * !B1 * !B2 * !X)	0.00087	0.00088	0.00087
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00099	-0.00101	-0.00101
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00081	0.00082	0.00081
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00110	-0.00111	-0.00111
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00117	0.00115	0.00115
	(A2 * B2 * X)	-0.00068	-0.00066	-0.00066
	(A2 * B1 * !B2 * X)	0.00117	0.00115	0.00115
	(A2 * B1 * !B2 * X)	-0.00068	-0.00066	-0.00066
	(A2 * !B1 * !B2 * !X)	0.00100	0.00101	0.00100
	(A2 * !B1 * !B2 * !X)	-0.00109	-0.00111	-0.00111
	(A1 * !A2 * B2 * X)	0.00117	0.00115	0.00115
	(A1 * !A2 * B2 * X)	-0.00068	-0.00066	-0.00066
	(A1 * !A2 * B1 * !B2 * X)	0.00117	0.00115	0.00115
	(A1 * !A2 * B1 * !B2 * X)	-0.00068	-0.00066	-0.00066
	(A1 * !A2 * !B1 * !B2 * !X)	0.00100	0.00101	0.00100
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00103	-0.00104	-0.00104
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00093	0.00094	0.00094
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00113	-0.00114	-0.00114

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00187	0.00185	0.00185
	(A2 * B2 * X)	-0.00135	-0.00133	-0.00133
	(A2 * B1 * !B2 * X)	0.00187	0.00185	0.00185
	(A2 * B1 * !B2 * X)	-0.00135	-0.00133	-0.00133
	(A2 * !B1 * !B2 * !X)	0.00169	0.00170	0.00169
	(A2 * !B1 * !B2 * !X)	-0.00204	-0.00208	-0.00207
	(A1 * !A2 * B2 * X)	0.00188	0.00185	0.00185
	(A1 * !A2 * B2 * X)	-0.00136	-0.00133	-0.00133
	(A1 * !A2 * B1 * !B2 * X)	0.00188	0.00185	0.00185
	(A1 * !A2 * B1 * !B2 * X)	-0.00136	-0.00133	-0.00133
	(A1 * !A2 * !B1 * !B2 * !X)	0.00170	0.00170	0.00169
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00193	-0.00195	-0.00195
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00159	0.00159	0.00158
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00216	-0.00216	-0.00215

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00096	-0.00096	-0.00099
	(A2 * B2 * X)	0.00069	0.00069	0.00067
	(A2 * B1 * !B2 * X)	-0.00096	-0.00096	-0.00099
	(A2 * B1 * !B2 * X)	0.00069	0.00069	0.00067
	(A2 * !B1 * !B2 * !X)	-0.00087	-0.00088	-0.00087
	(A2 * !B1 * !B2 * !X)	0.00108	0.00109	0.00108
	(A1 * !A2 * B2 * X)	-0.00090	-0.00090	-0.00098
	(A1 * !A2 * B2 * X)	0.00073	0.00073	0.00067
	(A1 * !A2 * B1 * !B2 * X)	-0.00090	-0.00090	-0.00098
	(A1 * !A2 * B1 * !B2 * X)	0.00073	0.00073	0.00067
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * !B1 * !B2 * !X)	0.00101	0.00101	0.00101
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00079	-0.00082	-0.00081
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00111	0.00111	0.00111
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00112	-0.00112	-0.00115
	(A2 * B2 * X)	0.00070	0.00069	0.00067
	(A2 * B1 * !B2 * X)	-0.00112	-0.00112	-0.00115
	(A2 * B1 * !B2 * X)	0.00069	0.00069	0.00067
	(A2 * !B1 * !B2 * !X)	-0.00100	-0.00101	-0.00100
	(A2 * !B1 * !B2 * !X)	0.00112	0.00111	0.00111
	(A1 * !A2 * B2 * X)	-0.00106	-0.00106	-0.00114
	(A1 * !A2 * B2 * X)	0.00073	0.00073	0.00067
	(A1 * !A2 * B1 * !B2 * X)	-0.00106	-0.00106	-0.00114
	(A1 * !A2 * B1 * !B2 * X)	0.00073	0.00073	0.00067
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * !B1 * !B2 * !X)	0.00104	0.00104	0.00104
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00091	-0.00094	-0.00094
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00114	0.00114	0.00114

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00176	-0.00176	-0.00185
	(A2 * B2 * X)	0.00144	0.00142	0.00136
	(A2 * B1 * !B2 * X)	-0.00174	-0.00176	-0.00185
	(A2 * B1 * !B2 * X)	0.00142	0.00142	0.00136
	(A2 * !B1 * !B2 * !X)	-0.00167	-0.00170	-0.00169
	(A2 * !B1 * !B2 * !X)	0.00206	0.00208	0.00207
	(A1 * !A2 * B2 * X)	-0.00162	-0.00163	-0.00182
	(A1 * !A2 * B2 * X)	0.00150	0.00149	0.00136
	(A1 * !A2 * B1 * !B2 * X)	-0.00162	-0.00163	-0.00182
	(A1 * !A2 * B1 * !B2 * X)	0.00149	0.00149	0.00136
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00168	-0.00168	-0.00169
	(A1 * !A2 * !B1 * !B2 * !X)	0.00195	0.00195	0.00195
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00152	-0.00159	-0.00158
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00216	0.00216	0.00216

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00101	0.00101	0.00101
	(A3 * B2 * X)	-0.00107	-0.00110	-0.00109
	(A2 * !A3 * B2 * X)	0.00101	0.00101	0.00101
	(A2 * !A3 * B2 * X)	-0.00107	-0.00110	-0.00109
	(A1 * !A2 * !A3 * B2 * X)	0.00101	0.00101	0.00101
	(A1 * !A2 * !A3 * B2 * X)	-0.00107	-0.00110	-0.00109
	(!A1 * !A2 * !A3 * B2 * !X)	0.00040	0.00040	0.00040
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00133	-0.00136	-0.00135
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00045	0.00045	0.00041
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00130	-0.00131	-0.00137

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00124	0.00124	0.00123
	(A3 * B2 * X)	-0.00118	-0.00121	-0.00120
	(A2 * !A3 * B2 * X)	0.00124	0.00124	0.00123
	(A2 * !A3 * B2 * X)	-0.00118	-0.00121	-0.00120
	(A1 * !A2 * !A3 * B2 * X)	0.00124	0.00124	0.00123
	(A1 * !A2 * !A3 * B2 * X)	-0.00118	-0.00121	-0.00120
	(!A1 * !A2 * !A3 * B2 * !X)	0.00048	0.00048	0.00048
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00152	-0.00155	-0.00154
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00054	0.00054	0.00050
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00148	-0.00149	-0.00156
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00214	0.00216	0.00215
	(A3 * B2 * X)	-0.00250	-0.00256	-0.00254
	(A2 * !A3 * B2 * X)	0.00214	0.00216	0.00215
	(A2 * !A3 * B2 * X)	-0.00250	-0.00256	-0.00254
	(A1 * !A2 * !A3 * B2 * X)	0.00214	0.00216	0.00215
	(A1 * !A2 * !A3 * B2 * X)	-0.00249	-0.00255	-0.00254
	(!A1 * !A2 * !A3 * B2 * !X)	0.00070	0.00071	0.00070
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00327	-0.00334	-0.00332
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00080	0.00081	0.00073
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00325	-0.00328	-0.00338

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00100	-0.00101	-0.00101
	(A3 * B2 * X)	0.00109	0.00110	0.00109
	(A2 * !A3 * B2 * X)	-0.00101	-0.00101	-0.00101
	(A2 * !A3 * B2 * X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !A3 * B2 * X)	-0.00101	-0.00101	-0.00101
	(A1 * !A2 * !A3 * B2 * X)	0.00110	0.00110	0.00109
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !A3 * B2 * !X)	0.00136	0.00136	0.00135
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00137	0.00137	0.00137
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00123	-0.00124	-0.00123
	(A3 * B2 * X)	0.00119	0.00121	0.00120
	(A2 * !A3 * B2 * X)	-0.00123	-0.00124	-0.00123
	(A2 * !A3 * B2 * X)	0.00119	0.00121	0.00120
	(A1 * !A2 * !A3 * B2 * X)	-0.00124	-0.00124	-0.00123
	(A1 * !A2 * !A3 * B2 * X)	0.00121	0.00121	0.00120
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * !A3 * B2 * !X)	0.00155	0.00155	0.00154
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00156	0.00156	0.00156
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00214	-0.00215	-0.00214
	(A3 * B2 * X)	0.00256	0.00256	0.00254
	(A2 * !A3 * B2 * X)	-0.00214	-0.00215	-0.00214
	(A2 * !A3 * B2 * X)	0.00255	0.00256	0.00254
	(A1 * !A2 * !A3 * B2 * X)	-0.00214	-0.00214	-0.00214
	(A1 * !A2 * !A3 * B2 * X)	0.00255	0.00255	0.00254
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00070	-0.00070	-0.00070
	(!A1 * !A2 * !A3 * B2 * !X)	0.00333	0.00334	0.00332
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00070	-0.00071	-0.00070
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00339	0.00342	0.00340

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00103	0.00104	0.00104
	(A3 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * !A3 * B1 * X)	0.00103	0.00104	0.00104
	(A2 * !A3 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * !A3 * B1 * X)	0.00103	0.00104	0.00104
	(A1 * !A2 * !A3 * B1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A2 * !A3 * B1 * !X)	0.00033	0.00033	0.00033
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00132	-0.00133	-0.00132
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00039	0.00038	0.00034
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00129	-0.00129	-0.00135
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00117	0.00117	0.00117
	(A3 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A2 * !A3 * B1 * X)	0.00117	0.00117	0.00117
	(A2 * !A3 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !A2 * !A3 * B1 * X)	0.00117	0.00117	0.00117
	(A1 * !A2 * !A3 * B1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A2 * !A3 * B1 * !X)	0.00037	0.00038	0.00038
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00133	-0.00136	-0.00135
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00044	0.00044	0.00040
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00130	-0.00131	-0.00137

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00200	0.00200	0.00200
	(A3 * B1 * X)	-0.00136	-0.00136	-0.00135
	(A2 * !A3 * B1 * X)	0.00200	0.00200	0.00200
	(A2 * !A3 * B1 * X)	-0.00136	-0.00136	-0.00135
	(A1 * !A2 * !A3 * B1 * X)	0.00200	0.00200	0.00200
	(A1 * !A2 * !A3 * B1 * X)	-0.00136	-0.00136	-0.00135
	(!A1 * !A2 * !A3 * B1 * !X)	0.00067	0.00068	0.00067
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00253	-0.00259	-0.00256
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00078	0.00078	0.00070
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00251	-0.00252	-0.00264

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00100	-0.00100	-0.00104
	(A3 * B1 * X)	0.00071	0.00070	0.00068
	(A2 * !A3 * B1 * X)	-0.00100	-0.00100	-0.00104
	(A2 * !A3 * B1 * X)	0.00071	0.00071	0.00068
	(A1 * !A2 * !A3 * B1 * X)	-0.00100	-0.00100	-0.00104
	(A1 * !A2 * !A3 * B1 * X)	0.00071	0.00071	0.00068
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !A2 * !A3 * B1 * !X)	0.00133	0.00133	0.00132
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00135	0.00135	0.00135

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00114	-0.00114	-0.00117
	(A3 * B1 * X)	0.00071	0.00071	0.00068
	(A2 * !A3 * B1 * X)	-0.00114	-0.00114	-0.00117
	(A2 * !A3 * B1 * X)	0.00071	0.00071	0.00068
	(A1 * !A2 * !A3 * B1 * X)	-0.00114	-0.00114	-0.00117
	(A1 * !A2 * !A3 * B1 * X)	0.00071	0.00071	0.00068
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00037	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * B1 * !X)	0.00136	0.00136	0.00135
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00138	0.00138	0.00138
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00192	-0.00193	-0.00199
	(A3 * B1 * X)	0.00143	0.00142	0.00137
	(A2 * !A3 * B1 * X)	-0.00192	-0.00193	-0.00199
	(A2 * !A3 * B1 * X)	0.00143	0.00143	0.00137
	(A1 * !A2 * !A3 * B1 * X)	-0.00192	-0.00193	-0.00199
	(A1 * !A2 * !A3 * B1 * X)	0.00143	0.00143	0.00137
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00067	-0.00068	-0.00067
	(!A1 * !A2 * !A3 * B1 * !X)	0.00256	0.00259	0.00256
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00067	-0.00068	-0.00068
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00263	0.00265	0.00265

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	Y
0	0	0	0	x	1
0	0	x	1	0	1
0	0	x	1	1	0
0	x	1	x	0	1
0	x	1	x	1	0
x	1	x	x	0	1
x	1	x	x	1	0
1	x	x	x	0	1
1	x	x	x	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41ai_1	11.18880
sky130_fd_sc_hs__o41ai_2	20.77920
sky130_fd_sc_hs__o41ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__o41ai_1	0.00249	0.00255	0.00265	0.00266	0.00273	0.07255
sky130_fd_sc_hs__o41ai_2	0.00486	0.00498	0.00477	0.00495	0.00530	0.13588
sky130_fd_sc_hs__o41ai_4	0.00942	0.00940	0.00957	0.00990	0.00734	0.26441

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.00011	0.00020
sky130_fd_sc_hs__o41ai_2	0.00000	0.00022	0.00041
sky130_fd_sc_hs__o41ai_4	0.00000	0.00035	0.00067

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)	0.93576	2.84557	13.59340
	A2->Y (FR)	0.90210	2.79517	13.71690
	A3->Y (FR)	0.81816	2.69742	13.81470
	A4->Y (FR)	0.66608	2.48475	13.11010
	B1->Y (FR)	0.09955	0.98652	7.52084
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.92904	2.58235	13.60840
	A2->Y (FR)	0.89143	2.51838	13.69640
	A3->Y (FR)	0.79484	2.41530	13.82000
	A4->Y (FR)	0.59046	2.14389	13.06110
	B1->Y (FR)	0.07936	0.91061	7.40875
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.85655	2.29005	13.58180
	A2->Y (FR)	0.81863	2.23011	13.69710
	A3->Y (FR)	0.72782	2.12593	13.81410
	A4->Y (FR)	0.53638	1.86970	13.10550
	B1->Y (FR)	0.10568	1.02836	8.77681

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.06180	0.53203	3.47607
	A2->Y (RF)	0.06301	0.52829	3.45855
	A3->Y (RF)	0.06394	0.52054	3.44044
	A4->Y (RF)	0.05768	0.50568	3.41193
	B1->Y (RF)	0.04914	0.54217	3.56819
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.05886	0.50101	3.46678
	A2->Y (RF)	0.06008	0.49777	3.44807
	A3->Y (RF)	0.06082	0.48820	3.42244
	A4->Y (RF)	0.05489	0.47081	3.39162
	B1->Y (RF)	0.04420	0.51037	3.60726
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.06032	0.46973	3.45590
	A2->Y (RF)	0.05976	0.46400	3.42610
	A3->Y (RF)	0.05922	0.45287	3.39645
	A4->Y (RF)	0.05119	0.42988	3.33901
	B1->Y (RF)	0.04502	0.51421	3.91866

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00085	0.00074	0.00070
	A1	0.00598	0.00589	0.00584
	A2	0.00088	0.00078	0.00074
	A2	0.00553	0.00543	0.00537
	A3	0.00087	0.00076	0.00072
	A3	0.00512	0.00501	0.00496
	A4	0.00086	0.00072	0.00067
	A4	0.00465	0.00451	0.00440
	B1	-0.00027	-0.00038	-0.00041
	B1	0.00399	0.00385	0.00386
sky130_fd_sc_hs__o41ai_2	A1	0.00119	0.00095	0.00089
	A1	0.01146	0.01122	0.01115
	A2	0.00124	0.00098	0.00092
	A2	0.01057	0.01031	0.01024
	A3	0.00128	0.00104	0.00099
	A3	0.00957	0.00932	0.00923
	A4	0.00122	0.00091	0.00085
	A4	0.00856	0.00828	0.00800
	B1	-0.00134	-0.00150	-0.00153
	B1	0.00721	0.00701	0.00703

sky130_fd_sc_hs__o41ai_4	**A1**	0.00209	0.00166	0.00156
	A1	0.02213	0.02176	0.02164
	A2	0.00213	0.00171	0.00160
	A2	0.02027	0.01986	0.01970
	A3	0.00209	0.00165	0.00156
	A3	0.01849	0.01803	0.01788
	A4	0.00199	0.00139	0.00130
	A4	0.01644	0.01586	0.01572
	B1	-0.00200	-0.00231	-0.00233
	B1	0.01180	0.01152	0.01154

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.00647	0.00639	0.00621
	A1	0.00138	0.00127	0.00115
	A2	0.00567	0.00559	0.00546
	A2	0.00099	0.00091	0.00080
	A3	0.00482	0.00478	0.00469
	A3	0.00049	0.00045	0.00037
	A4	0.00388	0.00388	0.00382
	A4	-0.00004	-0.00004	-0.00010
	B1	0.00552	0.00543	0.00525
	B1	0.00141	0.00130	0.00117

sky130_fd_sc_hs__o41ai_2	**A1**	0.01337	0.01316	0.01274
	A1	0.00324	0.00301	0.00273
	A2	0.01154	0.01138	0.01111
	A2	0.00217	0.00201	0.00178
	A3	0.00976	0.00965	0.00945
	A3	0.00134	0.00123	0.00106
	A4	0.00750	0.00751	0.00743
	A4	-0.00010	-0.00011	-0.00017
	B1	0.01135	0.01119	0.01084
	B1	0.00319	0.00300	0.00273
sky130_fd_sc_hs__o41ai_4	**A1**	0.02504	0.02459	0.02383
	A1	0.00523	0.00478	0.00425
	A2	0.02152	0.02115	0.02062
	A2	0.00333	0.00297	0.00255
	A3	0.01806	0.01782	0.01749
	A3	0.00139	0.00112	0.00086
	A4	0.01385	0.01381	0.01377
	A4	-0.00103	-0.00113	-0.00115
	B1	0.02001	0.01989	0.01934
	B1	0.00694	0.00677	0.00639

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)**	0.00104	0.00105	0.00104
	(A2 * A4 * B1 * !Y)	-0.00120	-0.00123	-0.00122
	(A2 * A3 * !A4 * B1 * !Y)	0.00104	0.00105	0.00104
	(A2 * A3 * !A4 * B1 * !Y)	-0.00120	-0.00123	-0.00122
	(A2 * !B1 * Y)	0.00104	0.00105	0.00104
	(A2 * !B1 * Y)	-0.00120	-0.00123	-0.00122
	(A2 * !A3 * !A4 * B1 * !Y)	0.00104	0.00105	0.00104
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00120	-0.00123	-0.00122
	(!A2 * A3 * A4 * B1 * !Y)	0.00105	0.00104	0.00104
	(!A2 * A3 * A4 * B1 * !Y)	-0.00113	-0.00116	-0.00116
	(!A2 * A3 * !B1 * Y)	0.00105	0.00104	0.00104
	(!A2 * A3 * !B1 * Y)	-0.00113	-0.00116	-0.00116
	(!A2 * A3 * !A4 * B1 * !Y)	0.00105	0.00104	0.00104
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00113	-0.00116	-0.00116
	(!A2 * !A3 * A4 * B1 * !Y)	0.00105	0.00105	0.00104
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00112	-0.00114	-0.00114
	(!A2 * !A3 * A4 * !B1 * Y)	0.00105	0.00105	0.00104
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00112	-0.00114	-0.00114
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00097	0.00098	0.00097
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00208	0.00208	0.00207
	(A2 * A4 * B1 * !Y)	-0.00237	-0.00243	-0.00241
	(A2 * A3 * !A4 * B1 * !Y)	0.00208	0.00208	0.00207
	(A2 * A3 * !A4 * B1 * !Y)	-0.00236	-0.00243	-0.00241
	(A2 * !B1 * Y)	0.00208	0.00208	0.00207
	(A2 * !B1 * Y)	-0.00237	-0.00243	-0.00241
	(A2 * !A3 * !A4 * B1 * !Y)	0.00208	0.00208	0.00207
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00236	-0.00243	-0.00241
	(!A2 * A3 * A4 * B1 * !Y)	0.00208	0.00207	0.00207
	(!A2 * A3 * A4 * B1 * !Y)	-0.00223	-0.00229	-0.00229
	(!A2 * A3 * !B1 * Y)	0.00208	0.00207	0.00207
	(!A2 * A3 * !B1 * Y)	-0.00223	-0.00229	-0.00229
	(!A2 * A3 * !A4 * B1 * !Y)	0.00208	0.00207	0.00207
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00223	-0.00229	-0.00229
	(!A2 * !A3 * A4 * B1 * !Y)	0.00208	0.00209	0.00207
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00220	-0.00226	-0.00226
	(!A2 * !A3 * A4 * !B1 * Y)	0.00207	0.00209	0.00207
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00220	-0.00227	-0.00226
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00193	0.00194	0.00193
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00250	-0.00250	-0.00249

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00400	0.00402	0.00398
	(A2 * A4 * B1 * !Y)	-0.00473	-0.00486	-0.00481
	(A2 * A3 * !A4 * B1 * !Y)	0.00400	0.00402	0.00398
	(A2 * A3 * !A4 * B1 * !Y)	-0.00473	-0.00486	-0.00481
	(A2 * !B1 * Y)	0.00400	0.00402	0.00398
	(A2 * !B1 * Y)	-0.00473	-0.00486	-0.00481
	(A2 * !A3 * !A4 * B1 * !Y)	0.00400	0.00402	0.00398
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00473	-0.00486	-0.00481
	(!A2 * A3 * A4 * B1 * !Y)	0.00400	0.00400	0.00398
	(!A2 * A3 * A4 * B1 * !Y)	-0.00441	-0.00453	-0.00454
	(!A2 * A3 * !B1 * Y)	0.00400	0.00400	0.00398
	(!A2 * A3 * !B1 * Y)	-0.00441	-0.00453	-0.00454
	(!A2 * A3 * !A4 * B1 * !Y)	0.00400	0.00400	0.00398
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00441	-0.00453	-0.00454
	(!A2 * !A3 * A4 * B1 * !Y)	0.00399	0.00402	0.00398
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00437	-0.00449	-0.00449
	(!A2 * !A3 * A4 * !B1 * Y)	0.00399	0.00402	0.00398
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00437	-0.00449	-0.00449
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00370	0.00372	0.00369
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00498	-0.00499	-0.00497

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)**	-0.00104	-0.00105	-0.00104
	(A2 * A4 * B1 * !Y)	0.00123	0.00123	0.00122
	(A2 * A3 * !A4 * B1 * !Y)	-0.00104	-0.00105	-0.00104
	(A2 * A3 * !A4 * B1 * !Y)	0.00121	0.00123	0.00122
	(A2 * !B1 * Y)	-0.00104	-0.00105	-0.00104
	(A2 * !B1 * Y)	0.00123	0.00123	0.00122
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00104	-0.00105	-0.00104
	(A2 * !A3 * !A4 * B1 * !Y)	0.00121	0.00123	0.00122
	(!A2 * A3 * A4 * B1 * !Y)	-0.00105	-0.00104	-0.00104
	(!A2 * A3 * A4 * B1 * !Y)	0.00117	0.00116	0.00116
	(!A2 * A3 * !B1 * Y)	-0.00105	-0.00104	-0.00104
	(!A2 * A3 * !B1 * Y)	0.00117	0.00116	0.00116
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00105	-0.00104	-0.00104
	(!A2 * A3 * !A4 * B1 * !Y)	0.00117	0.00116	0.00116
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00104	-0.00104	-0.00104
	(!A2 * !A3 * A4 * B1 * !Y)	0.00115	0.00114	0.00114
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00104	-0.00104	-0.00104
	(!A2 * !A3 * A4 * !B1 * Y)	0.00114	0.00114	0.00114
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00094	-0.00098	-0.00097
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00126	0.00125	0.00125

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00207	-0.00208	-0.00206
	(A2 * A4 * B1 * !Y)	0.00243	0.00243	0.00241
	(A2 * A3 * !A4 * B1 * !Y)	-0.00206	-0.00208	-0.00206
	(A2 * A3 * !A4 * B1 * !Y)	0.00240	0.00243	0.00241
	(A2 * !B1 * Y)	-0.00207	-0.00208	-0.00206
	(A2 * !B1 * Y)	0.00243	0.00243	0.00241
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00206	-0.00207	-0.00206
	(A2 * !A3 * !A4 * B1 * !Y)	0.00240	0.00243	0.00241
	(!A2 * A3 * A4 * B1 * !Y)	-0.00208	-0.00207	-0.00206
	(!A2 * A3 * A4 * B1 * !Y)	0.00231	0.00229	0.00229
	(!A2 * A3 * !B1 * Y)	-0.00208	-0.00206	-0.00206
	(!A2 * A3 * !B1 * Y)	0.00231	0.00229	0.00229
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00205	-0.00206	-0.00206
	(!A2 * A3 * !A4 * B1 * !Y)	0.00227	0.00229	0.00229
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00206	-0.00207	-0.00207
	(!A2 * !A3 * A4 * B1 * !Y)	0.00225	0.00226	0.00226
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00206	-0.00207	-0.00206
	(!A2 * !A3 * A4 * !B1 * Y)	0.00225	0.00227	0.00226
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00186	-0.00194	-0.00193
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00251	0.00251	0.00250

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00399	-0.00399	-0.00397
	(A2 * A4 * B1 * !Y)	0.00485	0.00486	0.00481
	(A2 * A3 * !A4 * B1 * !Y)	-0.00399	-0.00399	-0.00397
	(A2 * A3 * !A4 * B1 * !Y)	0.00484	0.00486	0.00481
	(A2 * !B1 * Y)	-0.00399	-0.00399	-0.00397
	(A2 * !B1 * Y)	0.00485	0.00486	0.00481
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00399	-0.00399	-0.00397
	(A2 * !A3 * !A4 * B1 * !Y)	0.00485	0.00486	0.00481
	(!A2 * A3 * A4 * B1 * !Y)	-0.00396	-0.00397	-0.00397
	(!A2 * A3 * A4 * B1 * !Y)	0.00452	0.00453	0.00454
	(!A2 * A3 * !B1 * Y)	-0.00396	-0.00397	-0.00397
	(!A2 * A3 * !B1 * Y)	0.00453	0.00453	0.00454
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00396	-0.00397	-0.00397
	(!A2 * A3 * !A4 * B1 * !Y)	0.00452	0.00453	0.00454
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00396	-0.00397	-0.00397
	(!A2 * !A3 * A4 * B1 * !Y)	0.00447	0.00449	0.00449
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00397	-0.00397	-0.00397
	(!A2 * !A3 * A4 * !B1 * Y)	0.00448	0.00449	0.00449
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00357	-0.00372	-0.00369
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00501	0.00501	0.00499

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)**	0.00102	0.00101	0.00101
	(A1 * A3 * A4 * B1 * !Y)	-0.00092	-0.00092	-0.00092
	(A1 * A3 * !B1 * Y)	0.00101	0.00101	0.00101
	(A1 * A3 * !B1 * Y)	-0.00094	-0.00094	-0.00094
	(A1 * A3 * !A4 * B1 * !Y)	0.00102	0.00101	0.00101
	(A1 * A3 * !A4 * B1 * !Y)	-0.00091	-0.00090	-0.00090
	(A1 * !A3 * A4 * B1 * !Y)	0.00102	0.00101	0.00101
	(A1 * !A3 * A4 * B1 * !Y)	-0.00088	-0.00088	-0.00088
	(A1 * !A3 * A4 * !B1 * Y)	0.00101	0.00102	0.00101
	(A1 * !A3 * A4 * !B1 * Y)	-0.00094	-0.00094	-0.00094
	(A1 * !A3 * !A4 * B1 * !Y)	0.00100	0.00101	0.00101
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * !A3 * !A4 * !B1 * Y)	0.00101	0.00100	0.00101
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00116	-0.00118	-0.00118
	(!A1 * A3 * A4 * B1 * !Y)	0.00101	0.00101	0.00101
	(!A1 * A3 * A4 * B1 * !Y)	-0.00116	-0.00119	-0.00118
	(!A1 * A3 * !B1 * Y)	0.00101	0.00101	0.00101
	(!A1 * A3 * !B1 * Y)	-0.00116	-0.00119	-0.00118
	(!A1 * A3 * !A4 * B1 * !Y)	0.00101	0.00101	0.00101
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00116	-0.00119	-0.00118
	(!A1 * !A3 * A4 * B1 * !Y)	0.00101	0.00101	0.00101
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00107	-0.00110	-0.00110
	(!A1 * !A3 * A4 * !B1 * Y)	0.00101	0.00101	0.00101
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00107	-0.00110	-0.00110
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00094	0.00094	0.00094
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00121	-0.00122	-0.00121

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00209	0.00208	0.00207
	(A1 * A3 * A4 * B1 * !Y)	-0.00193	-0.00191	-0.00191
	(A1 * A3 * !B1 * Y)	0.00208	0.00208	0.00207
	(A1 * A3 * !B1 * Y)	-0.00195	-0.00196	-0.00195
	(A1 * A3 * !A4 * B1 * !Y)	0.00209	0.00208	0.00207
	(A1 * A3 * !A4 * B1 * !Y)	-0.00189	-0.00187	-0.00187
	(A1 * !A3 * A4 * B1 * !Y)	0.00207	0.00209	0.00208
	(A1 * !A3 * A4 * B1 * !Y)	-0.00184	-0.00183	-0.00183
	(A1 * !A3 * A4 * !B1 * Y)	0.00207	0.00210	0.00207
	(A1 * !A3 * A4 * !B1 * Y)	-0.00194	-0.00196	-0.00196
	(A1 * !A3 * !A4 * B1 * !Y)	0.00207	0.00207	0.00207
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00173	-0.00173	-0.00173
	(A1 * !A3 * !A4 * !B1 * Y)	0.00208	0.00210	0.00207
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00239	-0.00244	-0.00243
	(!A1 * A3 * A4 * B1 * !Y)	0.00207	0.00209	0.00207
	(!A1 * A3 * A4 * B1 * !Y)	-0.00242	-0.00249	-0.00247
	(!A1 * A3 * !B1 * Y)	0.00207	0.00209	0.00207
	(!A1 * A3 * !B1 * Y)	-0.00242	-0.00249	-0.00247
	(!A1 * A3 * !A4 * B1 * !Y)	0.00207	0.00209	0.00207
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00242	-0.00249	-0.00247
	(!A1 * !A3 * A4 * B1 * !Y)	0.00208	0.00209	0.00207
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00228	-0.00232	-0.00232
	(!A1 * !A3 * A4 * !B1 * Y)	0.00207	0.00208	0.00207
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00228	-0.00233	-0.00233
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00190	0.00193	0.00192
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00251	-0.00254	-0.00253

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00398	0.00394	0.00394
	(A1 * A3 * A4 * B1 * !Y)	-0.00364	-0.00365	-0.00365
	(A1 * A3 * !B1 * Y)	0.00395	0.00394	0.00394
	(A1 * A3 * !B1 * Y)	-0.00371	-0.00373	-0.00373
	(A1 * A3 * !A4 * B1 * !Y)	0.00398	0.00394	0.00394
	(A1 * A3 * !A4 * B1 * !Y)	-0.00359	-0.00357	-0.00357
	(A1 * !A3 * A4 * B1 * !Y)	0.00393	0.00396	0.00395
	(A1 * !A3 * A4 * B1 * !Y)	-0.00352	-0.00351	-0.00351
	(A1 * !A3 * A4 * !B1 * Y)	0.00395	0.00400	0.00394
	(A1 * !A3 * A4 * !B1 * Y)	-0.00373	-0.00375	-0.00375
	(A1 * !A3 * !A4 * B1 * !Y)	0.00399	0.00394	0.00394
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00338	-0.00333	-0.00332
	(A1 * !A3 * !A4 * !B1 * Y)	0.00395	0.00400	0.00394
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00469	-0.00479	-0.00476
	(!A1 * A3 * A4 * B1 * !Y)	0.00395	0.00396	0.00394
	(!A1 * A3 * A4 * B1 * !Y)	-0.00465	-0.00480	-0.00476
	(!A1 * A3 * !B1 * Y)	0.00395	0.00396	0.00394
	(!A1 * A3 * !B1 * Y)	-0.00465	-0.00480	-0.00476
	(!A1 * A3 * !A4 * B1 * !Y)	0.00395	0.00396	0.00394
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00464	-0.00480	-0.00476
	(!A1 * !A3 * A4 * B1 * !Y)	0.00394	0.00397	0.00394
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00437	-0.00446	-0.00447
	(!A1 * !A3 * A4 * !B1 * Y)	0.00393	0.00397	0.00394
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00437	-0.00447	-0.00448
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00365	0.00369	0.00366
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00495	-0.00498	-0.00495

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)**	-0.00100	-0.00101	-0.00101
	(A1 * A3 * A4 * B1 * !Y)	0.00092	0.00092	0.00092
	(A1 * A3 * !B1 * Y)	-0.00100	-0.00101	-0.00101
	(A1 * A3 * !B1 * Y)	0.00094	0.00094	0.00094
	(A1 * A3 * !A4 * B1 * !Y)	-0.00101	-0.00101	-0.00101
	(A1 * A3 * !A4 * B1 * !Y)	0.00091	0.00090	0.00090
	(A1 * !A3 * A4 * B1 * !Y)	-0.00101	-0.00101	-0.00101
	(A1 * !A3 * A4 * B1 * !Y)	0.00088	0.00088	0.00088
	(A1 * !A3 * A4 * !B1 * Y)	-0.00100	-0.00101	-0.00101
	(A1 * !A3 * A4 * !B1 * Y)	0.00094	0.00094	0.00094
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00100	-0.00100	-0.00101
	(A1 * !A3 * !A4 * B1 * !Y)	0.00084	0.00084	0.00084
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00100	-0.00100	-0.00101
	(A1 * !A3 * !A4 * !B1 * Y)	0.00118	0.00119	0.00118
	(!A1 * A3 * A4 * B1 * !Y)	-0.00101	-0.00101	-0.00101
	(!A1 * A3 * A4 * B1 * !Y)	0.00118	0.00119	0.00118
	(!A1 * A3 * !B1 * Y)	-0.00101	-0.00101	-0.00101
	(!A1 * A3 * !B1 * Y)	0.00118	0.00119	0.00118
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00101	-0.00101	-0.00101
	(!A1 * A3 * !A4 * B1 * !Y)	0.00119	0.00119	0.00118
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00100	-0.00100	-0.00101
	(!A1 * !A3 * A4 * B1 * !Y)	0.00109	0.00110	0.00110
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00100	-0.00100	-0.00101
	(!A1 * !A3 * A4 * !B1 * Y)	0.00110	0.00110	0.00110
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00090	-0.00094	-0.00094
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00122	0.00122	0.00122

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00208	-0.00207	-0.00207
	(A1 * A3 * A4 * B1 * !Y)	0.00193	0.00191	0.00191
	(A1 * A3 * !B1 * Y)	-0.00206	-0.00207	-0.00207
	(A1 * A3 * !B1 * Y)	0.00195	0.00196	0.00195
	(A1 * A3 * !A4 * B1 * !Y)	-0.00208	-0.00207	-0.00207
	(A1 * A3 * !A4 * B1 * !Y)	0.00189	0.00187	0.00187
	(A1 * !A3 * A4 * B1 * !Y)	-0.00207	-0.00207	-0.00207
	(A1 * !A3 * A4 * B1 * !Y)	0.00184	0.00183	0.00183
	(A1 * !A3 * A4 * !B1 * Y)	-0.00206	-0.00207	-0.00207
	(A1 * !A3 * A4 * !B1 * Y)	0.00194	0.00196	0.00196
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00207	-0.00207	-0.00207
	(A1 * !A3 * !A4 * B1 * !Y)	0.00176	0.00175	0.00176
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00207	-0.00208	-0.00207
	(A1 * !A3 * !A4 * !B1 * Y)	0.00243	0.00244	0.00243
	(!A1 * A3 * A4 * B1 * !Y)	-0.00206	-0.00208	-0.00207
	(!A1 * A3 * A4 * B1 * !Y)	0.00245	0.00249	0.00247
	(!A1 * A3 * !B1 * Y)	-0.00206	-0.00208	-0.00207
	(!A1 * A3 * !B1 * Y)	0.00246	0.00249	0.00247
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00206	-0.00208	-0.00207
	(!A1 * A3 * !A4 * B1 * !Y)	0.00245	0.00249	0.00247
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00207	-0.00207	-0.00207
	(!A1 * !A3 * A4 * B1 * !Y)	0.00231	0.00232	0.00232
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00206	-0.00207	-0.00207
	(!A1 * !A3 * A4 * !B1 * Y)	0.00232	0.00233	0.00233
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00185	-0.00193	-0.00192
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00255	0.00255	0.00254

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00392	-0.00393	-0.00393
	(A1 * A3 * A4 * B1 * !Y)	0.00364	0.00365	0.00365
	(A1 * A3 * !B1 * Y)	-0.00392	-0.00393	-0.00393
	(A1 * A3 * !B1 * Y)	0.00371	0.00373	0.00373
	(A1 * A3 * !A4 * B1 * !Y)	-0.00394	-0.00393	-0.00393
	(A1 * A3 * !A4 * B1 * !Y)	0.00359	0.00357	0.00357
	(A1 * !A3 * A4 * B1 * !Y)	-0.00393	-0.00393	-0.00393
	(A1 * !A3 * A4 * B1 * !Y)	0.00352	0.00351	0.00351
	(A1 * !A3 * A4 * !B1 * Y)	-0.00392	-0.00393	-0.00393
	(A1 * !A3 * A4 * !B1 * Y)	0.00373	0.00375	0.00375
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00393	-0.00393	-0.00393
	(A1 * !A3 * !A4 * B1 * !Y)	0.00338	0.00337	0.00337
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00391	-0.00395	-0.00393
	(A1 * !A3 * !A4 * !B1 * Y)	0.00474	0.00479	0.00476
	(!A1 * A3 * A4 * B1 * !Y)	-0.00394	-0.00395	-0.00393
	(!A1 * A3 * A4 * B1 * !Y)	0.00477	0.00480	0.00476
	(!A1 * A3 * !B1 * Y)	-0.00394	-0.00395	-0.00393
	(!A1 * A3 * !B1 * Y)	0.00478	0.00480	0.00476
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00394	-0.00395	-0.00393
	(!A1 * A3 * !A4 * B1 * !Y)	0.00477	0.00480	0.00476
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00392	-0.00393	-0.00393
	(!A1 * !A3 * A4 * B1 * !Y)	0.00445	0.00446	0.00447
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00392	-0.00393	-0.00393
	(!A1 * !A3 * A4 * !B1 * Y)	0.00447	0.00447	0.00448
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00351	-0.00368	-0.00366
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00497	0.00499	0.00496

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)**	0.00105	0.00105	0.00105
	(A2 * A4 * B1 * !Y)	-0.00087	-0.00086	-0.00086
	(A2 * A4 * !B1 * Y)	0.00101	0.00101	0.00101
	(A2 * A4 * !B1 * Y)	-0.00097	-0.00097	-0.00097
	(A2 * !A4 * B1 * !Y)	0.00105	0.00106	0.00105
	(A2 * !A4 * B1 * !Y)	-0.00081	-0.00082	-0.00082
	(A2 * !A4 * !B1 * Y)	0.00101	0.00102	0.00101
	(A2 * !A4 * !B1 * Y)	-0.00119	-0.00122	-0.00121
	(A1 * !A2 * A4 * B1 * !Y)	0.00106	0.00105	0.00105
	(A1 * !A2 * A4 * B1 * !Y)	-0.00090	-0.00090	-0.00089
	(A1 * !A2 * A4 * !B1 * Y)	0.00101	0.00102	0.00101
	(A1 * !A2 * A4 * !B1 * Y)	-0.00097	-0.00097	-0.00097
	(A1 * !A2 * !A4 * B1 * !Y)	0.00105	0.00106	0.00105
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00081	-0.00081	-0.00082
	(A1 * !A2 * !A4 * !B1 * Y)	0.00101	0.00100	0.00101
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00111	-0.00113	-0.00113
	(!A1 * !A2 * A4 * B1 * !Y)	0.00105	0.00106	0.00105
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00115	-0.00118	-0.00117
	(!A1 * !A2 * A4 * !B1 * Y)	0.00101	0.00102	0.00101
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00119	-0.00122	-0.00121
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00094	0.00095	0.00094
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00124	-0.00125	-0.00125

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00197	0.00197	0.00197
	(A2 * A4 * B1 * !Y)	-0.00177	-0.00176	-0.00175
	(A2 * A4 * !B1 * Y)	0.00196	0.00196	0.00195
	(A2 * A4 * !B1 * Y)	-0.00193	-0.00193	-0.00192
	(A2 * !A4 * B1 * !Y)	0.00196	0.00197	0.00196
	(A2 * !A4 * B1 * !Y)	-0.00167	-0.00167	-0.00168
	(A2 * !A4 * !B1 * Y)	0.00195	0.00196	0.00195
	(A2 * !A4 * !B1 * Y)	-0.00236	-0.00242	-0.00240
	(A1 * !A2 * A4 * B1 * !Y)	0.00197	0.00197	0.00196
	(A1 * !A2 * A4 * B1 * !Y)	-0.00180	-0.00182	-0.00181
	(A1 * !A2 * A4 * !B1 * Y)	0.00195	0.00198	0.00195
	(A1 * !A2 * A4 * !B1 * Y)	-0.00190	-0.00192	-0.00191
	(A1 * !A2 * !A4 * B1 * !Y)	0.00197	0.00197	0.00196
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00167	-0.00166	-0.00167
	(A1 * !A2 * !A4 * !B1 * Y)	0.00195	0.00195	0.00195
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00221	-0.00225	-0.00224
	(!A1 * !A2 * A4 * B1 * !Y)	0.00197	0.00196	0.00196
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00233	-0.00239	-0.00237
	(!A1 * !A2 * A4 * !B1 * Y)	0.00195	0.00195	0.00195
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00235	-0.00241	-0.00239
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00180	0.00182	0.00181
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00246	-0.00248	-0.00247

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00404	0.00404	0.00403
	(A2 * A4 * B1 * !Y)	-0.00353	-0.00353	-0.00352
	(A2 * A4 * !B1 * Y)	0.00404	0.00404	0.00402
	(A2 * A4 * !B1 * Y)	-0.00380	-0.00382	-0.00381
	(A2 * !A4 * B1 * !Y)	0.00403	0.00404	0.00402
	(A2 * !A4 * B1 * !Y)	-0.00338	-0.00338	-0.00340
	(A2 * !A4 * !B1 * Y)	0.00402	0.00401	0.00401
	(A2 * !A4 * !B1 * Y)	-0.00471	-0.00483	-0.00481
	(A1 * !A2 * A4 * B1 * !Y)	0.00402	0.00404	0.00402
	(A1 * !A2 * A4 * B1 * !Y)	-0.00366	-0.00366	-0.00365
	(A1 * !A2 * A4 * !B1 * Y)	0.00403	0.00408	0.00401
	(A1 * !A2 * A4 * !B1 * Y)	-0.00381	-0.00383	-0.00382
	(A1 * !A2 * !A4 * B1 * !Y)	0.00404	0.00404	0.00402
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00336	-0.00336	-0.00337
	(A1 * !A2 * !A4 * !B1 * Y)	0.00404	0.00407	0.00401
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00444	-0.00447	-0.00447
	(!A1 * !A2 * A4 * B1 * !Y)	0.00402	0.00402	0.00402
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00478	-0.00490	-0.00487
	(!A1 * !A2 * A4 * !B1 * Y)	0.00401	0.00402	0.00401
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00480	-0.00491	-0.00488
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00367	0.00370	0.00370
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00501	-0.00503	-0.00503

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)**	-0.00105	-0.00105	-0.00105
	(A2 * A4 * B1 * !Y)	0.00087	0.00086	0.00086
	(A2 * A4 * !B1 * Y)	-0.00101	-0.00101	-0.00101
	(A2 * A4 * !B1 * Y)	0.00097	0.00097	0.00097
	(A2 * !A4 * B1 * !Y)	-0.00105	-0.00104	-0.00104
	(A2 * !A4 * B1 * !Y)	0.00083	0.00083	0.00084
	(A2 * !A4 * !B1 * Y)	-0.00101	-0.00101	-0.00101
	(A2 * !A4 * !B1 * Y)	0.00122	0.00122	0.00121
	(A1 * !A2 * A4 * B1 * !Y)	-0.00105	-0.00105	-0.00105
	(A1 * !A2 * A4 * B1 * !Y)	0.00090	0.00090	0.00089
	(A1 * !A2 * A4 * !B1 * Y)	-0.00101	-0.00101	-0.00101
	(A1 * !A2 * A4 * !B1 * Y)	0.00097	0.00097	0.00097
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00102	-0.00102	-0.00103
	(A1 * !A2 * !A4 * B1 * !Y)	0.00084	0.00083	0.00083
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00100	-0.00100	-0.00101
	(A1 * !A2 * !A4 * !B1 * Y)	0.00113	0.00113	0.00113
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00105	-0.00105	-0.00105
	(!A1 * !A2 * A4 * B1 * !Y)	0.00118	0.00118	0.00117
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00101	-0.00101	-0.00101
	(!A1 * !A2 * A4 * !B1 * Y)	0.00122	0.00122	0.00121
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00090	-0.00095	-0.00094
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00125	0.00125	0.00125

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00197	-0.00196	-0.00196
	(A2 * A4 * B1 * !Y)	0.00177	0.00176	0.00175
	(A2 * A4 * !B1 * Y)	-0.00195	-0.00195	-0.00195
	(A2 * A4 * !B1 * Y)	0.00193	0.00193	0.00192
	(A2 * !A4 * B1 * !Y)	-0.00196	-0.00196	-0.00195
	(A2 * !A4 * B1 * !Y)	0.00171	0.00171	0.00171
	(A2 * !A4 * !B1 * Y)	-0.00195	-0.00196	-0.00195
	(A2 * !A4 * !B1 * Y)	0.00239	0.00242	0.00240
	(A1 * !A2 * A4 * B1 * !Y)	-0.00195	-0.00197	-0.00196
	(A1 * !A2 * A4 * B1 * !Y)	0.00180	0.00182	0.00181
	(A1 * !A2 * A4 * !B1 * Y)	-0.00194	-0.00195	-0.00195
	(A1 * !A2 * A4 * !B1 * Y)	0.00190	0.00192	0.00191
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00189	-0.00190	-0.00190
	(A1 * !A2 * !A4 * B1 * !Y)	0.00170	0.00170	0.00171
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00194	-0.00195	-0.00195
	(A1 * !A2 * !A4 * !B1 * Y)	0.00223	0.00225	0.00224
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00196	-0.00196	-0.00196
	(!A1 * !A2 * A4 * B1 * !Y)	0.00237	0.00239	0.00237
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00194	-0.00195	-0.00195
	(!A1 * !A2 * A4 * !B1 * Y)	0.00238	0.00241	0.00239
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00175	-0.00182	-0.00181
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00248	0.00248	0.00247

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00402	-0.00402	-0.00401
	(A2 * A4 * B1 * !Y)	0.00353	0.00353	0.00352
	(A2 * A4 * !B1 * Y)	-0.00400	-0.00401	-0.00400
	(A2 * A4 * !B1 * Y)	0.00380	0.00382	0.00381
	(A2 * !A4 * B1 * !Y)	-0.00401	-0.00401	-0.00401
	(A2 * !A4 * B1 * !Y)	0.00344	0.00344	0.00345
	(A2 * !A4 * !B1 * Y)	-0.00399	-0.00401	-0.00400
	(A2 * !A4 * !B1 * Y)	0.00479	0.00483	0.00481
	(A1 * !A2 * A4 * B1 * !Y)	-0.00402	-0.00402	-0.00401
	(A1 * !A2 * A4 * B1 * !Y)	0.00366	0.00366	0.00365
	(A1 * !A2 * A4 * !B1 * Y)	-0.00400	-0.00401	-0.00400
	(A1 * !A2 * A4 * !B1 * Y)	0.00381	0.00383	0.00382
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00389	-0.00389	-0.00392
	(A1 * !A2 * !A4 * B1 * !Y)	0.00343	0.00342	0.00344
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00400	-0.00400	-0.00400
	(A1 * !A2 * !A4 * !B1 * Y)	0.00447	0.00447	0.00447
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00400	-0.00402	-0.00401
	(!A1 * !A2 * A4 * B1 * !Y)	0.00485	0.00490	0.00487
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00400	-0.00402	-0.00400
	(!A1 * !A2 * A4 * !B1 * Y)	0.00487	0.00491	0.00488
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00357	-0.00370	-0.00370
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00505	0.00505	0.00504

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00116	0.00116	0.00116
	(A3 * B1 * !Y)	-0.00073	-0.00073	-0.00073
	(A3 * !B1 * Y)	0.00100	0.00101	0.00100
	(A3 * !B1 * Y)	-0.00119	-0.00123	-0.00122
	(A2 * !A3 * B1 * !Y)	0.00116	0.00116	0.00116
	(A2 * !A3 * B1 * !Y)	-0.00073	-0.00073	-0.00073
	(A2 * !A3 * !B1 * Y)	0.00100	0.00101	0.00100
	(A2 * !A3 * !B1 * Y)	-0.00112	-0.00114	-0.00114
	(A1 * !A2 * !A3 * B1 * !Y)	0.00116	0.00116	0.00116
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00073	-0.00073	-0.00073
	(A1 * !A2 * !A3 * !B1 * Y)	0.00100	0.00100	0.00100
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00111	-0.00112	-0.00112
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00093	0.00094	0.00094
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00125	-0.00125	-0.00125
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00225	0.00224	0.00224
	(A3 * B1 * !Y)	-0.00151	-0.00150	-0.00150
	(A3 * !B1 * Y)	0.00198	0.00199	0.00198
	(A3 * !B1 * Y)	-0.00238	-0.00244	-0.00242
	(A2 * !A3 * B1 * !Y)	0.00225	0.00224	0.00224
	(A2 * !A3 * B1 * !Y)	-0.00151	-0.00150	-0.00150
	(A2 * !A3 * !B1 * Y)	0.00197	0.00199	0.00198
	(A2 * !A3 * !B1 * Y)	-0.00221	-0.00228	-0.00227
	(A1 * !A2 * !A3 * B1 * !Y)	0.00224	0.00224	0.00224
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00150	-0.00150	-0.00150
	(A1 * !A2 * !A3 * !B1 * Y)	0.00198	0.00199	0.00198
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00219	-0.00224	-0.00223
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00183	0.00183	0.00184
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00250	-0.00249	-0.00250

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00463	0.00461	0.00461
	(A3 * B1 * !Y)	-0.00294	-0.00292	-0.00292
	(A3 * !B1 * Y)	0.00402	0.00405	0.00402
	(A3 * !B1 * Y)	-0.00473	-0.00481	-0.00482
	(A2 * !A3 * B1 * !Y)	0.00462	0.00462	0.00461
	(A2 * !A3 * B1 * !Y)	-0.00293	-0.00292	-0.00292
	(A2 * !A3 * !B1 * Y)	0.00404	0.00404	0.00402
	(A2 * !A3 * !B1 * Y)	-0.00441	-0.00448	-0.00447
	(A1 * !A2 * !A3 * B1 * !Y)	0.00462	0.00463	0.00461
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00293	-0.00293	-0.00292
	(A1 * !A2 * !A3 * !B1 * Y)	0.00403	0.00402	0.00402
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00436	-0.00439	-0.00438
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00372	0.00373	0.00370
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00498	-0.00499	-0.00497

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00113	-0.00113	-0.00116
	(A3 * B1 * !Y)	0.00076	0.00076	0.00074
	(A3 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(A3 * !B1 * Y)	0.00122	0.00123	0.00122
	(A2 * !A3 * B1 * !Y)	-0.00105	-0.00105	-0.00114
	(A2 * !A3 * B1 * !Y)	0.00081	0.00080	0.00074
	(A2 * !A3 * !B1 * Y)	-0.00100	-0.00100	-0.00100
	(A2 * !A3 * !B1 * Y)	0.00114	0.00114	0.00114
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00096	-0.00096	-0.00112
	(A1 * !A2 * !A3 * B1 * !Y)	0.00087	0.00086	0.00076
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00100	-0.00100	-0.00100
	(A1 * !A2 * !A3 * !B1 * Y)	0.00112	0.00112	0.00112
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00090	-0.00094	-0.00094
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00125	0.00125	0.00125
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00215	-0.00216	-0.00224
	(A3 * B1 * !Y)	0.00160	0.00159	0.00152
	(A3 * !B1 * Y)	-0.00197	-0.00199	-0.00198
	(A3 * !B1 * Y)	0.00241	0.00244	0.00242
	(A2 * !A3 * B1 * !Y)	-0.00199	-0.00199	-0.00221
	(A2 * !A3 * B1 * !Y)	0.00170	0.00168	0.00153
	(A2 * !A3 * !B1 * Y)	-0.00197	-0.00198	-0.00198
	(A2 * !A3 * !B1 * Y)	0.00226	0.00228	0.00227
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00176	-0.00179	-0.00214
	(A1 * !A2 * !A3 * B1 * !Y)	0.00180	0.00181	0.00157
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00197	-0.00198	-0.00198
	(A1 * !A2 * !A3 * !B1 * Y)	0.00222	0.00224	0.00223
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00178	-0.00183	-0.00184
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00251	0.00252	0.00250

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00444	-0.00446	-0.00461
	(A3 * B1 * !Y)	0.00308	0.00308	0.00296
	(A3 * !B1 * Y)	-0.00401	-0.00401	-0.00401
	(A3 * !B1 * Y)	0.00481	0.00481	0.00482
	(A2 * !A3 * B1 * !Y)	-0.00412	-0.00416	-0.00455
	(A2 * !A3 * B1 * !Y)	0.00324	0.00324	0.00296
	(A2 * !A3 * !B1 * Y)	-0.00400	-0.00402	-0.00401
	(A2 * !A3 * !B1 * Y)	0.00445	0.00448	0.00447
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00372	-0.00376	-0.00443
	(A1 * !A2 * !A3 * B1 * !Y)	0.00349	0.00348	0.00304
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00401	-0.00402	-0.00401
	(A1 * !A2 * !A3 * !B1 * Y)	0.00438	0.00439	0.00438
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00358	-0.00373	-0.00370
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00498	0.00499	0.00497

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)	0.00049	0.00049	0.00044
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00145	-0.00147	-0.00153
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00112	0.00113	0.00104
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00277	-0.00279	-0.00293
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00166	0.00167	0.00152
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00303	-0.00309	-0.00335

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)	-0.00044	-0.00043	-0.00043
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00155	0.00155	0.00154
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00102	-0.00101	-0.00101
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00295	0.00295	0.00294
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00149	-0.00147	-0.00147
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00338	0.00337	0.00337

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT
A1	A2	A3	A4	B1	X
0	0	0	0	x	0
0	0	x	1	0	0
0	0	x	1	1	1
0	x	1	x	0	0
0	x	1	x	1	1
x	1	x	x	0	0
x	1	x	x	1	1
1	x	x	x	0	0
1	x	x	x	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41a_1	14.38560
sky130_fd_sc_hs__o41a_2	15.98400
sky130_fd_sc_hs__o41a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__o41a_1	0.00236	0.00246	0.00246	0.00252	0.00232	0.35673
sky130_fd_sc_hs__o41a_2	0.00251	0.00264	0.00271	0.00261	0.00267	0.72671
sky130_fd_sc_hs__o41a_4	0.00449	0.00489	0.00494	0.00464	0.00432	1.36591

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.00016	0.00026
sky130_fd_sc_hs__o41a_2	0.00000	0.00026	0.00036
sky130_fd_sc_hs__o41a_4	0.00000	0.00047	0.00072

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)	0.19229	1.24032	8.99221
	A2->X (RR)	0.18885	1.22719	8.92717
	A3->X (RR)	0.18228	1.21063	8.85087
	A4->X (RR)	0.16984	1.18776	8.75643
	B1->X (RR)	0.17860	1.21810	8.72845
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.18651	1.08255	9.02109
	A2->X (RR)	0.18435	1.07293	8.97622
	A3->X (RR)	0.17976	1.06071	8.91892
	A4->X (RR)	0.16518	1.03860	8.84029
	B1->X (RR)	0.17384	1.07493	8.82591
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.20152	0.99597	9.14800
	A2->X (RR)	0.19856	0.98532	9.09625
	A3->X (RR)	0.18471	0.96660	9.02415
	A4->X (RR)	0.17823	0.94788	8.93841
	B1->X (RR)	0.18768	0.99760	8.97210

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	1.17197	2.03942	7.78641
	A2->X (FF)	1.13463	1.98575	7.83666
	A3->X (FF)	1.04464	1.88372	7.83512
	A4->X (FF)	0.90556	1.68411	7.19704
	B1->X (FF)	0.20619	0.99440	6.10775
sky130_fd_sc_hs__o41a_2	A1->X (FF)	1.50102	2.39855	8.37430
	A2->X (FF)	1.47033	2.35411	8.46793
	A3->X (FF)	1.38860	2.25723	8.51637
	A4->X (FF)	1.22450	2.03428	7.90964
	B1->X (FF)	0.23798	1.02736	6.49604
sky130_fd_sc_hs__o41a_4	A1->X (FF)	1.45061	2.30391	8.31054
	A2->X (FF)	1.41201	2.25020	8.36943
	A3->X (FF)	1.29908	2.11992	8.37258
	A4->X (FF)	1.13286	1.89421	7.74770
	B1->X (FF)	0.25675	1.01089	6.44508

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.00856	0.00857	0.00852
	A1	0.00379	0.00380	0.00377
	A2	0.00768	0.00768	0.00761
	A2	0.00335	0.00337	0.00331
	A3	0.00675	0.00676	0.00666
	A3	0.00286	0.00288	0.00280
	A4	0.00588	0.00585	0.00576
	A4	0.00237	0.00234	0.00226
	B1	0.00769	0.00766	0.00757
	B1	0.00405	0.00403	0.00394
sky130_fd_sc_hs__o41a_2	A1	0.01069	0.01086	0.01088
	A1	0.00552	0.00569	0.00577
	A2	0.00989	0.01004	0.01004
	A2	0.00514	0.00530	0.00535
	A3	0.00900	0.00917	0.00914
	A3	0.00462	0.00480	0.00481
	A4	0.00798	0.00811	0.00810
	A4	0.00408	0.00421	0.00425
	B1	0.00970	0.00978	0.00975
	B1	0.00566	0.00574	0.00575

sky130_fd_sc_hs__o41a_4	**A1**	0.02049	0.02076	0.02085
	A1	0.01109	0.01136	0.01161
	A2	0.01924	0.01956	0.01959
	A2	0.01024	0.01056	0.01070
	A3	0.01716	0.01752	0.01750
	A3	0.00907	0.00943	0.00951
	A4	0.01481	0.01517	0.01513
	A4	0.00793	0.00830	0.00834
	B1	0.01863	0.01885	0.01889
	B1	0.01151	0.01172	0.01185

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00300	0.00309	0.00309
	A1	0.00776	0.00785	0.00782
	A2	0.00302	0.00311	0.00310
	A2	0.00729	0.00738	0.00734
	A3	0.00303	0.00311	0.00316
	A3	0.00683	0.00691	0.00688
	A4	0.00301	0.00305	0.00404
	A4	0.00640	0.00644	0.00639
	B1	0.00219	0.00209	0.00229
	B1	0.00595	0.00582	0.00580

sky130_fd_sc_hs__o41a_2	**A1**	0.00453	0.00477	0.00490
	A1	0.00966	0.00991	0.00999
	A2	0.00456	0.00481	0.00506
	A2	0.00923	0.00947	0.00955
	A3	0.00456	0.00477	0.00512
	A3	0.00883	0.00904	0.00911
	A4	0.00455	0.00474	0.00497
	A4	0.00832	0.00851	0.00854
	B1	0.00376	0.00378	0.00443
	B1	0.00792	0.00793	0.00792
sky130_fd_sc_hs__o41a_4	**A1**	0.00886	0.00938	0.00977
	A1	0.01828	0.01880	0.01909
	A2	0.00842	0.00895	0.00932
	A2	0.01735	0.01787	0.01814
	A3	0.00851	0.00900	0.00931
	A3	0.01641	0.01691	0.01714
	A4	0.00885	0.00928	0.00957
	A4	0.01549	0.01593	0.01610
	B1	0.00753	0.00762	0.00909
	B1	0.01490	0.01505	0.01513

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)**	0.00091	0.00091	0.00091
	(A2 * A4 * B1 * X)	-0.00122	-0.00125	-0.00124
	(A2 * A3 * !A4 * B1 * X)	0.00091	0.00091	0.00091
	(A2 * A3 * !A4 * B1 * X)	-0.00122	-0.00125	-0.00124
	(A2 * !B1 * !X)	0.00091	0.00091	0.00091
	(A2 * !B1 * !X)	-0.00122	-0.00125	-0.00124
	(A2 * !A3 * !A4 * B1 * X)	0.00091	0.00091	0.00091
	(A2 * !A3 * !A4 * B1 * X)	-0.00122	-0.00125	-0.00124
	(!A2 * A3 * A4 * B1 * X)	0.00091	0.00090	0.00090
	(!A2 * A3 * A4 * B1 * X)	-0.00115	-0.00118	-0.00118
	(!A2 * A3 * !B1 * !X)	0.00091	0.00090	0.00090
	(!A2 * A3 * !B1 * !X)	-0.00115	-0.00118	-0.00118
	(!A2 * A3 * !A4 * B1 * X)	0.00091	0.00090	0.00090
	(!A2 * A3 * !A4 * B1 * X)	-0.00115	-0.00118	-0.00118
	(!A2 * !A3 * A4 * B1 * X)	0.00091	0.00091	0.00091
	(!A2 * !A3 * A4 * B1 * X)	-0.00113	-0.00116	-0.00116
	(!A2 * !A3 * A4 * !B1 * !X)	0.00091	0.00091	0.00091
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00113	-0.00116	-0.00116
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00085	0.00085	0.00085
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00126	-0.00126	-0.00126

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00104	0.00105	0.00104
	(A2 * A4 * B1 * X)	-0.00118	-0.00121	-0.00121
	(A2 * A3 * !A4 * B1 * X)	0.00104	0.00105	0.00104
	(A2 * A3 * !A4 * B1 * X)	-0.00118	-0.00122	-0.00121
	(A2 * !B1 * !X)	0.00105	0.00105	0.00104
	(A2 * !B1 * !X)	-0.00119	-0.00121	-0.00121
	(A2 * !A3 * !A4 * B1 * X)	0.00104	0.00105	0.00104
	(A2 * !A3 * !A4 * B1 * X)	-0.00118	-0.00122	-0.00121
	(!A2 * A3 * A4 * B1 * X)	0.00105	0.00104	0.00104
	(!A2 * A3 * A4 * B1 * X)	-0.00112	-0.00115	-0.00115
	(!A2 * A3 * !B1 * !X)	0.00105	0.00104	0.00104
	(!A2 * A3 * !B1 * !X)	-0.00112	-0.00115	-0.00115
	(!A2 * A3 * !A4 * B1 * X)	0.00105	0.00104	0.00104
	(!A2 * A3 * !A4 * B1 * X)	-0.00112	-0.00115	-0.00115
	(!A2 * !A3 * A4 * B1 * X)	0.00105	0.00105	0.00104
	(!A2 * !A3 * A4 * B1 * X)	-0.00111	-0.00113	-0.00114
	(!A2 * !A3 * A4 * !B1 * !X)	0.00105	0.00105	0.00104
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00111	-0.00113	-0.00114
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00097	0.00097	0.00097
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00124	-0.00124	-0.00124

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00166	0.00167	0.00166
	(A2 * A4 * B1 * X)	-0.00235	-0.00243	-0.00240
	(A2 * A3 * !A4 * B1 * X)	0.00166	0.00167	0.00166
	(A2 * A3 * !A4 * B1 * X)	-0.00235	-0.00243	-0.00240
	(A2 * !B1 * !X)	0.00165	0.00167	0.00166
	(A2 * !B1 * !X)	-0.00236	-0.00243	-0.00241
	(A2 * !A3 * !A4 * B1 * X)	0.00166	0.00167	0.00166
	(A2 * !A3 * !A4 * B1 * X)	-0.00235	-0.00242	-0.00240
	(!A2 * A3 * A4 * B1 * X)	0.00166	0.00167	0.00166
	(!A2 * A3 * A4 * B1 * X)	-0.00219	-0.00227	-0.00227
	(!A2 * A3 * !B1 * !X)	0.00165	0.00167	0.00166
	(!A2 * A3 * !B1 * !X)	-0.00220	-0.00228	-0.00228
	(!A2 * A3 * !A4 * B1 * X)	0.00166	0.00167	0.00166
	(!A2 * A3 * !A4 * B1 * X)	-0.00219	-0.00227	-0.00227
	(!A2 * !A3 * A4 * B1 * X)	0.00165	0.00168	0.00166
	(!A2 * !A3 * A4 * B1 * X)	-0.00216	-0.00224	-0.00224
	(!A2 * !A3 * A4 * !B1 * !X)	0.00165	0.00167	0.00166
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00217	-0.00224	-0.00224
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00153	0.00154	0.00153
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00248	-0.00249	-0.00248

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)**	-0.00091	-0.00091	-0.00090
	(A2 * A4 * B1 * X)	0.00124	0.00125	0.00124
	(A2 * A3 * !A4 * B1 * X)	-0.00091	-0.00091	-0.00090
	(A2 * A3 * !A4 * B1 * X)	0.00124	0.00125	0.00124
	(A2 * !B1 * !X)	-0.00091	-0.00091	-0.00090
	(A2 * !B1 * !X)	0.00124	0.00125	0.00124
	(A2 * !A3 * !A4 * B1 * X)	-0.00091	-0.00091	-0.00090
	(A2 * !A3 * !A4 * B1 * X)	0.00125	0.00125	0.00124
	(!A2 * A3 * A4 * B1 * X)	-0.00091	-0.00090	-0.00090
	(!A2 * A3 * A4 * B1 * X)	0.00118	0.00118	0.00118
	(!A2 * A3 * !B1 * !X)	-0.00091	-0.00090	-0.00090
	(!A2 * A3 * !B1 * !X)	0.00119	0.00118	0.00118
	(!A2 * A3 * !A4 * B1 * X)	-0.00091	-0.00090	-0.00090
	(!A2 * A3 * !A4 * B1 * X)	0.00119	0.00118	0.00118
	(!A2 * !A3 * A4 * B1 * X)	-0.00091	-0.00090	-0.00090
	(!A2 * !A3 * A4 * B1 * X)	0.00117	0.00116	0.00116
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00091	-0.00090	-0.00090
	(!A2 * !A3 * A4 * !B1 * !X)	0.00117	0.00116	0.00116
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00082	-0.00085	-0.00085
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00127	0.00127	0.00126

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00104	-0.00104	-0.00104
	(A2 * A4 * B1 * X)	0.00121	0.00121	0.00121
	(A2 * A3 * !A4 * B1 * X)	-0.00104	-0.00105	-0.00104
	(A2 * A3 * !A4 * B1 * X)	0.00121	0.00122	0.00121
	(A2 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(A2 * !B1 * !X)	0.00121	0.00121	0.00121
	(A2 * !A3 * !A4 * B1 * X)	-0.00104	-0.00105	-0.00104
	(A2 * !A3 * !A4 * B1 * X)	0.00121	0.00122	0.00121
	(!A2 * A3 * A4 * B1 * X)	-0.00105	-0.00104	-0.00104
	(!A2 * A3 * A4 * B1 * X)	0.00116	0.00115	0.00115
	(!A2 * A3 * !B1 * !X)	-0.00105	-0.00104	-0.00104
	(!A2 * A3 * !B1 * !X)	0.00116	0.00115	0.00115
	(!A2 * A3 * !A4 * B1 * X)	-0.00105	-0.00104	-0.00104
	(!A2 * A3 * !A4 * B1 * X)	0.00116	0.00115	0.00115
	(!A2 * !A3 * A4 * B1 * X)	-0.00105	-0.00104	-0.00104
	(!A2 * !A3 * A4 * B1 * X)	0.00115	0.00113	0.00114
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00104	-0.00104	-0.00104
	(!A2 * !A3 * A4 * !B1 * !X)	0.00113	0.00113	0.00114
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00094	-0.00097	-0.00097
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00124	0.00124	0.00124

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00166	-0.00166	-0.00165
	(A2 * A4 * B1 * X)	0.00242	0.00243	0.00240
	(A2 * A3 * !A4 * B1 * X)	-0.00166	-0.00166	-0.00165
	(A2 * A3 * !A4 * B1 * X)	0.00242	0.00243	0.00240
	(A2 * !B1 * !X)	-0.00165	-0.00166	-0.00165
	(A2 * !B1 * !X)	0.00242	0.00243	0.00241
	(A2 * !A3 * !A4 * B1 * X)	-0.00166	-0.00166	-0.00165
	(A2 * !A3 * !A4 * B1 * X)	0.00242	0.00242	0.00240
	(!A2 * A3 * A4 * B1 * X)	-0.00166	-0.00166	-0.00166
	(!A2 * A3 * A4 * B1 * X)	0.00229	0.00227	0.00227
	(!A2 * A3 * !B1 * !X)	-0.00165	-0.00165	-0.00165
	(!A2 * A3 * !B1 * !X)	0.00229	0.00228	0.00228
	(!A2 * A3 * !A4 * B1 * X)	-0.00166	-0.00166	-0.00166
	(!A2 * A3 * !A4 * B1 * X)	0.00229	0.00227	0.00227
	(!A2 * !A3 * A4 * B1 * X)	-0.00165	-0.00166	-0.00166
	(!A2 * !A3 * A4 * B1 * X)	0.00225	0.00224	0.00224
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00165	-0.00165	-0.00165
	(!A2 * !A3 * A4 * !B1 * !X)	0.00222	0.00224	0.00224
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00148	-0.00154	-0.00153
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00250	0.00250	0.00249

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)**	0.00087	0.00087	0.00087
	(A1 * A3 * A4 * B1 * X)	-0.00093	-0.00094	-0.00094
	(A1 * A3 * !B1 * !X)	0.00087	0.00087	0.00087
	(A1 * A3 * !B1 * !X)	-0.00096	-0.00096	-0.00096
	(A1 * A3 * !A4 * B1 * X)	0.00088	0.00087	0.00087
	(A1 * A3 * !A4 * B1 * X)	-0.00093	-0.00092	-0.00092
	(A1 * !A3 * A4 * B1 * X)	0.00088	0.00087	0.00087
	(A1 * !A3 * A4 * B1 * X)	-0.00089	-0.00090	-0.00090
	(A1 * !A3 * A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * !A3 * A4 * !B1 * !X)	-0.00095	-0.00096	-0.00095
	(A1 * !A3 * !A4 * B1 * X)	0.00088	0.00087	0.00087
	(A1 * !A3 * !A4 * B1 * X)	-0.00086	-0.00085	-0.00085
	(A1 * !A3 * !A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00118	-0.00120	-0.00120
	(!A1 * A3 * A4 * B1 * X)	0.00087	0.00088	0.00087
	(!A1 * A3 * A4 * B1 * X)	-0.00118	-0.00121	-0.00120
	(!A1 * A3 * !B1 * !X)	0.00087	0.00088	0.00087
	(!A1 * A3 * !B1 * !X)	-0.00118	-0.00121	-0.00120
	(!A1 * A3 * !A4 * B1 * X)	0.00087	0.00088	0.00087
	(!A1 * A3 * !A4 * B1 * X)	-0.00118	-0.00121	-0.00120
	(!A1 * !A3 * A4 * B1 * X)	0.00087	0.00088	0.00087
	(!A1 * !A3 * A4 * B1 * X)	-0.00110	-0.00113	-0.00113
	(!A1 * !A3 * A4 * !B1 * !X)	0.00087	0.00088	0.00087
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00110	-0.00112	-0.00113
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00082	0.00082	0.00082
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00123	-0.00123	-0.00123

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00100	0.00100	0.00100
	(A1 * A3 * A4 * B1 * X)	-0.00092	-0.00093	-0.00093
	(A1 * A3 * !B1 * !X)	0.00100	0.00100	0.00100
	(A1 * A3 * !B1 * !X)	-0.00095	-0.00095	-0.00095
	(A1 * A3 * !A4 * B1 * X)	0.00101	0.00100	0.00100
	(A1 * A3 * !A4 * B1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !A3 * A4 * B1 * X)	0.00101	0.00100	0.00100
	(A1 * !A3 * A4 * B1 * X)	-0.00089	-0.00089	-0.00089
	(A1 * !A3 * A4 * !B1 * !X)	0.00100	0.00101	0.00100
	(A1 * !A3 * A4 * !B1 * !X)	-0.00095	-0.00095	-0.00095
	(A1 * !A3 * !A4 * B1 * X)	0.00101	0.00100	0.00100
	(A1 * !A3 * !A4 * B1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * !A3 * !A4 * !B1 * !X)	0.00100	0.00100	0.00100
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00118	-0.00120	-0.00120
	(!A1 * A3 * A4 * B1 * X)	0.00100	0.00101	0.00100
	(!A1 * A3 * A4 * B1 * X)	-0.00118	-0.00121	-0.00120
	(!A1 * A3 * !B1 * !X)	0.00100	0.00101	0.00100
	(!A1 * A3 * !B1 * !X)	-0.00118	-0.00121	-0.00120
	(!A1 * A3 * !A4 * B1 * X)	0.00100	0.00101	0.00100
	(!A1 * A3 * !A4 * B1 * X)	-0.00118	-0.00121	-0.00120
	(!A1 * !A3 * A4 * B1 * X)	0.00100	0.00101	0.00100
	(!A1 * !A3 * A4 * B1 * X)	-0.00109	-0.00112	-0.00112
	(!A1 * !A3 * A4 * !B1 * !X)	0.00100	0.00101	0.00100
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00109	-0.00112	-0.00112
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00123	-0.00124	-0.00123

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00211	0.00214	0.00211
	(A1 * A3 * A4 * B1 * X)	-0.00182	-0.00184	-0.00183
	(A1 * A3 * !B1 * !X)	0.00209	0.00212	0.00209
	(A1 * A3 * !B1 * !X)	-0.00188	-0.00190	-0.00189
	(A1 * A3 * !A4 * B1 * X)	0.00212	0.00214	0.00211
	(A1 * A3 * !A4 * B1 * X)	-0.00178	-0.00179	-0.00178
	(A1 * !A3 * A4 * B1 * X)	0.00208	0.00212	0.00210
	(A1 * !A3 * A4 * B1 * X)	-0.00174	-0.00175	-0.00174
	(A1 * !A3 * A4 * !B1 * !X)	0.00209	0.00212	0.00209
	(A1 * !A3 * A4 * !B1 * !X)	-0.00186	-0.00189	-0.00186
	(A1 * !A3 * !A4 * B1 * X)	0.00209	0.00212	0.00210
	(A1 * !A3 * !A4 * B1 * X)	-0.00165	-0.00167	-0.00165
	(A1 * !A3 * !A4 * !B1 * !X)	0.00209	0.00209	0.00209
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00232	-0.00237	-0.00236
	(!A1 * A3 * A4 * B1 * X)	0.00211	0.00210	0.00209
	(!A1 * A3 * A4 * B1 * X)	-0.00229	-0.00236	-0.00234
	(!A1 * A3 * !B1 * !X)	0.00209	0.00210	0.00209
	(!A1 * A3 * !B1 * !X)	-0.00230	-0.00237	-0.00235
	(!A1 * A3 * !A4 * B1 * X)	0.00211	0.00210	0.00209
	(!A1 * A3 * !A4 * B1 * X)	-0.00229	-0.00236	-0.00234
	(!A1 * !A3 * A4 * B1 * X)	0.00210	0.00211	0.00209
	(!A1 * !A3 * A4 * B1 * X)	-0.00216	-0.00223	-0.00220
	(!A1 * !A3 * A4 * !B1 * !X)	0.00210	0.00211	0.00209
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00216	-0.00224	-0.00221
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00196	0.00199	0.00197
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00242	-0.00245	-0.00243

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)**	-0.00086	-0.00087	-0.00087
	(A1 * A3 * A4 * B1 * X)	0.00093	0.00094	0.00094
	(A1 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * A3 * !B1 * !X)	0.00096	0.00096	0.00096
	(A1 * A3 * !A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * A3 * !A4 * B1 * X)	0.00093	0.00092	0.00092
	(A1 * !A3 * A4 * B1 * X)	-0.00086	-0.00087	-0.00087
	(A1 * !A3 * A4 * B1 * X)	0.00089	0.00090	0.00090
	(A1 * !A3 * A4 * !B1 * !X)	-0.00086	-0.00087	-0.00087
	(A1 * !A3 * A4 * !B1 * !X)	0.00095	0.00096	0.00095
	(A1 * !A3 * !A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(A1 * !A3 * !A4 * B1 * X)	0.00086	0.00086	0.00086
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(A1 * !A3 * !A4 * !B1 * !X)	0.00120	0.00120	0.00120
	(!A1 * A3 * A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * A3 * A4 * B1 * X)	0.00121	0.00121	0.00120
	(!A1 * A3 * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1 * A3 * !B1 * !X)	0.00121	0.00121	0.00120
	(!A1 * A3 * !A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * A3 * !A4 * B1 * X)	0.00121	0.00121	0.00120
	(!A1 * !A3 * A4 * B1 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A3 * A4 * B1 * X)	0.00113	0.00113	0.00113
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00086	-0.00087	-0.00087
	(!A1 * !A3 * A4 * !B1 * !X)	0.00112	0.00112	0.00113
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00079	-0.00082	-0.00082
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00123	0.00123	0.00123

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00100	-0.00100	-0.00100
	(A1 * A3 * A4 * B1 * X)	0.00092	0.00093	0.00093
	(A1 * A3 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * A3 * !B1 * !X)	0.00095	0.00095	0.00095
	(A1 * A3 * !A4 * B1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * A3 * !A4 * B1 * X)	0.00091	0.00091	0.00091
	(A1 * !A3 * A4 * B1 * X)	-0.00099	-0.00100	-0.00100
	(A1 * !A3 * A4 * B1 * X)	0.00089	0.00089	0.00089
	(A1 * !A3 * A4 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * A4 * !B1 * !X)	0.00095	0.00095	0.00095
	(A1 * !A3 * !A4 * B1 * X)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * !A4 * B1 * X)	0.00085	0.00085	0.00086
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(A1 * !A3 * !A4 * !B1 * !X)	0.00121	0.00120	0.00120
	(!A1 * A3 * A4 * B1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * A3 * A4 * B1 * X)	0.00120	0.00121	0.00120
	(!A1 * A3 * !B1 * !X)	-0.00100	-0.00100	-0.00100
	(!A1 * A3 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * A3 * !A4 * B1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * A3 * !A4 * B1 * X)	0.00120	0.00121	0.00120
	(!A1 * !A3 * A4 * B1 * X)	-0.00100	-0.00100	-0.00100
	(!A1 * !A3 * A4 * B1 * X)	0.00112	0.00112	0.00112
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00099	-0.00100	-0.00100
	(!A1 * !A3 * A4 * !B1 * !X)	0.00112	0.00112	0.00112
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00089	-0.00094	-0.00093
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00124	0.00124	0.00124

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00209	-0.00211	-0.00210
	(A1 * A3 * A4 * B1 * X)	0.00182	0.00184	0.00183
	(A1 * A3 * !B1 * !X)	-0.00208	-0.00210	-0.00208
	(A1 * A3 * !B1 * !X)	0.00188	0.00190	0.00189
	(A1 * A3 * !A4 * B1 * X)	-0.00210	-0.00211	-0.00209
	(A1 * A3 * !A4 * B1 * X)	0.00178	0.00179	0.00178
	(A1 * !A3 * A4 * B1 * X)	-0.00208	-0.00210	-0.00209
	(A1 * !A3 * A4 * B1 * X)	0.00174	0.00175	0.00174
	(A1 * !A3 * A4 * !B1 * !X)	-0.00208	-0.00210	-0.00208
	(A1 * !A3 * A4 * !B1 * !X)	0.00186	0.00189	0.00186
	(A1 * !A3 * !A4 * B1 * X)	-0.00208	-0.00210	-0.00209
	(A1 * !A3 * !A4 * B1 * X)	0.00166	0.00168	0.00167
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00208	-0.00209	-0.00208
	(A1 * !A3 * !A4 * !B1 * !X)	0.00235	0.00237	0.00236
	(!A1 * A3 * A4 * B1 * X)	-0.00209	-0.00210	-0.00209
	(!A1 * A3 * A4 * B1 * X)	0.00233	0.00236	0.00234
	(!A1 * A3 * !B1 * !X)	-0.00208	-0.00210	-0.00208
	(!A1 * A3 * !B1 * !X)	0.00234	0.00237	0.00235
	(!A1 * A3 * !A4 * B1 * X)	-0.00209	-0.00210	-0.00209
	(!A1 * A3 * !A4 * B1 * X)	0.00233	0.00236	0.00234
	(!A1 * !A3 * A4 * B1 * X)	-0.00209	-0.00211	-0.00209
	(!A1 * !A3 * A4 * B1 * X)	0.00219	0.00223	0.00220
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00208	-0.00210	-0.00208
	(!A1 * !A3 * A4 * !B1 * !X)	0.00220	0.00224	0.00221
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00191	-0.00199	-0.00197
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00243	0.00245	0.00244

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)**	0.00086	0.00087	0.00086
	(A2 * A4 * B1 * X)	-0.00086	-0.00086	-0.00086
	(A2 * A4 * !B1 * !X)	0.00087	0.00086	0.00086
	(A2 * A4 * !B1 * !X)	-0.00092	-0.00092	-0.00092
	(A2 * !A4 * B1 * X)	0.00088	0.00087	0.00086
	(A2 * !A4 * B1 * X)	-0.00082	-0.00081	-0.00082
	(A2 * !A4 * !B1 * !X)	0.00087	0.00087	0.00086
	(A2 * !A4 * !B1 * !X)	-0.00115	-0.00117	-0.00117
	(A1 * !A2 * A4 * B1 * X)	0.00087	0.00087	0.00086
	(A1 * !A2 * A4 * B1 * X)	-0.00089	-0.00089	-0.00089
	(A1 * !A2 * A4 * !B1 * !X)	0.00087	0.00088	0.00086
	(A1 * !A2 * A4 * !B1 * !X)	-0.00092	-0.00093	-0.00092
	(A1 * !A2 * !A4 * B1 * X)	0.00088	0.00087	0.00086
	(A1 * !A2 * !A4 * B1 * X)	-0.00082	-0.00081	-0.00081
	(A1 * !A2 * !A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00106	-0.00108	-0.00109
	(!A1 * !A2 * A4 * B1 * X)	0.00087	0.00087	0.00086
	(!A1 * !A2 * A4 * B1 * X)	-0.00114	-0.00118	-0.00117
	(!A1 * !A2 * A4 * !B1 * !X)	0.00086	0.00087	0.00086
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00115	-0.00118	-0.00117
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00081	0.00081	0.00081
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00120	-0.00120	-0.00120

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00106	0.00106	0.00106
	(A2 * A4 * B1 * X)	-0.00088	-0.00087	-0.00087
	(A2 * A4 * !B1 * !X)	0.00101	0.00101	0.00101
	(A2 * A4 * !B1 * !X)	-0.00098	-0.00099	-0.00098
	(A2 * !A4 * B1 * X)	0.00108	0.00106	0.00106
	(A2 * !A4 * B1 * X)	-0.00084	-0.00082	-0.00083
	(A2 * !A4 * !B1 * !X)	0.00101	0.00102	0.00101
	(A2 * !A4 * !B1 * !X)	-0.00120	-0.00123	-0.00122
	(A1 * !A2 * A4 * B1 * X)	0.00107	0.00106	0.00106
	(A1 * !A2 * A4 * B1 * X)	-0.00089	-0.00090	-0.00090
	(A1 * !A2 * A4 * !B1 * !X)	0.00101	0.00102	0.00101
	(A1 * !A2 * A4 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A2 * !A4 * B1 * X)	0.00108	0.00107	0.00106
	(A1 * !A2 * !A4 * B1 * X)	-0.00083	-0.00082	-0.00083
	(A1 * !A2 * !A4 * !B1 * !X)	0.00101	0.00102	0.00101
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00112	-0.00114	-0.00114
	(!A1 * !A2 * A4 * B1 * X)	0.00106	0.00106	0.00106
	(!A1 * !A2 * A4 * B1 * X)	-0.00116	-0.00119	-0.00118
	(!A1 * !A2 * A4 * !B1 * !X)	0.00101	0.00102	0.00101
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00120	-0.00123	-0.00122
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00126	-0.00126	-0.00126

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00207	0.00210	0.00208
	(A2 * A4 * B1 * X)	-0.00173	-0.00174	-0.00172
	(A2 * A4 * !B1 * !X)	0.00205	0.00209	0.00205
	(A2 * A4 * !B1 * !X)	-0.00188	-0.00190	-0.00188
	(A2 * !A4 * B1 * X)	0.00209	0.00211	0.00208
	(A2 * !A4 * B1 * X)	-0.00162	-0.00164	-0.00162
	(A2 * !A4 * !B1 * !X)	0.00205	0.00206	0.00205
	(A2 * !A4 * !B1 * !X)	-0.00229	-0.00235	-0.00233
	(A1 * !A2 * A4 * B1 * X)	0.00207	0.00210	0.00208
	(A1 * !A2 * A4 * B1 * X)	-0.00176	-0.00179	-0.00177
	(A1 * !A2 * A4 * !B1 * !X)	0.00205	0.00209	0.00205
	(A1 * !A2 * A4 * !B1 * !X)	-0.00187	-0.00189	-0.00186
	(A1 * !A2 * !A4 * B1 * X)	0.00209	0.00211	0.00208
	(A1 * !A2 * !A4 * B1 * X)	-0.00161	-0.00163	-0.00162
	(A1 * !A2 * !A4 * !B1 * !X)	0.00206	0.00206	0.00205
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00215	-0.00221	-0.00218
	(!A1 * !A2 * A4 * B1 * X)	0.00207	0.00208	0.00207
	(!A1 * !A2 * A4 * B1 * X)	-0.00230	-0.00235	-0.00234
	(!A1 * !A2 * A4 * !B1 * !X)	0.00205	0.00206	0.00205
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00231	-0.00236	-0.00236
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00192	0.00194	0.00193
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00242	-0.00243	-0.00242

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)**	-0.00086	-0.00086	-0.00086
	(A2 * A4 * B1 * X)	0.00086	0.00086	0.00086
	(A2 * A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A2 * A4 * !B1 * !X)	0.00092	0.00092	0.00092
	(A2 * !A4 * B1 * X)	-0.00086	-0.00086	-0.00086
	(A2 * !A4 * B1 * X)	0.00083	0.00083	0.00083
	(A2 * !A4 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(A2 * !A4 * !B1 * !X)	0.00117	0.00117	0.00117
	(A1 * !A2 * A4 * B1 * X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * A4 * B1 * X)	0.00089	0.00089	0.00089
	(A1 * !A2 * A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * A4 * !B1 * !X)	0.00092	0.00093	0.00092
	(A1 * !A2 * !A4 * B1 * X)	-0.00082	-0.00083	-0.00085
	(A1 * !A2 * !A4 * B1 * X)	0.00083	0.00083	0.00082
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * !A4 * !B1 * !X)	0.00108	0.00108	0.00109
	(!A1 * !A2 * A4 * B1 * X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * A4 * B1 * X)	0.00117	0.00118	0.00117
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00086	-0.00087	-0.00086
	(!A1 * !A2 * A4 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00078	-0.00081	-0.00081
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00120	0.00120	0.00120

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00106	-0.00106	-0.00106
	(A2 * A4 * B1 * X)	0.00088	0.00087	0.00087
	(A2 * A4 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(A2 * A4 * !B1 * !X)	0.00098	0.00099	0.00098
	(A2 * !A4 * B1 * X)	-0.00106	-0.00105	-0.00105
	(A2 * !A4 * B1 * X)	0.00085	0.00084	0.00084
	(A2 * !A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(A2 * !A4 * !B1 * !X)	0.00123	0.00123	0.00122
	(A1 * !A2 * A4 * B1 * X)	-0.00105	-0.00106	-0.00106
	(A1 * !A2 * A4 * B1 * X)	0.00089	0.00090	0.00090
	(A1 * !A2 * A4 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(A1 * !A2 * A4 * !B1 * !X)	0.00098	0.00098	0.00098
	(A1 * !A2 * !A4 * B1 * X)	-0.00102	-0.00103	-0.00104
	(A1 * !A2 * !A4 * B1 * X)	0.00083	0.00083	0.00084
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(A1 * !A2 * !A4 * !B1 * !X)	0.00114	0.00114	0.00114
	(!A1 * !A2 * A4 * B1 * X)	-0.00106	-0.00106	-0.00106
	(!A1 * !A2 * A4 * B1 * X)	0.00119	0.00119	0.00118
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00101	-0.00102	-0.00101
	(!A1 * !A2 * A4 * !B1 * !X)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00090	-0.00094	-0.00094
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00126	0.00126	0.00126

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00207	-0.00209	-0.00207
	(A2 * A4 * B1 * X)	0.00173	0.00174	0.00172
	(A2 * A4 * !B1 * !X)	-0.00205	-0.00206	-0.00205
	(A2 * A4 * !B1 * !X)	0.00188	0.00190	0.00188
	(A2 * !A4 * B1 * X)	-0.00207	-0.00208	-0.00205
	(A2 * !A4 * B1 * X)	0.00165	0.00166	0.00166
	(A2 * !A4 * !B1 * !X)	-0.00205	-0.00206	-0.00205
	(A2 * !A4 * !B1 * !X)	0.00233	0.00235	0.00233
	(A1 * !A2 * A4 * B1 * X)	-0.00207	-0.00209	-0.00207
	(A1 * !A2 * A4 * B1 * X)	0.00176	0.00179	0.00177
	(A1 * !A2 * A4 * !B1 * !X)	-0.00205	-0.00207	-0.00205
	(A1 * !A2 * A4 * !B1 * !X)	0.00187	0.00189	0.00186
	(A1 * !A2 * !A4 * B1 * X)	-0.00197	-0.00200	-0.00203
	(A1 * !A2 * !A4 * B1 * X)	0.00166	0.00168	0.00165
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00204	-0.00206	-0.00205
	(A1 * !A2 * !A4 * !B1 * !X)	0.00218	0.00221	0.00218
	(!A1 * !A2 * A4 * B1 * X)	-0.00206	-0.00207	-0.00206
	(!A1 * !A2 * A4 * B1 * X)	0.00233	0.00235	0.00234
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00204	-0.00205	-0.00205
	(!A1 * !A2 * A4 * !B1 * !X)	0.00235	0.00236	0.00236
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00186	-0.00194	-0.00193
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00242	0.00244	0.00243

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00100	0.00100	0.00100
	(A3 * B1 * X)	-0.00073	-0.00073	-0.00073
	(A3 * !B1 * !X)	0.00088	0.00088	0.00088
	(A3 * !B1 * !X)	-0.00117	-0.00120	-0.00119
	(A2 * !A3 * B1 * X)	0.00100	0.00100	0.00100
	(A2 * !A3 * B1 * X)	-0.00073	-0.00073	-0.00073
	(A2 * !A3 * !B1 * !X)	0.00088	0.00087	0.00088
	(A2 * !A3 * !B1 * !X)	-0.00110	-0.00111	-0.00112
	(A1 * !A2 * !A3 * B1 * X)	0.00102	0.00100	0.00100
	(A1 * !A2 * !A3 * B1 * X)	-0.00074	-0.00073	-0.00073
	(A1 * !A2 * !A3 * !B1 * !X)	0.00088	0.00089	0.00088
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00108	-0.00109	-0.00110
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00083	0.00082	0.00082
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00122	-0.00122	-0.00122
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00114	0.00113	0.00113
	(A3 * B1 * X)	-0.00075	-0.00074	-0.00074
	(A3 * !B1 * !X)	0.00101	0.00101	0.00101
	(A3 * !B1 * !X)	-0.00117	-0.00119	-0.00118
	(A2 * !A3 * B1 * X)	0.00114	0.00113	0.00113
	(A2 * !A3 * B1 * X)	-0.00075	-0.00073	-0.00073
	(A2 * !A3 * !B1 * !X)	0.00101	0.00102	0.00101
	(A2 * !A3 * !B1 * !X)	-0.00109	-0.00111	-0.00112
	(A1 * !A2 * !A3 * B1 * X)	0.00114	0.00113	0.00113
	(A1 * !A2 * !A3 * B1 * X)	-0.00075	-0.00073	-0.00073
	(A1 * !A2 * !A3 * !B1 * !X)	0.00101	0.00102	0.00101
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00108	-0.00109	-0.00109
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00094	0.00094	0.00094
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00121	-0.00122	-0.00121

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00192	0.00189	0.00189
	(A3 * B1 * X)	-0.00152	-0.00148	-0.00148
	(A3 * !B1 * !X)	0.00168	0.00167	0.00166
	(A3 * !B1 * !X)	-0.00235	-0.00239	-0.00238
	(A2 * !A3 * B1 * X)	0.00192	0.00189	0.00189
	(A2 * !A3 * B1 * X)	-0.00151	-0.00148	-0.00148
	(A2 * !A3 * !B1 * !X)	0.00168	0.00168	0.00166
	(A2 * !A3 * !B1 * !X)	-0.00220	-0.00222	-0.00222
	(A1 * !A2 * !A3 * B1 * X)	0.00192	0.00189	0.00189
	(A1 * !A2 * !A3 * B1 * X)	-0.00151	-0.00148	-0.00148
	(A1 * !A2 * !A3 * !B1 * !X)	0.00165	0.00168	0.00166
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00214	-0.00218	-0.00218
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00153	0.00156	0.00154
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00244	-0.00245	-0.00245

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00098	-0.00098	-0.00100
	(A3 * B1 * X)	0.00076	0.00076	0.00074
	(A3 * !B1 * !X)	-0.00088	-0.00088	-0.00088
	(A3 * !B1 * !X)	0.00119	0.00120	0.00119
	(A2 * !A3 * B1 * X)	-0.00090	-0.00090	-0.00099
	(A2 * !A3 * B1 * X)	0.00080	0.00080	0.00074
	(A2 * !A3 * !B1 * !X)	-0.00088	-0.00087	-0.00088
	(A2 * !A3 * !B1 * !X)	0.00112	0.00111	0.00112
	(A1 * !A2 * !A3 * B1 * X)	-0.00081	-0.00082	-0.00097
	(A1 * !A2 * !A3 * B1 * X)	0.00086	0.00085	0.00076
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00087	-0.00088	-0.00088
	(A1 * !A2 * !A3 * !B1 * !X)	0.00109	0.00109	0.00110
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00079	-0.00082	-0.00082
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00122	0.00122	0.00122
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00109	-0.00109	-0.00113
	(A3 * B1 * X)	0.00077	0.00077	0.00074
	(A3 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(A3 * !B1 * !X)	0.00119	0.00119	0.00118
	(A2 * !A3 * B1 * X)	-0.00101	-0.00102	-0.00111
	(A2 * !A3 * B1 * X)	0.00081	0.00081	0.00075
	(A2 * !A3 * !B1 * !X)	-0.00101	-0.00101	-0.00101
	(A2 * !A3 * !B1 * !X)	0.00112	0.00111	0.00112
	(A1 * !A2 * !A3 * B1 * X)	-0.00093	-0.00094	-0.00109
	(A1 * !A2 * !A3 * B1 * X)	0.00086	0.00086	0.00076
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00100	-0.00101	-0.00101
	(A1 * !A2 * !A3 * !B1 * !X)	0.00109	0.00109	0.00109
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00091	-0.00094	-0.00094
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00122	0.00122	0.00122

sky130_fd_sc_hs__o41a_4	(A3 * B1 * X)	-0.00184	-0.00183	-0.00189
	(A3 * B1 * X)	0.00156	0.00154	0.00150
	(A3 * !B1 * !X)	-0.00167	-0.00167	-0.00166
	(A3 * !B1 * !X)	0.00239	0.00239	0.00238
	(A2 * !A3 * B1 * X)	-0.00165	-0.00165	-0.00186
	(A2 * !A3 * B1 * X)	0.00167	0.00165	0.00151
	(A2 * !A3 * !B1 * !X)	-0.00167	-0.00166	-0.00166
	(A2 * !A3 * !B1 * !X)	0.00223	0.00222	0.00222
	(A1 * !A2 * !A3 * B1 * X)	-0.00147	-0.00148	-0.00181
	(A1 * !A2 * !A3 * B1 * X)	0.00176	0.00175	0.00154
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00165	-0.00166	-0.00166
	(A1 * !A2 * !A3 * !B1 * !X)	0.00217	0.00218	0.00218
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00148	-0.00155	-0.00154
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00246	0.00245	0.00245

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)	0.00039	0.00039	0.00035
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00118	-0.00119	-0.00125
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	0.00044	0.00044	0.00040
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00137	-0.00137	-0.00144
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	0.00073	0.00074	0.00066
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00222	-0.00225	-0.00236

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)	-0.00034	-0.00034	-0.00034
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00125	0.00125	0.00125
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00146	0.00145	0.00145
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00236	0.00237	0.00237

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B_N	X
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2b_1	11.18880
sky130_fd_sc_hs__or2b_2	11.18880
sky130_fd_sc_hs__or2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	X
sky130_fd_sc_hs__or2b_1	0.00234	0.00221	0.36091
sky130_fd_sc_hs__or2b_2	0.00244	0.00213	0.67913
sky130_fd_sc_hs__or2b_4	0.00461	0.00268	1.38513

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.00020	0.00024
sky130_fd_sc_hs__or2b_2	0.00000	0.00025	0.00033
sky130_fd_sc_hs__or2b_4	0.00000	0.00048	0.00067

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)	0.14192	1.14931	8.62991
	B_N->X (FR)	0.31196	1.58879	11.21590
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.13123	1.01648	8.78444
	B_N->X (FR)	0.32352	1.47052	11.43970
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.12064	0.86684	8.65016
	B_N->X (FR)	0.35805	1.39510	11.78040

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.38364	1.19635	6.69829
	B_N->X (RF)	0.38172	0.86729	3.20226
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.53495	1.35446	7.07798
	B_N->X (RF)	0.55105	1.04114	3.35009
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.50929	1.29895	7.08075
	B_N->X (RF)	0.50305	0.98737	3.46197

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00501	0.00487	0.00477
	A	0.00259	0.00244	0.00236
	B_N	0.00475	0.00468	0.00456
	B_N	0.00684	0.00676	0.00665
sky130_fd_sc_hs__or2b_2	A	0.00707	0.00707	0.00702
	A	0.00447	0.00449	0.00445
	B_N	0.00670	0.00682	0.00673
	B_N	0.00875	0.00887	0.00878
sky130_fd_sc_hs__or2b_4	A	0.01324	0.01329	0.01326
	A	0.00849	0.00854	0.00855
	B_N	0.01259	0.01304	0.01293
	B_N	0.01490	0.01497	0.01527

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00284	0.00280	0.00325
	A	0.00528	0.00528	0.00526
	B_N	0.00675	0.00665	0.00650
	B_N	0.00468	0.00455	0.00442
sky130_fd_sc_hs__or2b_2	A	0.00446	0.00464	0.00467
	A	0.00706	0.00724	0.00722
	B_N	0.00889	0.00880	0.00864
	B_N	0.00684	0.00676	0.00658
sky130_fd_sc_hs__or2b_4	A	0.00882	0.00937	0.01030
	A	0.01361	0.01415	0.01422
	B_N	0.01465	0.01509	0.01514
	B_N	0.01233	0.01277	0.01279

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00088	0.00089	0.00088
	(!B_N * X)	-0.00117	-0.00119	-0.00119
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00096	0.00097	0.00096
	(!B_N * X)	-0.00125	-0.00125	-0.00125
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00186	0.00186	0.00184
	(!B_N * X)	-0.00225	-0.00229	-0.00227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00088	-0.00088	-0.00088
	(!B_N * X)	0.00119	0.00119	0.00119
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00096	-0.00095	-0.00095
	(!B_N * X)	0.00126	0.00125	0.00125
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00184	-0.00186	-0.00184
	(!B_N * X)	0.00227	0.00230	0.00227

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00298	0.00280	0.00271
	(A * X)	0.00057	0.00039	0.00031
sky130_fd_sc_hs__or2b_2	(A * X)	0.00316	0.00298	0.00289
	(A * X)	0.00075	0.00057	0.00049
sky130_fd_sc_hs__or2b_4	(A * X)	0.00412	0.00392	0.00377
	(A * X)	0.00128	0.00105	0.00092

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00091	0.00078	0.00076
	(A * X)	0.00331	0.00318	0.00316
sky130_fd_sc_hs__or2b_2	(A * X)	0.00088	0.00075	0.00074
	(A * X)	0.00329	0.00315	0.00314
sky130_fd_sc_hs__or2b_4	(A * X)	0.00229	0.00211	0.00208
	(A * X)	0.00514	0.00495	0.00492

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	X
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2_1	7.99200
sky130_fd_sc_hs__or2_2	7.99200
sky130_fd_sc_hs__or2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__or2_1	0.00212	0.00204	0.36149
sky130_fd_sc_hs__or2_2	0.00266	0.00233	0.67165
sky130_fd_sc_hs__or2_4	0.00422	0.00368	1.37177

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.00012	0.00018
sky130_fd_sc_hs__or2_2	0.00000	0.00020	0.00028
sky130_fd_sc_hs__or2_4	0.00000	0.00039	0.00047

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)	0.13816	1.14063	8.59846
	B->X (RR)	0.13400	1.12155	8.50815
sky130_fd_sc_hs__or2_2	A->X (RR)	0.13239	1.01479	8.70186
	B->X (RR)	0.12685	0.99720	8.61488
sky130_fd_sc_hs__or2_4	A->X (RR)	0.16068	0.96254	9.01007
	B->X (RR)	0.14544	0.92839	8.89051

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.41437	1.23004	6.71669
	B->X (FF)	0.37219	1.13147	6.08403
sky130_fd_sc_hs__or2_2	A->X (FF)	0.53093	1.34504	7.05283
	B->X (FF)	0.48000	1.24805	6.55100
sky130_fd_sc_hs__or2_4	A->X (FF)	0.47697	1.26361	7.03722
	B->X (FF)	0.42568	1.16240	6.50590

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00524	0.00511	0.00503
	A	0.00259	0.00247	0.00240
	B	0.00462	0.00452	0.00446
	B	0.00230	0.00220	0.00216
sky130_fd_sc_hs__or2_2	A	0.00764	0.00760	0.00751
	A	0.00442	0.00438	0.00431
	B	0.00673	0.00675	0.00673
	B	0.00403	0.00405	0.00404
sky130_fd_sc_hs__or2_4	A	0.01356	0.01357	0.01353
	A	0.00839	0.00839	0.00843
	B	0.01154	0.01161	0.01175
	B	0.00747	0.00755	0.00776

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00227	0.00227	0.00296
	A	0.00493	0.00496	0.00493
	B	0.00217	0.00218	0.00227
	B	0.00448	0.00448	0.00448
sky130_fd_sc_hs__or2_2	A	0.00362	0.00379	0.00378
	A	0.00687	0.00704	0.00702
	B	0.00356	0.00372	0.00435
	B	0.00626	0.00645	0.00647
sky130_fd_sc_hs__or2_4	A	0.00784	0.00838	0.01029
	A	0.01308	0.01365	0.01371
	B	0.00784	0.00815	0.00925
	B	0.01191	0.01236	0.01255

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00087	0.00088	0.00087
	(B * X)	-0.00086	-0.00088	-0.00088
sky130_fd_sc_hs__or2_2	(B * X)	0.00109	0.00109	0.00108
	(B * X)	-0.00103	-0.00105	-0.00105
sky130_fd_sc_hs__or2_4	(B * X)	0.00133	0.00133	0.00132
	(B * X)	-0.00211	-0.00218	-0.00215

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00087	-0.00087	-0.00087
	(B * X)	0.00088	0.00088	0.00088
sky130_fd_sc_hs__or2_2	(B * X)	-0.00108	-0.00108	-0.00108
	(B * X)	0.00105	0.00105	0.00105
sky130_fd_sc_hs__or2_4	(B * X)	-0.00132	-0.00133	-0.00132
	(B * X)	0.00217	0.00218	0.00215

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00095	0.00094	0.00094
	(A * X)	-0.00054	-0.00054	-0.00054
sky130_fd_sc_hs__or2_2	(A * X)	0.00103	0.00102	0.00102
	(A * X)	-0.00068	-0.00066	-0.00066
sky130_fd_sc_hs__or2_4	(A * X)	0.00120	0.00121	0.00121
	(A * X)	-0.00133	-0.00133	-0.00133

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00092	-0.00092	-0.00094
	(A * X)	0.00056	0.00056	0.00054
sky130_fd_sc_hs__or2_2	(A * X)	-0.00099	-0.00099	-0.00102
	(A * X)	0.00069	0.00069	0.00067
sky130_fd_sc_hs__or2_4	(A * X)	-0.00113	-0.00114	-0.00121
	(A * X)	0.00141	0.00140	0.00135

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C_N	X
0	x	0	1
0	0	1	0
x	1	1	1
1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3b_1	12.78720
sky130_fd_sc_hs__or3b_2	12.78720
sky130_fd_sc_hs__or3b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	X
sky130_fd_sc_hs__or3b_1	0.00229	0.00252	0.00213	0.36599
sky130_fd_sc_hs__or3b_2	0.00244	0.00238	0.00212	0.67198
sky130_fd_sc_hs__or3b_4	0.00435	0.00397	0.00250	1.37880

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3b_1	0.00000	0.00019	0.00028
sky130_fd_sc_hs__or3b_2	0.00000	0.00024	0.00038
sky130_fd_sc_hs__or3b_4	0.00000	0.00045	0.00063

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)	0.15178	1.18908	8.88138
	B->X (RR)	0.14981	1.17831	8.81669
	C_N->X (FR)	0.31435	1.59845	11.33410
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.13888	1.03660	8.80517
	B->X (RR)	0.13664	1.02793	8.75909
	C_N->X (FR)	0.32504	1.46724	11.35530
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.16731	0.98396	9.11156
	B->X (RR)	0.16189	0.96873	9.03092
	C_N->X (FR)	0.36485	1.40425	11.71530

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.68493	1.52729	7.16679
	B->X (FF)	0.66014	1.49605	7.21013
	C_N->X (RF)	0.62450	1.14094	3.47215
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.90841	1.76622	7.56641
	B->X (FF)	0.86625	1.71928	7.65423
	C_N->X (RF)	0.83821	1.37759	3.74651
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.78513	1.59473	7.41355
	B->X (FF)	0.74262	1.54623	7.47991
	C_N->X (RF)	0.69676	1.19725	3.62150

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00583	0.00572	0.00559
	A	0.00294	0.00283	0.00272
	B	0.00527	0.00519	0.00508
	B	0.00256	0.00248	0.00239
	C_N	0.00484	0.00483	0.00467
	C_N	0.00659	0.00658	0.00643
sky130_fd_sc_hs__or3b_2	A	0.00787	0.00786	0.00777
	A	0.00488	0.00487	0.00481
	B	0.00714	0.00722	0.00718
	B	0.00450	0.00458	0.00455
	C_N	0.00667	0.00683	0.00672
	C_N	0.00856	0.00871	0.00865
sky130_fd_sc_hs__or3b_4	A	0.01438	0.01444	0.01434
	A	0.00917	0.00925	0.00924
	B	0.01267	0.01286	0.01292
	B	0.00839	0.00858	0.00874
	C_N	0.01146	0.01199	0.01199
	C_N	0.01363	0.01408	0.01415

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00339	0.00344	0.00375
	A	0.00632	0.00636	0.00635
	B	0.00328	0.00332	0.00383
	B	0.00599	0.00604	0.00601
	C_N	0.00727	0.00709	0.00702
	C_N	0.00552	0.00538	0.00527
sky130_fd_sc_hs__or3b_2	A	0.00476	0.00495	0.00517
	A	0.00780	0.00798	0.00799
	B	0.00465	0.00486	0.00548
	B	0.00730	0.00751	0.00754
	C_N	0.00907	0.00904	0.00893
	C_N	0.00717	0.00716	0.00704
sky130_fd_sc_hs__or3b_4	A	0.00882	0.00941	0.00957
	A	0.01410	0.01471	0.01484
	B	0.00885	0.00947	0.00964
	B	0.01316	0.01377	0.01393
	C_N	0.01431	0.01460	0.01493
	C_N	0.01215	0.01263	0.01273

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)	0.00083	0.00084	0.00084
	(B * C_N * X)	-0.00105	-0.00108	-0.00108
	(B * !C_N * X)	0.00083	0.00084	0.00084
	(B * !C_N * X)	-0.00105	-0.00108	-0.00108
	(!B * !C_N * X)	0.00084	0.00084	0.00084
	(!B * !C_N * X)	-0.00100	-0.00103	-0.00103
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00099	0.00100	0.00099
	(B * C_N * X)	-0.00107	-0.00108	-0.00108
	(B * !C_N * X)	0.00095	0.00096	0.00095
	(B * !C_N * X)	-0.00111	-0.00112	-0.00112
	(!B * !C_N * X)	0.00095	0.00095	0.00095
	(!B * !C_N * X)	-0.00105	-0.00108	-0.00108
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00148	0.00148	0.00147
	(B * C_N * X)	-0.00207	-0.00215	-0.00212
	(B * !C_N * X)	0.00132	0.00132	0.00131
	(B * !C_N * X)	-0.00224	-0.00231	-0.00229
	(!B * !C_N * X)	0.00131	0.00130	0.00130
	(!B * !C_N * X)	-0.00215	-0.00220	-0.00220

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)	-0.00083	-0.00084	-0.00084
	(B * C_N * X)	0.00108	0.00108	0.00108
	(B * !C_N * X)	-0.00083	-0.00084	-0.00084
	(B * !C_N * X)	0.00108	0.00108	0.00108
	(!B * !C_N * X)	-0.00084	-0.00083	-0.00084
	(!B * !C_N * X)	0.00103	0.00103	0.00103
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00099	-0.00099	-0.00099
	(B * C_N * X)	0.00109	0.00108	0.00108
	(B * !C_N * X)	-0.00095	-0.00095	-0.00095
	(B * !C_N * X)	0.00113	0.00112	0.00112
	(!B * !C_N * X)	-0.00095	-0.00095	-0.00095
	(!B * !C_N * X)	0.00109	0.00108	0.00108
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00148	-0.00148	-0.00147
	(B * C_N * X)	0.00214	0.00215	0.00212
	(B * !C_N * X)	-0.00132	-0.00132	-0.00131
	(B * !C_N * X)	0.00230	0.00231	0.00229
	(!B * !C_N * X)	-0.00131	-0.00130	-0.00130
	(!B * !C_N * X)	0.00221	0.00220	0.00220

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)	0.00101	0.00101	0.00101
	(A * C_N * X)	-0.00077	-0.00077	-0.00077
	(A * !C_N * X)	0.00089	0.00089	0.00089
	(A * !C_N * X)	-0.00092	-0.00092	-0.00092
	(!A * !C_N * X)	0.00090	0.00089	0.00089
	(!A * !C_N * X)	-0.00119	-0.00120	-0.00120
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00104	0.00104	0.00104
	(A * C_N * X)	-0.00072	-0.00072	-0.00072
	(A * !C_N * X)	0.00086	0.00087	0.00086
	(A * !C_N * X)	-0.00094	-0.00094	-0.00094
	(!A * !C_N * X)	0.00086	0.00087	0.00086
	(!A * !C_N * X)	-0.00121	-0.00122	-0.00122
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00131	0.00131	0.00131
	(A * C_N * X)	-0.00151	-0.00151	-0.00151
	(A * !C_N * X)	0.00108	0.00109	0.00109
	(A * !C_N * X)	-0.00182	-0.00181	-0.00181
	(!A * !C_N * X)	0.00107	0.00107	0.00107
	(!A * !C_N * X)	-0.00237	-0.00240	-0.00240

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)	-0.00100	-0.00100	-0.00100
	(A * C_N * X)	0.00079	0.00078	0.00078
	(A * !C_N * X)	-0.00089	-0.00089	-0.00089
	(A * !C_N * X)	0.00092	0.00092	0.00092
	(!A * !C_N * X)	-0.00089	-0.00089	-0.00089
	(!A * !C_N * X)	0.00121	0.00120	0.00120
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00103	-0.00103	-0.00104
	(A * C_N * X)	0.00073	0.00073	0.00074
	(A * !C_N * X)	-0.00086	-0.00086	-0.00086
	(A * !C_N * X)	0.00094	0.00094	0.00094
	(!A * !C_N * X)	-0.00086	-0.00087	-0.00086
	(!A * !C_N * X)	0.00123	0.00123	0.00122
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00130	-0.00130	-0.00130
	(A * C_N * X)	0.00153	0.00153	0.00154
	(A * !C_N * X)	-0.00108	-0.00108	-0.00108
	(A * !C_N * X)	0.00182	0.00181	0.00181
	(!A * !C_N * X)	-0.00107	-0.00107	-0.00107
	(!A * !C_N * X)	0.00241	0.00242	0.00240

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00290	0.00272	0.00265
	(B * X)	0.00057	0.00039	0.00032
	(A * !B * X)	0.00296	0.00278	0.00269
	(A * !B * X)	0.00060	0.00042	0.00034
sky130_fd_sc_hs__or3b_2	(B * X)	0.00324	0.00306	0.00298
	(B * X)	0.00082	0.00064	0.00056
	(A * !B * X)	0.00330	0.00312	0.00302
	(A * !B * X)	0.00084	0.00066	0.00057
sky130_fd_sc_hs__or3b_4	(B * X)	0.00419	0.00401	0.00390
	(B * X)	0.00126	0.00107	0.00098
	(A * !B * X)	0.00432	0.00414	0.00399
	(A * !B * X)	0.00132	0.00112	0.00101

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00074	0.00062	0.00061
	(B * X)	0.00306	0.00295	0.00293
	(A * !B * X)	0.00074	0.00062	0.00061
	(A * !B * X)	0.00306	0.00295	0.00293
sky130_fd_sc_hs__or3b_2	(B * X)	0.00079	0.00066	0.00064
	(B * X)	0.00321	0.00307	0.00306
	(A * !B * X)	0.00079	0.00066	0.00064
	(A * !B * X)	0.00321	0.00307	0.00306
sky130_fd_sc_hs__or3b_4	(B * X)	0.00102	0.00087	0.00085
	(B * X)	0.00393	0.00380	0.00377
	(A * !B * X)	0.00102	0.00087	0.00085
	(A * !B * X)	0.00394	0.00381	0.00378

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	0
0	x	1	1
x	1	x	1
1	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3_1	9.59040
sky130_fd_sc_hs__or3_2	11.18880
sky130_fd_sc_hs__or3_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__or3_1	0.00238	0.00236	0.00233	0.36539
sky130_fd_sc_hs__or3_2	0.00242	0.00246	0.00255	0.71187
sky130_fd_sc_hs__or3_4	0.00456	0.00404	0.00398	1.38303

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3_1	0.00000	0.00014	0.00022
sky130_fd_sc_hs__or3_2	0.00000	0.00019	0.00032
sky130_fd_sc_hs__or3_4	0.00000	0.00037	0.00052

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)	0.15151	1.18360	8.80385
	B->X (RR)	0.14903	1.17174	8.73509
	C->X (RR)	0.14399	1.15423	8.65312
sky130_fd_sc_hs__or3_2	A->X (RR)	0.13821	1.02291	8.77681
	B->X (RR)	0.13555	1.01363	8.72769
	C->X (RR)	0.13205	1.00057	8.66299
sky130_fd_sc_hs__or3_4	A->X (RR)	0.16787	0.98611	9.13638
	B->X (RR)	0.16254	0.97042	9.05573
	C->X (RR)	0.15474	0.94836	8.97276

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.70830	1.55516	7.21656
	B->X (FF)	0.66822	1.50916	7.24028
	C->X (FF)	0.58376	1.36367	6.63400
sky130_fd_sc_hs__or3_2	A->X (FF)	0.89369	1.74891	7.58849
	B->X (FF)	0.84928	1.70086	7.68361
	C->X (FF)	0.77686	1.56131	7.13490
sky130_fd_sc_hs__or3_4	A->X (FF)	0.78819	1.59846	7.42704
	B->X (FF)	0.74416	1.54859	7.49040
	C->X (FF)	0.65051	1.39334	6.88315

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00670	0.00658	0.00644
	A	0.00308	0.00295	0.00283
	B	0.00588	0.00582	0.00571
	B	0.00270	0.00264	0.00254
	C	0.00508	0.00497	0.00488
	C	0.00224	0.00213	0.00205
sky130_fd_sc_hs__or3_2	A	0.00855	0.00855	0.00845
	A	0.00491	0.00490	0.00481
	B	0.00766	0.00774	0.00770
	B	0.00441	0.00451	0.00447
	C	0.00695	0.00698	0.00694
	C	0.00401	0.00405	0.00402
sky130_fd_sc_hs__or3_4	A	0.01558	0.01564	0.01554
	A	0.00918	0.00926	0.00925
	B	0.01357	0.01375	0.01381
	B	0.00837	0.00856	0.00871
	C	0.01186	0.01196	0.01205
	C	0.00732	0.00744	0.00756

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00272	0.00276	0.00331
	A	0.00640	0.00644	0.00642
	B	0.00275	0.00280	0.00341
	B	0.00594	0.00600	0.00598
	C	0.00270	0.00272	0.00272
	C	0.00554	0.00557	0.00555
sky130_fd_sc_hs__or3_2	A	0.00427	0.00453	0.00657
	A	0.00798	0.00823	0.00828
	B	0.00430	0.00457	0.00509
	B	0.00756	0.00783	0.00788
	C	0.00425	0.00447	0.00692
	C	0.00718	0.00741	0.00744
sky130_fd_sc_hs__or3_4	A	0.00770	0.00827	0.00843
	A	0.01420	0.01480	0.01494
	B	0.00801	0.00863	0.01059
	B	0.01327	0.01389	0.01405
	C	0.00783	0.00837	0.00858
	C	0.01236	0.01291	0.01305

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00091	0.00092	0.00091
	(B * C * X)	-0.00105	-0.00108	-0.00107
	(B * !C * X)	0.00091	0.00092	0.00091
	(B * !C * X)	-0.00105	-0.00108	-0.00107
	(!B * C * X)	0.00091	0.00092	0.00091
	(!B * C * X)	-0.00099	-0.00102	-0.00102
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00096	0.00097	0.00096
	(B * C * X)	-0.00106	-0.00109	-0.00108
	(B * !C * X)	0.00096	0.00097	0.00096
	(B * !C * X)	-0.00106	-0.00109	-0.00108
	(!B * C * X)	0.00096	0.00096	0.00096
	(!B * C * X)	-0.00100	-0.00103	-0.00103
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00157	0.00156	0.00155
	(B * C * X)	-0.00209	-0.00215	-0.00213
	(B * !C * X)	0.00156	0.00156	0.00155
	(B * !C * X)	-0.00209	-0.00215	-0.00213
	(!B * C * X)	0.00155	0.00155	0.00155
	(!B * C * X)	-0.00198	-0.00205	-0.00203

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00091	-0.00092	-0.00091
	(B * C * X)	0.00107	0.00108	0.00107
	(B * !C * X)	-0.00091	-0.00092	-0.00091
	(B * !C * X)	0.00107	0.00108	0.00107
	(!B * C * X)	-0.00091	-0.00091	-0.00091
	(!B * C * X)	0.00102	0.00102	0.00102
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00096	-0.00097	-0.00096
	(B * C * X)	0.00109	0.00109	0.00108
	(B * !C * X)	-0.00096	-0.00097	-0.00096
	(B * !C * X)	0.00109	0.00109	0.00108
	(!B * C * X)	-0.00096	-0.00096	-0.00096
	(!B * C * X)	0.00103	0.00103	0.00103
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00155	-0.00156	-0.00155
	(B * C * X)	0.00213	0.00215	0.00213
	(B * !C * X)	-0.00155	-0.00156	-0.00155
	(B * !C * X)	0.00212	0.00215	0.00213
	(!B * C * X)	-0.00154	-0.00155	-0.00155
	(!B * C * X)	0.00201	0.00205	0.00203

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00084	0.00084	0.00084
	(A * C * X)	-0.00077	-0.00077	-0.00077
	(A * !C * X)	0.00084	0.00084	0.00084
	(A * !C * X)	-0.00072	-0.00073	-0.00073
	(!A * C * X)	0.00084	0.00084	0.00084
	(!A * C * X)	-0.00102	-0.00105	-0.00104
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00086	0.00086	0.00086
	(A * C * X)	-0.00085	-0.00084	-0.00084
	(A * !C * X)	0.00087	0.00087	0.00086
	(A * !C * X)	-0.00081	-0.00080	-0.00081
	(!A * C * X)	0.00087	0.00087	0.00086
	(!A * C * X)	-0.00110	-0.00111	-0.00112
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00108	0.00109	0.00109
	(A * C * X)	-0.00160	-0.00159	-0.00159
	(A * !C * X)	0.00110	0.00109	0.00108
	(A * !C * X)	-0.00154	-0.00152	-0.00152
	(!A * C * X)	0.00107	0.00108	0.00107
	(!A * C * X)	-0.00213	-0.00219	-0.00217

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00084	-0.00084	-0.00084
	(A * C * X)	0.00077	0.00077	0.00077
	(A * !C * X)	-0.00083	-0.00083	-0.00083
	(A * !C * X)	0.00074	0.00074	0.00074
	(!A * C * X)	-0.00084	-0.00084	-0.00084
	(!A * C * X)	0.00105	0.00105	0.00104
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00086	-0.00086	-0.00086
	(A * C * X)	0.00085	0.00084	0.00084
	(A * !C * X)	-0.00086	-0.00086	-0.00086
	(A * !C * X)	0.00082	0.00081	0.00082
	(!A * C * X)	-0.00086	-0.00086	-0.00086
	(!A * C * X)	0.00112	0.00111	0.00112
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00108	-0.00108	-0.00108
	(A * C * X)	0.00160	0.00159	0.00159
	(A * !C * X)	-0.00108	-0.00108	-0.00107
	(A * !C * X)	0.00154	0.00154	0.00155
	(!A * C * X)	-0.00107	-0.00108	-0.00107
	(!A * C * X)	0.00219	0.00219	0.00217

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00094	0.00095	0.00095
	(B * X)	-0.00067	-0.00067	-0.00067
	(A * !B * X)	0.00094	0.00094	0.00095
	(A * !B * X)	-0.00067	-0.00067	-0.00067
sky130_fd_sc_hs__or3_2	(B * X)	0.00109	0.00107	0.00107
	(B * X)	-0.00070	-0.00068	-0.00068
	(A * !B * X)	0.00108	0.00107	0.00107
	(A * !B * X)	-0.00069	-0.00068	-0.00068
sky130_fd_sc_hs__or3_4	(B * X)	0.00137	0.00138	0.00138
	(B * X)	-0.00136	-0.00136	-0.00136
	(A * !B * X)	0.00137	0.00138	0.00138
	(A * !B * X)	-0.00135	-0.00135	-0.00135

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00092	-0.00092	-0.00095
	(B * X)	0.00070	0.00070	0.00068
	(A * !B * X)	-0.00086	-0.00086	-0.00093
	(A * !B * X)	0.00074	0.00074	0.00068
sky130_fd_sc_hs__or3_2	(B * X)	-0.00104	-0.00105	-0.00107
	(B * X)	0.00071	0.00071	0.00069
	(A * !B * X)	-0.00098	-0.00098	-0.00106
	(A * !B * X)	0.00075	0.00075	0.00069
sky130_fd_sc_hs__or3_4	(B * X)	-0.00131	-0.00132	-0.00138
	(B * X)	0.00142	0.00142	0.00137
	(A * !B * X)	-0.00118	-0.00119	-0.00135
	(A * !B * X)	0.00150	0.00149	0.00137

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	X
0	x	0	x	1
0	x	1	0	1
0	0	1	1	0
x	1	1	1	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4bb_1	15.98400
sky130_fd_sc_hs__or4bb_2	15.98400
sky130_fd_sc_hs__or4bb_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	X
sky130_fd_sc_hs__or4bb_1	0.00233	0.00231	0.00218	0.00221	0.36054
sky130_fd_sc_hs__or4bb_2	0.00232	0.00246	0.00215	0.00212	0.67128
sky130_fd_sc_hs__or4bb_4	0.00364	0.00372	0.00240	0.00237	1.28909

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4bb_1	0.00000	0.00024	0.00038
sky130_fd_sc_hs__or4bb_2	0.00000	0.00029	0.00048
sky130_fd_sc_hs__or4bb_4	0.00000	0.00052	0.00078

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)	0.15459	1.19965	8.86184
	B->X (RR)	0.15401	1.19109	8.80478
	C_N->X (FR)	0.34936	1.62908	11.33980
	D_N->X (FR)	0.32322	1.59923	11.23450
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.13966	1.05202	8.86462
	B->X (RR)	0.14100	1.04566	8.82786
	C_N->X (FR)	0.31265	1.45535	11.28260
	D_N->X (FR)	0.32395	1.46517	11.37060
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.18175	1.03102	9.28299
	B->X (RR)	0.18511	1.02756	9.23633
	C_N->X (FR)	0.40995	1.46349	11.85890
	D_N->X (FR)	0.43088	1.48365	11.95010

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	1.02034	1.89777	7.56627
	B->X (FF)	0.96768	1.83334	7.59561
	C_N->X (RF)	0.95945	1.53353	3.96457
	D_N->X (RF)	0.80645	1.36007	3.70270
sky130_fd_sc_hs__or4bb_2	A->X (FF)	1.28870	2.19545	7.98834
	B->X (FF)	1.26356	2.15396	8.07953
	C_N->X (RF)	1.23796	1.83032	4.24616
	D_N->X (RF)	1.12582	1.70346	4.10047
sky130_fd_sc_hs__or4bb_4	A->X (FF)	1.33464	2.21525	8.05389
	B->X (FF)	1.30542	2.15810	8.11559
	C_N->X (RF)	1.28750	1.84508	4.31818
	D_N->X (RF)	1.09825	1.66036	4.12865

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00615	0.00604	0.00587
	A	0.00336	0.00325	0.00311
	B	0.00548	0.00545	0.00535
	B	0.00294	0.00291	0.00283
	C_N	0.00525	0.00523	0.00510
	C_N	0.00727	0.00724	0.00711
	D_N	0.00472	0.00470	0.00455
	D_N	0.00649	0.00647	0.00633
sky130_fd_sc_hs__or4bb_2	A	0.00787	0.00798	0.00797
	A	0.00506	0.00528	0.00520
	B	0.00737	0.00747	0.00743
	B	0.00470	0.00480	0.00480
	C_N	0.00679	0.00700	0.00694
	C_N	0.00872	0.00894	0.00889
	D_N	0.00673	0.00674	0.00656
	D_N	0.00850	0.00849	0.00832
sky130_fd_sc_hs__or4bb_4	A	0.01559	0.01574	0.01587
	A	0.01065	0.01081	0.01106
	B	0.01381	0.01400	0.01403
	B	0.00963	0.00983	0.00998
	C_N	0.01378	0.01428	0.01427
	C_N	0.01559	0.01612	0.01613
	D_N	0.01259	0.01297	0.01285
	D_N	0.01444	0.01482	0.01480

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00407	0.00411	0.00480
	A	0.00691	0.00694	0.00693
	B	0.00391	0.00399	0.00446
	B	0.00646	0.00653	0.00653
	C_N	0.00830	0.00819	0.00808
	C_N	0.00627	0.00616	0.00604
	D_N	0.00747	0.00730	0.00725
	D_N	0.00571	0.00558	0.00547
sky130_fd_sc_hs__or4bb_2	A	0.00538	0.00564	0.00575
	A	0.00825	0.00851	0.00861
	B	0.00518	0.00544	0.00635
	B	0.00786	0.00812	0.00822
	C_N	0.00943	0.00954	0.00954
	C_N	0.00750	0.00759	0.00759
	D_N	0.00912	0.00914	0.00906
	D_N	0.00736	0.00736	0.00727
sky130_fd_sc_hs__or4bb_4	A	0.01145	0.01200	0.01233
	A	0.01652	0.01707	0.01738
	B	0.01155	0.01208	0.01250
	B	0.01577	0.01628	0.01659
	C_N	0.01670	0.01703	0.01727
	C_N	0.01489	0.01520	0.01539
	D_N	0.01639	0.01665	0.01663
	D_N	0.01456	0.01482	0.01473

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)**	0.00086	0.00087	0.00086
	(B * C_N * D_N * X)	-0.00106	-0.00109	-0.00108
	(B * !D_N * X)	0.00086	0.00087	0.00086
	(B * !D_N * X)	-0.00106	-0.00109	-0.00108
	(B * !C_N * D_N * X)	0.00086	0.00087	0.00086
	(B * !C_N * D_N * X)	-0.00106	-0.00109	-0.00108
	(!B * C_N * !D_N * X)	0.00092	0.00090	0.00088
	(!B * C_N * !D_N * X)	-0.00099	-0.00101	-0.00101
	(!B * !C_N * D_N * X)	0.00086	0.00087	0.00086
	(!B * !C_N * D_N * X)	-0.00100	-0.00103	-0.00103
	(!B * !C_N * !D_N * X)	0.00086	0.00087	0.00086
	(!B * !C_N * !D_N * X)	-0.00100	-0.00103	-0.00103
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00093	0.00093	0.00092
	(B * C_N * D_N * X)	-0.00105	-0.00107	-0.00107
	(B * !D_N * X)	0.00093	0.00093	0.00092
	(B * !D_N * X)	-0.00105	-0.00107	-0.00107
	(B * !C_N * D_N * X)	0.00082	0.00083	0.00082
	(B * !C_N * D_N * X)	-0.00116	-0.00117	-0.00117
	(!B * C_N * !D_N * X)	0.00098	0.00096	0.00094
	(!B * C_N * !D_N * X)	-0.00098	-0.00100	-0.00101
	(!B * !C_N * D_N * X)	0.00082	0.00082	0.00082
	(!B * !C_N * D_N * X)	-0.00110	-0.00113	-0.00113
	(!B * !C_N * !D_N * X)	0.00082	0.00082	0.00082
	(!B * !C_N * !D_N * X)	-0.00110	-0.00113	-0.00113

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00115	0.00115	0.00115
	(B * C_N * D_N * X)	-0.00216	-0.00222	-0.00220
	(B * !D_N * X)	0.00115	0.00116	0.00115
	(B * !D_N * X)	-0.00215	-0.00221	-0.00220
	(B * !C_N * D_N * X)	0.00115	0.00115	0.00114
	(B * !C_N * D_N * X)	-0.00216	-0.00222	-0.00220
	(!B * C_N * !D_N * X)	0.00126	0.00123	0.00120
	(!B * C_N * !D_N * X)	-0.00201	-0.00206	-0.00207
	(!B * !C_N * D_N * X)	0.00115	0.00115	0.00115
	(!B * !C_N * D_N * X)	-0.00204	-0.00209	-0.00210
	(!B * !C_N * !D_N * X)	0.00115	0.00115	0.00115
	(!B * !C_N * !D_N * X)	-0.00204	-0.00209	-0.00210

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)**	-0.00086	-0.00087	-0.00086
	(B * C_N * D_N * X)	0.00108	0.00109	0.00108
	(B * !D_N * X)	-0.00086	-0.00087	-0.00086
	(B * !D_N * X)	0.00108	0.00109	0.00108
	(B * !C_N * D_N * X)	-0.00086	-0.00087	-0.00086
	(B * !C_N * D_N * X)	0.00108	0.00109	0.00108
	(!B * C_N * !D_N * X)	-0.00090	-0.00090	-0.00088
	(!B * C_N * !D_N * X)	0.00102	0.00101	0.00101
	(!B * !C_N * D_N * X)	-0.00086	-0.00086	-0.00086
	(!B * !C_N * D_N * X)	0.00104	0.00103	0.00103
	(!B * !C_N * !D_N * X)	-0.00086	-0.00086	-0.00086
	(!B * !C_N * !D_N * X)	0.00104	0.00103	0.00103

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00092	-0.00092	-0.00092
	(B * C_N * D_N * X)	0.00107	0.00107	0.00107
	(B * !D_N * X)	-0.00092	-0.00092	-0.00092
	(B * !D_N * X)	0.00107	0.00107	0.00107
	(B * !C_N * D_N * X)	-0.00082	-0.00082	-0.00082
	(B * !C_N * D_N * X)	0.00117	0.00117	0.00117
	(!B * C_N * !D_N * X)	-0.00097	-0.00096	-0.00094
	(!B * C_N * !D_N * X)	0.00101	0.00100	0.00101
	(!B * !C_N * D_N * X)	-0.00082	-0.00082	-0.00082
	(!B * !C_N * D_N * X)	0.00113	0.00113	0.00113
	(!B * !C_N * !D_N * X)	-0.00082	-0.00082	-0.00082
	(!B * !C_N * !D_N * X)	0.00113	0.00113	0.00113
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00115	-0.00115	-0.00114
	(B * C_N * D_N * X)	0.00220	0.00222	0.00220
	(B * !D_N * X)	-0.00115	-0.00115	-0.00115
	(B * !D_N * X)	0.00221	0.00221	0.00220
	(B * !C_N * D_N * X)	-0.00114	-0.00115	-0.00114
	(B * !C_N * D_N * X)	0.00221	0.00222	0.00220
	(!B * C_N * !D_N * X)	-0.00124	-0.00123	-0.00120
	(!B * C_N * !D_N * X)	0.00206	0.00206	0.00207
	(!B * !C_N * D_N * X)	-0.00115	-0.00114	-0.00114
	(!B * !C_N * D_N * X)	0.00210	0.00209	0.00210
	(!B * !C_N * !D_N * X)	-0.00115	-0.00114	-0.00114
	(!B * !C_N * !D_N * X)	0.00210	0.00209	0.00210

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)**	0.00093	0.00093	0.00093
	(A * C_N * D_N * X)	-0.00080	-0.00080	-0.00080
	(A * C_N * !D_N * X)	0.00100	0.00102	0.00102
	(A * C_N * !D_N * X)	-0.00084	-0.00085	-0.00085
	(A * !C_N * D_N * X)	0.00074	0.00074	0.00074
	(A * !C_N * D_N * X)	-0.00106	-0.00105	-0.00105
	(A * !C_N * !D_N * X)	0.00074	0.00074	0.00074
	(A * !C_N * !D_N * X)	-0.00107	-0.00107	-0.00107
	(!A * C_N * !D_N * X)	0.00102	0.00098	0.00095
	(!A * C_N * !D_N * X)	-0.00102	-0.00105	-0.00105
	(!A * !C_N * D_N * X)	0.00074	0.00074	0.00074
	(!A * !C_N * D_N * X)	-0.00130	-0.00131	-0.00131
	(!A * !C_N * !D_N * X)	0.00074	0.00074	0.00074
	(!A * !C_N * !D_N * X)	-0.00130	-0.00131	-0.00131
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00115	0.00115	0.00115
	(A * C_N * D_N * X)	-0.00073	-0.00074	-0.00073
	(A * C_N * !D_N * X)	0.00121	0.00124	0.00124
	(A * C_N * !D_N * X)	-0.00077	-0.00078	-0.00077
	(A * !C_N * D_N * X)	0.00102	0.00103	0.00102
	(A * !C_N * D_N * X)	-0.00092	-0.00092	-0.00091
	(A * !C_N * !D_N * X)	0.00102	0.00103	0.00102
	(A * !C_N * !D_N * X)	-0.00093	-0.00094	-0.00094
	(!A * C_N * !D_N * X)	0.00124	0.00120	0.00117
	(!A * C_N * !D_N * X)	-0.00096	-0.00099	-0.00099
	(!A * !C_N * D_N * X)	0.00102	0.00103	0.00102
	(!A * !C_N * D_N * X)	-0.00116	-0.00117	-0.00117
	(!A * !C_N * !D_N * X)	0.00102	0.00103	0.00102
	(!A * !C_N * !D_N * X)	-0.00116	-0.00117	-0.00117

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00119	0.00117	0.00117
	(A * C_N * D_N * X)	-0.00157	-0.00155	-0.00155
	(A * C_N * !D_N * X)	0.00129	0.00133	0.00134
	(A * C_N * !D_N * X)	-0.00167	-0.00166	-0.00165
	(A * !C_N * D_N * X)	0.00113	0.00112	0.00112
	(A * !C_N * D_N * X)	-0.00175	-0.00174	-0.00173
	(A * !C_N * !D_N * X)	0.00113	0.00112	0.00112
	(A * !C_N * !D_N * X)	-0.00177	-0.00178	-0.00177
	(!A * C_N * !D_N * X)	0.00134	0.00126	0.00121
	(!A * C_N * !D_N * X)	-0.00203	-0.00208	-0.00208
	(!A * !C_N * D_N * X)	0.00112	0.00111	0.00111
	(!A * !C_N * D_N * X)	-0.00221	-0.00226	-0.00224
	(!A * !C_N * !D_N * X)	0.00112	0.00111	0.00111
	(!A * !C_N * !D_N * X)	-0.00221	-0.00226	-0.00224

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)**	-0.00092	-0.00092	-0.00093
	(A * C_N * D_N * X)	0.00081	0.00081	0.00081
	(A * C_N * !D_N * X)	-0.00096	-0.00097	-0.00097
	(A * C_N * !D_N * X)	0.00084	0.00085	0.00085
	(A * !C_N * D_N * X)	-0.00074	-0.00074	-0.00074
	(A * !C_N * D_N * X)	0.00106	0.00105	0.00105
	(A * !C_N * !D_N * X)	-0.00073	-0.00074	-0.00074
	(A * !C_N * !D_N * X)	0.00107	0.00107	0.00107
	(!A * C_N * !D_N * X)	-0.00100	-0.00098	-0.00095
	(!A * C_N * !D_N * X)	0.00106	0.00105	0.00105
	(!A * !C_N * D_N * X)	-0.00074	-0.00074	-0.00074
	(!A * !C_N * D_N * X)	0.00132	0.00132	0.00131
	(!A * !C_N * !D_N * X)	-0.00074	-0.00074	-0.00074
	(!A * !C_N * !D_N * X)	0.00132	0.00132	0.00131
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00115	-0.00115	-0.00115
	(A * C_N * D_N * X)	0.00074	0.00074	0.00074
	(A * C_N * !D_N * X)	-0.00118	-0.00119	-0.00119
	(A * C_N * !D_N * X)	0.00077	0.00078	0.00077
	(A * !C_N * D_N * X)	-0.00102	-0.00102	-0.00102
	(A * !C_N * D_N * X)	0.00092	0.00092	0.00091
	(A * !C_N * !D_N * X)	-0.00101	-0.00102	-0.00102
	(A * !C_N * !D_N * X)	0.00093	0.00094	0.00094
	(!A * C_N * !D_N * X)	-0.00121	-0.00120	-0.00117
	(!A * C_N * !D_N * X)	0.00098	0.00099	0.00099
	(!A * !C_N * D_N * X)	-0.00102	-0.00102	-0.00102
	(!A * !C_N * D_N * X)	0.00117	0.00117	0.00117
	(!A * !C_N * !D_N * X)	-0.00102	-0.00102	-0.00102
	(!A * !C_N * !D_N * X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00116	-0.00116	-0.00117
	(A * C_N * D_N * X)	0.00157	0.00158	0.00157
	(A * C_N * !D_N * X)	-0.00126	-0.00126	-0.00125
	(A * C_N * !D_N * X)	0.00167	0.00166	0.00165
	(A * !C_N * D_N * X)	-0.00112	-0.00112	-0.00111
	(A * !C_N * D_N * X)	0.00175	0.00174	0.00173
	(A * !C_N * !D_N * X)	-0.00111	-0.00111	-0.00111
	(A * !C_N * !D_N * X)	0.00177	0.00178	0.00177
	(!A * C_N * !D_N * X)	-0.00130	-0.00126	-0.00121
	(!A * C_N * !D_N * X)	0.00206	0.00208	0.00208
	(!A * !C_N * D_N * X)	-0.00112	-0.00111	-0.00111
	(!A * !C_N * D_N * X)	0.00226	0.00226	0.00224
	(!A * !C_N * !D_N * X)	-0.00112	-0.00111	-0.00111
	(!A * !C_N * !D_N * X)	0.00226	0.00226	0.00224

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00333	0.00316	0.00308
	(B * X)	0.00086	0.00067	0.00061
	(A * !B * X) + (!A * !B * !D_N * X)	0.00338	0.00320	0.00312
	(A * !B * X) + (!A * !B * !D_N * X)	0.00086	0.00067	0.00061
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00305	0.00287	0.00280
	(B * X)	0.00065	0.00047	0.00041
	(A * !B * X) + (!A * !B * !D_N * X)	0.00310	0.00292	0.00284
	(A * !B * X) + (!A * !B * !D_N * X)	0.00065	0.00047	0.00040
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00378	0.00361	0.00353
	(B * X)	0.00122	0.00104	0.00098
	(A * !B * X) + (!A * !B * !D_N * X)	0.00390	0.00372	0.00362
	(A * !B * X) + (!A * !B * !D_N * X)	0.00124	0.00106	0.00100

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00085	0.00072	0.00070
	(B * X)	0.00333	0.00320	0.00317
	(A * !B * X) + (!A * !B * !D_N * X)	0.00086	0.00072	0.00070
	(A * !B * X) + (!A * !B * !D_N * X)	0.00334	0.00320	0.00318
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00076	0.00064	0.00062
	(B * X)	0.00316	0.00302	0.00301
	(A * !B * X) + (!A * !B * !D_N * X)	0.00077	0.00065	0.00062
	(A * !B * X) + (!A * !B * !D_N * X)	0.00316	0.00303	0.00301
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00139	0.00126	0.00124
	(B * X)	0.00393	0.00380	0.00378
	(A * !B * X) + (!A * !B * !D_N * X)	0.00139	0.00126	0.00124
	(A * !B * X) + (!A * !B * !D_N * X)	0.00394	0.00381	0.00379

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)	0.00291	0.00274	0.00265
	(B * C_N * X)	0.00070	0.00051	0.00042
	(A * !B * C_N * X)	0.00299	0.00281	0.00270
	(A * !B * C_N * X)	0.00074	0.00055	0.00045
	(!C_N * X)	0.00298	0.00280	0.00273
	(!C_N * X)	0.00077	0.00058	0.00051
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00295	0.00278	0.00269
	(B * C_N * X)	0.00076	0.00057	0.00048
	(A * !B * C_N * X)	0.00302	0.00285	0.00273
	(A * !B * C_N * X)	0.00079	0.00060	0.00050
	(!C_N * X)	0.00303	0.00286	0.00277
	(!C_N * X)	0.00082	0.00064	0.00057
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00430	0.00411	0.00396
	(B * C_N * X)	0.00175	0.00155	0.00142
	(A * !B * C_N * X)	0.00447	0.00428	0.00408
	(A * !B * C_N * X)	0.00186	0.00166	0.00149
	(!C_N * X)	0.00453	0.00435	0.00423
	(!C_N * X)	0.00200	0.00181	0.00170

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)	0.00087	0.00074	0.00073
	(B * C_N * X)	0.00308	0.00296	0.00295
	(A * !B * C_N * X)	0.00087	0.00074	0.00073
	(A * !B * C_N * X)	0.00308	0.00296	0.00295
	(!C_N * X)	0.00077	0.00064	0.00063
	(!C_N * X)	0.00297	0.00286	0.00284
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00103	0.00091	0.00089
	(B * C_N * X)	0.00324	0.00311	0.00310
	(A * !B * C_N * X)	0.00103	0.00091	0.00089
	(A * !B * C_N * X)	0.00324	0.00311	0.00310
	(!C_N * X)	0.00092	0.00080	0.00078
	(!C_N * X)	0.00313	0.00300	0.00299
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00169	0.00154	0.00152
	(B * C_N * X)	0.00421	0.00408	0.00405
	(A * !B * C_N * X)	0.00169	0.00154	0.00152
	(A * !B * C_N * X)	0.00421	0.00408	0.00405
	(!C_N * X)	0.00138	0.00123	0.00121
	(!C_N * X)	0.00390	0.00377	0.00375

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	X
0	0	x	0	1
0	0	0	1	0
0	x	1	1	1
x	1	x	x	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4b_1	14.38560
sky130_fd_sc_hs__or4b_2	14.38560
sky130_fd_sc_hs__or4b_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	X
sky130_fd_sc_hs__or4b_1	0.00238	0.00227	0.00236	0.00223	0.35450
sky130_fd_sc_hs__or4b_2	0.00247	0.00237	0.00237	0.00212	0.67129
sky130_fd_sc_hs__or4b_4	0.00360	0.00411	0.00415	0.00234	1.39070

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.00019	0.00032
sky130_fd_sc_hs__or4b_2	0.00000	0.00024	0.00042
sky130_fd_sc_hs__or4b_4	0.00000	0.00044	0.00067

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)	0.16065	1.21723	8.91432
	B->X (RR)	0.15991	1.20846	8.86107
	C->X (RR)	0.15616	1.19552	8.79535
	D_N->X (FR)	0.32449	1.60727	11.24420
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.14168	1.05223	8.87244
	B->X (RR)	0.14171	1.04763	8.83700
	C->X (RR)	0.13933	1.03690	8.78190
	D_N->X (FR)	0.33844	1.48353	11.40680
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.18074	1.02003	9.26417
	B->X (RR)	0.18274	1.01505	9.21452
	C->X (RR)	0.17363	0.99357	9.12653
	D_N->X (FR)	0.38717	1.43036	11.80640

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	1.08218	1.96791	7.64642
	B->X (FF)	1.02811	1.90266	7.68548
	C->X (FF)	0.95945	1.82295	7.67597
	D_N->X (RF)	0.85290	1.42929	3.75985
sky130_fd_sc_hs__or4b_2	A->X (FF)	1.35303	2.26127	8.07900
	B->X (FF)	1.30393	2.20190	8.14347
	C->X (FF)	1.21708	2.10467	8.17625
	D_N->X (RF)	1.15157	1.74266	4.18959
sky130_fd_sc_hs__or4b_4	A->X (FF)	1.29447	2.17145	8.10175
	B->X (FF)	1.27337	2.13258	8.17433
	C->X (FF)	1.15537	1.99505	8.14038
	D_N->X (RF)	1.04941	1.60645	4.12934

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00696	0.00684	0.00666
	A	0.00348	0.00337	0.00322
	B	0.00614	0.00610	0.00600
	B	0.00316	0.00312	0.00305
	C	0.00550	0.00546	0.00533
	C	0.00272	0.00269	0.00258
	D_N	0.00508	0.00507	0.00490
	D_N	0.00672	0.00670	0.00655
sky130_fd_sc_hs__or4b_2	A	0.00888	0.00886	0.00875
	A	0.00535	0.00534	0.00527
	B	0.00806	0.00815	0.00811
	B	0.00501	0.00511	0.00511
	C	0.00738	0.00750	0.00744
	C	0.00453	0.00465	0.00466
	D_N	0.00706	0.00722	0.00709
	D_N	0.00880	0.00894	0.00883
sky130_fd_sc_hs__or4b_4	A	0.01604	0.01624	0.01637
	A	0.01018	0.01038	0.01065
	B	0.01483	0.01504	0.01506
	B	0.00939	0.00961	0.00976
	C	0.01310	0.01337	0.01335
	C	0.00821	0.00850	0.00849
	D_N	0.01224	0.01280	0.01277
	D_N	0.01381	0.01440	0.01447

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00364	0.00366	0.00369
	A	0.00719	0.00719	0.00717
	B	0.00366	0.00370	0.00396
	B	0.00666	0.00672	0.00671
	C	0.00357	0.00361	0.00395
	C	0.00633	0.00639	0.00638
	D_N	0.00748	0.00739	0.00731
	D_N	0.00585	0.00576	0.00567
sky130_fd_sc_hs__or4b_2	A	0.00485	0.00502	0.00504
	A	0.00845	0.00863	0.00863
	B	0.00486	0.00506	0.00511
	B	0.00795	0.00815	0.00819
	C	0.00470	0.00491	0.00497
	C	0.00757	0.00777	0.00782
	D_N	0.00931	0.00928	0.00919
	D_N	0.00756	0.00754	0.00742
sky130_fd_sc_hs__or4b_4	A	0.01043	0.01104	0.01139
	A	0.01648	0.01710	0.01744
	B	0.01031	0.01089	0.01179
	B	0.01587	0.01645	0.01677
	C	0.00998	0.01054	0.01084
	C	0.01488	0.01544	0.01572
	D_N	0.01563	0.01604	0.01629
	D_N	0.01405	0.01445	0.01465

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)**	0.00090	0.00091	0.00090
	(B * C * D_N * X)	-0.00104	-0.00107	-0.00106
	(B * !D_N * X)	0.00090	0.00091	0.00090
	(B * !D_N * X)	-0.00104	-0.00107	-0.00106
	(B * !C * D_N * X)	0.00090	0.00091	0.00090
	(B * !C * D_N * X)	-0.00104	-0.00107	-0.00106
	(!B * C * D_N * X)	0.00090	0.00090	0.00090
	(!B * C * D_N * X)	-0.00098	-0.00101	-0.00101
	(!B * C * !D_N * X)	0.00090	0.00090	0.00090
	(!B * C * !D_N * X)	-0.00098	-0.00101	-0.00101
	(!B * !C * !D_N * X)	0.00090	0.00091	0.00090
	(!B * !C * !D_N * X)	-0.00097	-0.00100	-0.00100
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00100	0.00100	0.00099
	(B * C * D_N * X)	-0.00106	-0.00108	-0.00108
	(B * !D_N * X)	0.00096	0.00097	0.00096
	(B * !D_N * X)	-0.00110	-0.00111	-0.00111
	(B * !C * D_N * X)	0.00100	0.00100	0.00099
	(B * !C * D_N * X)	-0.00106	-0.00108	-0.00108
	(!B * C * D_N * X)	0.00099	0.00099	0.00099
	(!B * C * D_N * X)	-0.00100	-0.00102	-0.00102
	(!B * C * !D_N * X)	0.00096	0.00096	0.00096
	(!B * C * !D_N * X)	-0.00103	-0.00106	-0.00106
	(!B * !C * !D_N * X)	0.00096	0.00097	0.00096
	(!B * !C * !D_N * X)	-0.00102	-0.00105	-0.00105

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00099	0.00099	0.00098
	(B * C * D_N * X)	-0.00214	-0.00220	-0.00218
	(B * !D_N * X)	0.00098	0.00099	0.00098
	(B * !D_N * X)	-0.00214	-0.00221	-0.00218
	(B * !C * D_N * X)	0.00099	0.00099	0.00099
	(B * !C * D_N * X)	-0.00214	-0.00220	-0.00218
	(!B * C * D_N * X)	0.00100	0.00099	0.00099
	(!B * C * D_N * X)	-0.00201	-0.00207	-0.00206
	(!B * C * !D_N * X)	0.00099	0.00099	0.00098
	(!B * C * !D_N * X)	-0.00202	-0.00208	-0.00207
	(!B * !C * !D_N * X)	0.00099	0.00099	0.00098
	(!B * !C * !D_N * X)	-0.00200	-0.00205	-0.00205

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)**	-0.00090	-0.00091	-0.00090
	(B * C * D_N * X)	0.00107	0.00107	0.00106
	(B * !D_N * X)	-0.00090	-0.00091	-0.00090
	(B * !D_N * X)	0.00107	0.00107	0.00106
	(B * !C * D_N * X)	-0.00090	-0.00091	-0.00090
	(B * !C * D_N * X)	0.00107	0.00107	0.00106
	(!B * C * D_N * X)	-0.00090	-0.00090	-0.00090
	(!B * C * D_N * X)	0.00102	0.00101	0.00101
	(!B * C * !D_N * X)	-0.00090	-0.00090	-0.00090
	(!B * C * !D_N * X)	0.00102	0.00101	0.00101
	(!B * !C * !D_N * X)	-0.00090	-0.00090	-0.00090
	(!B * !C * !D_N * X)	0.00100	0.00100	0.00100

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00099	-0.00099	-0.00099
	(B * C * D_N * X)	0.00108	0.00108	0.00108
	(B * !D_N * X)	-0.00096	-0.00096	-0.00096
	(B * !D_N * X)	0.00112	0.00111	0.00111
	(B * !C * D_N * X)	-0.00099	-0.00099	-0.00099
	(B * !C * D_N * X)	0.00108	0.00108	0.00108
	(!B * C * D_N * X)	-0.00099	-0.00099	-0.00099
	(!B * C * D_N * X)	0.00103	0.00102	0.00102
	(!B * C * !D_N * X)	-0.00096	-0.00095	-0.00096
	(!B * C * !D_N * X)	0.00106	0.00106	0.00106
	(!B * !C * !D_N * X)	-0.00096	-0.00095	-0.00095
	(!B * !C * !D_N * X)	0.00105	0.00105	0.00105
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00099	-0.00099	-0.00098
	(B * C * D_N * X)	0.00220	0.00220	0.00218
	(B * !D_N * X)	-0.00098	-0.00099	-0.00098
	(B * !D_N * X)	0.00220	0.00221	0.00218
	(B * !C * D_N * X)	-0.00099	-0.00099	-0.00098
	(B * !C * D_N * X)	0.00219	0.00220	0.00218
	(!B * C * D_N * X)	-0.00099	-0.00099	-0.00099
	(!B * C * D_N * X)	0.00208	0.00207	0.00206
	(!B * C * !D_N * X)	-0.00098	-0.00098	-0.00098
	(!B * C * !D_N * X)	0.00208	0.00208	0.00207
	(!B * !C * !D_N * X)	-0.00098	-0.00098	-0.00098
	(!B * !C * !D_N * X)	0.00206	0.00205	0.00205

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)**	0.00079	0.00078	0.00078
	(A * C * D_N * X)	-0.00077	-0.00078	-0.00078
	(A * C * !D_N * X)	0.00079	0.00078	0.00078
	(A * C * !D_N * X)	-0.00079	-0.00080	-0.00080
	(A * !C * D_N * X)	0.00079	0.00078	0.00078
	(A * !C * D_N * X)	-0.00073	-0.00072	-0.00072
	(A * !C * !D_N * X)	0.00078	0.00079	0.00078
	(A * !C * !D_N * X)	-0.00076	-0.00077	-0.00077
	(!A * C * D_N * X)	0.00078	0.00078	0.00078
	(!A * C * D_N * X)	-0.00101	-0.00104	-0.00103
	(!A * C * !D_N * X)	0.00078	0.00078	0.00078
	(!A * C * !D_N * X)	-0.00101	-0.00104	-0.00103
	(!A * !C * !D_N * X)	0.00078	0.00078	0.00078
	(!A * !C * !D_N * X)	-0.00095	-0.00097	-0.00097
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00090	0.00089	0.00089
	(A * C * D_N * X)	-0.00079	-0.00079	-0.00079
	(A * C * !D_N * X)	0.00086	0.00086	0.00086
	(A * C * !D_N * X)	-0.00084	-0.00084	-0.00084
	(A * !C * D_N * X)	0.00089	0.00089	0.00089
	(A * !C * D_N * X)	-0.00074	-0.00073	-0.00073
	(A * !C * !D_N * X)	0.00086	0.00086	0.00086
	(A * !C * !D_N * X)	-0.00081	-0.00081	-0.00081
	(!A * C * D_N * X)	0.00089	0.00089	0.00088
	(!A * C * D_N * X)	-0.00103	-0.00105	-0.00105
	(!A * C * !D_N * X)	0.00086	0.00086	0.00086
	(!A * C * !D_N * X)	-0.00106	-0.00108	-0.00107
	(!A * !C * !D_N * X)	0.00085	0.00086	0.00086
	(!A * !C * !D_N * X)	-0.00099	-0.00101	-0.00101

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00128	0.00127	0.00127
	(A * C * D_N * X)	-0.00167	-0.00166	-0.00166
	(A * C * !D_N * X)	0.00125	0.00124	0.00124
	(A * C * !D_N * X)	-0.00172	-0.00173	-0.00172
	(A * !C * D_N * X)	0.00127	0.00125	0.00125
	(A * !C * D_N * X)	-0.00156	-0.00155	-0.00155
	(A * !C * !D_N * X)	0.00124	0.00124	0.00123
	(A * !C * !D_N * X)	-0.00166	-0.00165	-0.00165
	(!A * C * D_N * X)	0.00127	0.00125	0.00124
	(!A * C * D_N * X)	-0.00212	-0.00218	-0.00217
	(!A * C * !D_N * X)	0.00124	0.00123	0.00123
	(!A * C * !D_N * X)	-0.00215	-0.00220	-0.00219
	(!A * !C * !D_N * X)	0.00123	0.00124	0.00123
	(!A * !C * !D_N * X)	-0.00202	-0.00207	-0.00207

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)**	-0.00078	-0.00078	-0.00078
	(A * C * D_N * X)	0.00077	0.00078	0.00078
	(A * C * !D_N * X)	-0.00078	-0.00078	-0.00078
	(A * C * !D_N * X)	0.00079	0.00080	0.00080
	(A * !C * D_N * X)	-0.00078	-0.00078	-0.00078
	(A * !C * D_N * X)	0.00073	0.00073	0.00073
	(A * !C * !D_N * X)	-0.00078	-0.00078	-0.00078
	(A * !C * !D_N * X)	0.00076	0.00077	0.00077
	(!A * C * D_N * X)	-0.00078	-0.00078	-0.00078
	(!A * C * D_N * X)	0.00104	0.00104	0.00103
	(!A * C * !D_N * X)	-0.00078	-0.00078	-0.00078
	(!A * C * !D_N * X)	0.00103	0.00104	0.00103
	(!A * !C * !D_N * X)	-0.00078	-0.00078	-0.00078
	(!A * !C * !D_N * X)	0.00097	0.00097	0.00097
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00089	-0.00088	-0.00088
	(A * C * D_N * X)	0.00079	0.00079	0.00079
	(A * C * !D_N * X)	-0.00085	-0.00085	-0.00085
	(A * C * !D_N * X)	0.00084	0.00084	0.00084
	(A * !C * D_N * X)	-0.00088	-0.00088	-0.00088
	(A * !C * D_N * X)	0.00074	0.00074	0.00074
	(A * !C * !D_N * X)	-0.00085	-0.00085	-0.00085
	(A * !C * !D_N * X)	0.00081	0.00081	0.00081
	(!A * C * D_N * X)	-0.00089	-0.00089	-0.00088
	(!A * C * D_N * X)	0.00105	0.00106	0.00105
	(!A * C * !D_N * X)	-0.00086	-0.00086	-0.00085
	(!A * C * !D_N * X)	0.00108	0.00108	0.00107
	(!A * !C * !D_N * X)	-0.00085	-0.00085	-0.00085
	(!A * !C * !D_N * X)	0.00102	0.00101	0.00101

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00126	-0.00125	-0.00125
	(A * C * D_N * X)	0.00167	0.00166	0.00166
	(A * C * !D_N * X)	-0.00123	-0.00123	-0.00123
	(A * C * !D_N * X)	0.00172	0.00173	0.00172
	(A * !C * D_N * X)	-0.00124	-0.00124	-0.00125
	(A * !C * D_N * X)	0.00156	0.00157	0.00157
	(A * !C * !D_N * X)	-0.00123	-0.00123	-0.00123
	(A * !C * !D_N * X)	0.00166	0.00165	0.00165
	(!A * C * D_N * X)	-0.00126	-0.00125	-0.00124
	(!A * C * D_N * X)	0.00217	0.00218	0.00217
	(!A * C * !D_N * X)	-0.00124	-0.00123	-0.00123
	(!A * C * !D_N * X)	0.00219	0.00220	0.00219
	(!A * !C * !D_N * X)	-0.00123	-0.00123	-0.00123
	(!A * !C * !D_N * X)	0.00207	0.00207	0.00207

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)	0.00094	0.00094	0.00094
	(B * D_N * X)	-0.00071	-0.00071	-0.00072
	(B * !D_N * X)	0.00086	0.00086	0.00086
	(B * !D_N * X)	-0.00083	-0.00083	-0.00083
	(A * !B * D_N * X)	0.00094	0.00094	0.00094
	(A * !B * D_N * X)	-0.00071	-0.00071	-0.00071
	(A * !B * !D_N * X)	0.00087	0.00086	0.00086
	(A * !B * !D_N * X)	-0.00086	-0.00087	-0.00086
	(!A * !B * !D_N * X)	0.00086	0.00086	0.00086
	(!A * !B * !D_N * X)	-0.00110	-0.00112	-0.00111

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00105	0.00105	0.00104
	(B * D_N * X)	-0.00073	-0.00073	-0.00074
	(B * !D_N * X)	0.00085	0.00085	0.00085
	(B * !D_N * X)	-0.00097	-0.00097	-0.00097
	(A * !B * D_N * X)	0.00105	0.00105	0.00105
	(A * !B * D_N * X)	-0.00073	-0.00073	-0.00073
	(A * !B * !D_N * X)	0.00085	0.00085	0.00085
	(A * !B * !D_N * X)	-0.00100	-0.00100	-0.00100
	(!A * !B * !D_N * X)	0.00085	0.00085	0.00085
	(!A * !B * !D_N * X)	-0.00124	-0.00125	-0.00125
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00157	0.00157	0.00156
	(B * D_N * X)	-0.00150	-0.00150	-0.00151
	(B * !D_N * X)	0.00126	0.00127	0.00126
	(B * !D_N * X)	-0.00190	-0.00191	-0.00190
	(A * !B * D_N * X)	0.00157	0.00157	0.00156
	(A * !B * D_N * X)	-0.00150	-0.00150	-0.00150
	(A * !B * !D_N * X)	0.00126	0.00126	0.00126
	(A * !B * !D_N * X)	-0.00194	-0.00195	-0.00194
	(!A * !B * !D_N * X)	0.00125	0.00126	0.00125
	(!A * !B * !D_N * X)	-0.00244	-0.00247	-0.00246

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)**	-0.00093	-0.00093	-0.00094
	(B * D_N * X)	0.00073	0.00073	0.00073
	(B * !D_N * X)	-0.00086	-0.00086	-0.00086
	(B * !D_N * X)	0.00083	0.00083	0.00083
	(A * !B * D_N * X)	-0.00089	-0.00090	-0.00093
	(A * !B * D_N * X)	0.00073	0.00073	0.00073
	(A * !B * !D_N * X)	-0.00086	-0.00086	-0.00086
	(A * !B * !D_N * X)	0.00086	0.00087	0.00086
	(!A * !B * !D_N * X)	-0.00086	-0.00086	-0.00085
	(!A * !B * !D_N * X)	0.00112	0.00112	0.00111
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00104	-0.00104	-0.00104
	(B * D_N * X)	0.00075	0.00074	0.00075
	(B * !D_N * X)	-0.00084	-0.00084	-0.00084
	(B * !D_N * X)	0.00097	0.00097	0.00097
	(A * !B * D_N * X)	-0.00100	-0.00100	-0.00103
	(A * !B * D_N * X)	0.00075	0.00074	0.00074
	(A * !B * !D_N * X)	-0.00084	-0.00085	-0.00084
	(A * !B * !D_N * X)	0.00100	0.00100	0.00100
	(!A * !B * !D_N * X)	-0.00085	-0.00085	-0.00084
	(!A * !B * !D_N * X)	0.00125	0.00125	0.00125
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00155	-0.00155	-0.00155
	(B * D_N * X)	0.00153	0.00152	0.00154
	(B * !D_N * X)	-0.00125	-0.00126	-0.00126
	(B * !D_N * X)	0.00190	0.00191	0.00190
	(A * !B * D_N * X)	-0.00144	-0.00145	-0.00153
	(A * !B * D_N * X)	0.00156	0.00154	0.00153
	(A * !B * !D_N * X)	-0.00125	-0.00126	-0.00125
	(A * !B * !D_N * X)	0.00194	0.00195	0.00194
	(!A * !B * !D_N * X)	-0.00125	-0.00126	-0.00125
	(!A * !B * !D_N * X)	0.00247	0.00247	0.00246

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00301	0.00282	0.00273
	(C * X)	0.00060	0.00041	0.00033
	(B * !C * X)	0.00306	0.00288	0.00277
	(B * !C * X)	0.00064	0.00044	0.00035
	(A * !B * !C * X)	0.00313	0.00295	0.00282
	(A * !B * !C * X)	0.00069	0.00048	0.00037
sky130_fd_sc_hs__or4b_2	(C * X)	0.00335	0.00318	0.00309
	(C * X)	0.00090	0.00071	0.00064
	(B * !C * X)	0.00342	0.00324	0.00314
	(B * !C * X)	0.00093	0.00074	0.00065
	(A * !B * !C * X)	0.00349	0.00331	0.00318
	(A * !B * !C * X)	0.00096	0.00078	0.00067
sky130_fd_sc_hs__or4b_4	(C * X)	0.00406	0.00389	0.00379
	(C * X)	0.00136	0.00117	0.00109
	(B * !C * X)	0.00423	0.00405	0.00390
	(B * !C * X)	0.00144	0.00125	0.00113
	(A * !B * !C * X)	0.00438	0.00420	0.00400
	(A * !B * !C * X)	0.00152	0.00133	0.00117

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00074	0.00061	0.00059
	(C * X)	0.00314	0.00301	0.00298
	(B * !C * X)	0.00074	0.00061	0.00059
	(B * !C * X)	0.00314	0.00301	0.00299
	(A * !B * !C * X)	0.00074	0.00061	0.00059
	(A * !B * !C * X)	0.00314	0.00301	0.00299
sky130_fd_sc_hs__or4b_2	(C * X)	0.00088	0.00075	0.00073
	(C * X)	0.00334	0.00320	0.00319
	(B * !C * X)	0.00088	0.00075	0.00073
	(B * !C * X)	0.00335	0.00320	0.00319
	(A * !B * !C * X)	0.00088	0.00075	0.00073
	(A * !B * !C * X)	0.00335	0.00321	0.00319
sky130_fd_sc_hs__or4b_4	(C * X)	0.00134	0.00121	0.00119
	(C * X)	0.00404	0.00391	0.00389
	(B * !C * X)	0.00134	0.00121	0.00119
	(B * !C * X)	0.00405	0.00392	0.00390
	(A * !B * !C * X)	0.00134	0.00121	0.00119
	(A * !B * !C * X)	0.00405	0.00392	0.00390

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D	X
0	0	0	0	0
0	0	x	1	1
0	x	1	x	1
x	1	x	x	1
1	x	x	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4_1	11.18880
sky130_fd_sc_hs__or4_2	12.78720
sky130_fd_sc_hs__or4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__or4_1	0.00236	0.00224	0.00230	0.00225	0.35340
sky130_fd_sc_hs__or4_2	0.00247	0.00243	0.00254	0.00255	0.71416
sky130_fd_sc_hs__or4_4	0.00356	0.00415	0.00422	0.00401	1.38675

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4_1	0.00000	0.00014	0.00026
sky130_fd_sc_hs__or4_2	0.00000	0.00019	0.00037
sky130_fd_sc_hs__or4_4	0.00000	0.00037	0.00056

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)	0.15514	1.20826	8.88431
	B->X (RR)	0.15535	1.20092	8.83049
	C->X (RR)	0.15163	1.18573	8.75704
	D->X (RR)	0.14512	1.16516	8.67358
sky130_fd_sc_hs__or4_2	A->X (RR)	0.13882	1.03527	8.85461
	B->X (RR)	0.13851	1.02913	8.81159
	C->X (RR)	0.13662	1.01923	8.76499
	D->X (RR)	0.13263	1.00548	8.70037
sky130_fd_sc_hs__or4_4	A->X (RR)	0.16749	0.99723	9.19862
	B->X (RR)	0.17427	0.99950	9.16475
	C->X (RR)	0.16469	0.97415	9.06640
	D->X (RR)	0.15781	0.95417	8.96404

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	1.03234	1.90832	7.55184
	B->X (FF)	0.98206	1.84651	7.58326
	C->X (FF)	0.89754	1.75149	7.55840
	D->X (FF)	0.75159	1.54242	6.86312
sky130_fd_sc_hs__or4_2	A->X (FF)	1.31021	2.21388	8.07488
	B->X (FF)	1.25915	2.14957	8.14365
	C->X (FF)	1.18906	2.06824	8.18178
	D->X (FF)	1.05450	1.86508	7.55190
sky130_fd_sc_hs__or4_4	A->X (FF)	1.22584	2.08615	7.96311
	B->X (FF)	1.21089	2.04950	8.03588
	C->X (FF)	1.09847	1.91894	8.01249
	D->X (FF)	0.91929	1.68215	7.32060

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00760	0.00748	0.00730
	A	0.00351	0.00339	0.00325
	B	0.00678	0.00673	0.00662
	B	0.00315	0.00311	0.00302
	C	0.00596	0.00592	0.00579
	C	0.00267	0.00264	0.00251
	D	0.00515	0.00506	0.00496
	D	0.00220	0.00211	0.00202
sky130_fd_sc_hs__or4_2	A	0.00949	0.00947	0.00934
	A	0.00518	0.00517	0.00509
	B	0.00862	0.00871	0.00867
	B	0.00474	0.00484	0.00483
	C	0.00790	0.00800	0.00791
	C	0.00436	0.00447	0.00441
	D	0.00711	0.00718	0.00709
	D	0.00389	0.00395	0.00388
sky130_fd_sc_hs__or4_4	A	0.01751	0.01770	0.01778
	A	0.01055	0.01074	0.01097
	B	0.01631	0.01637	0.01618
	B	0.00971	0.00977	0.00973
	C	0.01438	0.01461	0.01456
	C	0.00857	0.00880	0.00885
	D	0.01258	0.01271	0.01278
	D	0.00755	0.00768	0.00783

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00260	0.00261	0.00308
	A	0.00677	0.00678	0.00676
	B	0.00261	0.00266	0.00337
	B	0.00629	0.00633	0.00633
	C	0.00261	0.00266	0.00321
	C	0.00591	0.00597	0.00596
	D	0.00256	0.00259	0.00258
	D	0.00551	0.00555	0.00553
sky130_fd_sc_hs__or4_2	A	0.00416	0.00439	0.00447
	A	0.00856	0.00878	0.00884
	B	0.00418	0.00443	0.00451
	B	0.00810	0.00836	0.00843
	C	0.00417	0.00440	0.00476
	C	0.00772	0.00796	0.00804
	D	0.00413	0.00434	0.00440
	D	0.00736	0.00756	0.00761
sky130_fd_sc_hs__or4_4	A	0.00817	0.00880	0.00939
	A	0.01536	0.01601	0.01634
	B	0.00809	0.00866	0.00896
	B	0.01484	0.01539	0.01569
	C	0.00810	0.00866	0.00901
	C	0.01396	0.01452	0.01479
	D	0.00786	0.00843	0.00983
	D	0.01289	0.01346	0.01367

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00089	0.00089	0.00089
	(B * D * X)	-0.00106	-0.00108	-0.00108
	(B * C * !D * X)	0.00089	0.00089	0.00089
	(B * C * !D * X)	-0.00106	-0.00108	-0.00108
	(B * !C * !D * X)	0.00089	0.00089	0.00089
	(B * !C * !D * X)	-0.00106	-0.00108	-0.00108
	(!B * C * D * X)	0.00089	0.00090	0.00089
	(!B * C * D * X)	-0.00100	-0.00102	-0.00102
	(!B * C * !D * X)	0.00089	0.00090	0.00089
	(!B * C * !D * X)	-0.00100	-0.00102	-0.00103
	(!B * !C * D * X)	0.00089	0.00089	0.00089
	(!B * !C * D * X)	-0.00098	-0.00101	-0.00101
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00098	0.00098	0.00098
	(B * D * X)	-0.00108	-0.00110	-0.00109
	(B * C * !D * X)	0.00098	0.00098	0.00098
	(B * C * !D * X)	-0.00108	-0.00110	-0.00109
	(B * !C * !D * X)	0.00098	0.00098	0.00098
	(B * !C * !D * X)	-0.00108	-0.00110	-0.00109
	(!B * C * D * X)	0.00098	0.00099	0.00098
	(!B * C * D * X)	-0.00101	-0.00104	-0.00104
	(!B * C * !D * X)	0.00098	0.00099	0.00098
	(!B * C * !D * X)	-0.00101	-0.00104	-0.00104
	(!B * !C * D * X)	0.00098	0.00099	0.00098
	(!B * !C * D * X)	-0.00100	-0.00102	-0.00103

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00099	0.00100	0.00099
	(B * D * X)	-0.00212	-0.00218	-0.00216
	(B * C * !D * X)	0.00099	0.00100	0.00099
	(B * C * !D * X)	-0.00212	-0.00218	-0.00216
	(B * !C * !D * X)	0.00099	0.00100	0.00099
	(B * !C * !D * X)	-0.00211	-0.00218	-0.00215
	(!B * C * D * X)	0.00100	0.00100	0.00099
	(!B * C * D * X)	-0.00199	-0.00205	-0.00204
	(!B * C * !D * X)	0.00100	0.00100	0.00099
	(!B * C * !D * X)	-0.00199	-0.00205	-0.00204
	(!B * !C * D * X)	0.00099	0.00100	0.00099
	(!B * !C * D * X)	-0.00196	-0.00202	-0.00201

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00089	-0.00089	-0.00089
	(B * D * X)	0.00108	0.00109	0.00108
	(B * C * !D * X)	-0.00089	-0.00089	-0.00089
	(B * C * !D * X)	0.00108	0.00109	0.00108
	(B * !C * !D * X)	-0.00089	-0.00089	-0.00089
	(B * !C * !D * X)	0.00108	0.00109	0.00108
	(!B * C * D * X)	-0.00089	-0.00088	-0.00088
	(!B * C * D * X)	0.00103	0.00102	0.00102
	(!B * C * !D * X)	-0.00089	-0.00088	-0.00088
	(!B * C * !D * X)	0.00103	0.00102	0.00103
	(!B * !C * D * X)	-0.00089	-0.00088	-0.00088
	(!B * !C * D * X)	0.00101	0.00101	0.00101

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00098	-0.00098	-0.00098
	(B * D * X)	0.00110	0.00110	0.00109
	(B * C * !D * X)	-0.00098	-0.00098	-0.00098
	(B * C * !D * X)	0.00110	0.00110	0.00109
	(B * !C * !D * X)	-0.00098	-0.00098	-0.00098
	(B * !C * !D * X)	0.00110	0.00111	0.00109
	(!B * C * D * X)	-0.00098	-0.00097	-0.00098
	(!B * C * D * X)	0.00105	0.00104	0.00104
	(!B * C * !D * X)	-0.00098	-0.00097	-0.00098
	(!B * C * !D * X)	0.00105	0.00104	0.00104
	(!B * !C * D * X)	-0.00098	-0.00098	-0.00098
	(!B * !C * D * X)	0.00103	0.00102	0.00103
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00099	-0.00099	-0.00099
	(B * D * X)	0.00217	0.00218	0.00216
	(B * C * !D * X)	-0.00099	-0.00099	-0.00099
	(B * C * !D * X)	0.00217	0.00218	0.00216
	(B * !C * !D * X)	-0.00099	-0.00099	-0.00099
	(B * !C * !D * X)	0.00217	0.00218	0.00215
	(!B * C * D * X)	-0.00099	-0.00099	-0.00099
	(!B * C * D * X)	0.00206	0.00205	0.00204
	(!B * C * !D * X)	-0.00099	-0.00099	-0.00099
	(!B * C * !D * X)	0.00206	0.00205	0.00204
	(!B * !C * D * X)	-0.00099	-0.00099	-0.00099
	(!B * !C * D * X)	0.00203	0.00202	0.00201

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

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

sky130_fd_sc_hs__or4_1	**(A * C * D * X)**	0.00078	0.00078	0.00078
	(A * C * D * X)	-0.00083	-0.00083	-0.00083
	(A * C * !D * X)	0.00079	0.00078	0.00078
	(A * C * !D * X)	-0.00081	-0.00081	-0.00081
	(A * !C * D * X)	0.00079	0.00078	0.00078
	(A * !C * D * X)	-0.00079	-0.00079	-0.00079
	(A * !C * !D * X)	0.00078	0.00078	0.00078
	(A * !C * !D * X)	-0.00075	-0.00075	-0.00075
	(!A * C * D * X)	0.00078	0.00078	0.00078
	(!A * C * D * X)	-0.00104	-0.00106	-0.00106
	(!A * C * !D * X)	0.00078	0.00078	0.00078
	(!A * C * !D * X)	-0.00104	-0.00106	-0.00106
	(!A * !C * D * X)	0.00078	0.00078	0.00078
	(!A * !C * D * X)	-0.00096	-0.00099	-0.00099
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00087	0.00087	0.00087
	(A * C * D * X)	-0.00087	-0.00088	-0.00088
	(A * C * !D * X)	0.00087	0.00087	0.00087
	(A * C * !D * X)	-0.00085	-0.00086	-0.00086
	(A * !C * D * X)	0.00087	0.00087	0.00087
	(A * !C * D * X)	-0.00084	-0.00084	-0.00084
	(A * !C * !D * X)	0.00087	0.00087	0.00087
	(A * !C * !D * X)	-0.00081	-0.00080	-0.00080
	(!A * C * D * X)	0.00087	0.00087	0.00087
	(!A * C * D * X)	-0.00109	-0.00111	-0.00111
	(!A * C * !D * X)	0.00087	0.00087	0.00087
	(!A * C * !D * X)	-0.00109	-0.00111	-0.00111
	(!A * !C * D * X)	0.00087	0.00087	0.00087
	(!A * !C * D * X)	-0.00102	-0.00105	-0.00105

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00130	0.00129	0.00129
	(A * C * D * X)	-0.00170	-0.00171	-0.00171
	(A * C * !D * X)	0.00130	0.00128	0.00129
	(A * C * !D * X)	-0.00167	-0.00166	-0.00166
	(A * !C * D * X)	0.00128	0.00128	0.00128
	(A * !C * D * X)	-0.00164	-0.00163	-0.00163
	(A * !C * !D * X)	0.00128	0.00127	0.00128
	(A * !C * !D * X)	-0.00156	-0.00155	-0.00155
	(!A * C * D * X)	0.00129	0.00128	0.00127
	(!A * C * D * X)	-0.00212	-0.00218	-0.00217
	(!A * C * !D * X)	0.00129	0.00127	0.00127
	(!A * C * !D * X)	-0.00212	-0.00218	-0.00217
	(!A * !C * D * X)	0.00127	0.00128	0.00127
	(!A * !C * D * X)	-0.00199	-0.00204	-0.00204

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)**	-0.00078	-0.00078	-0.00078
	(A * C * D * X)	0.00083	0.00083	0.00083
	(A * C * !D * X)	-0.00078	-0.00078	-0.00078
	(A * C * !D * X)	0.00081	0.00081	0.00081
	(A * !C * D * X)	-0.00077	-0.00078	-0.00078
	(A * !C * D * X)	0.00079	0.00079	0.00079
	(A * !C * !D * X)	-0.00078	-0.00078	-0.00078
	(A * !C * !D * X)	0.00076	0.00075	0.00076
	(!A * C * D * X)	-0.00078	-0.00078	-0.00078
	(!A * C * D * X)	0.00106	0.00107	0.00106
	(!A * C * !D * X)	-0.00078	-0.00078	-0.00078
	(!A * C * !D * X)	0.00107	0.00107	0.00106
	(!A * !C * D * X)	-0.00078	-0.00077	-0.00078
	(!A * !C * D * X)	0.00099	0.00099	0.00099
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00086	-0.00087	-0.00086
	(A * C * D * X)	0.00087	0.00088	0.00088
	(A * C * !D * X)	-0.00086	-0.00086	-0.00086
	(A * C * !D * X)	0.00085	0.00086	0.00086
	(A * !C * D * X)	-0.00086	-0.00086	-0.00086
	(A * !C * D * X)	0.00084	0.00084	0.00084
	(A * !C * !D * X)	-0.00086	-0.00086	-0.00086
	(A * !C * !D * X)	0.00081	0.00081	0.00081
	(!A * C * D * X)	-0.00087	-0.00086	-0.00086
	(!A * C * D * X)	0.00112	0.00111	0.00111
	(!A * C * !D * X)	-0.00087	-0.00086	-0.00086
	(!A * C * !D * X)	0.00112	0.00111	0.00111
	(!A * !C * D * X)	-0.00087	-0.00086	-0.00086
	(!A * !C * D * X)	0.00105	0.00105	0.00105

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00128	-0.00128	-0.00128
	(A * C * D * X)	0.00170	0.00171	0.00171
	(A * C * !D * X)	-0.00128	-0.00128	-0.00128
	(A * C * !D * X)	0.00167	0.00166	0.00166
	(A * !C * D * X)	-0.00127	-0.00127	-0.00127
	(A * !C * D * X)	0.00164	0.00163	0.00163
	(A * !C * !D * X)	-0.00127	-0.00127	-0.00127
	(A * !C * !D * X)	0.00156	0.00157	0.00157
	(!A * C * D * X)	-0.00128	-0.00128	-0.00127
	(!A * C * D * X)	0.00217	0.00218	0.00217
	(!A * C * !D * X)	-0.00128	-0.00127	-0.00127
	(!A * C * !D * X)	0.00217	0.00218	0.00217
	(!A * !C * D * X)	-0.00127	-0.00127	-0.00127
	(!A * !C * D * X)	0.00205	0.00204	0.00204

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00080	0.00080	0.00080
	(B * D * X)	-0.00078	-0.00078	-0.00078
	(B * !D * X)	0.00079	0.00080	0.00079
	(B * !D * X)	-0.00073	-0.00074	-0.00074
	(A * !B * D * X)	0.00080	0.00080	0.00080
	(A * !B * D * X)	-0.00081	-0.00081	-0.00080
	(A * !B * !D * X)	0.00081	0.00080	0.00079
	(A * !B * !D * X)	-0.00075	-0.00073	-0.00074
	(!A * !B * D * X)	0.00080	0.00079	0.00079
	(!A * !B * D * X)	-0.00102	-0.00105	-0.00105

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00093	0.00093	0.00093
	(B * D * X)	-0.00078	-0.00078	-0.00078
	(B * !D * X)	0.00095	0.00093	0.00093
	(B * !D * X)	-0.00076	-0.00074	-0.00075
	(A * !B * D * X)	0.00094	0.00093	0.00093
	(A * !B * D * X)	-0.00081	-0.00081	-0.00081
	(A * !B * !D * X)	0.00093	0.00094	0.00093
	(A * !B * !D * X)	-0.00074	-0.00074	-0.00075
	(!A * !B * D * X)	0.00093	0.00093	0.00093
	(!A * !B * D * X)	-0.00104	-0.00107	-0.00106
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00131	0.00132	0.00131
	(B * D * X)	-0.00162	-0.00162	-0.00162
	(B * !D * X)	0.00130	0.00131	0.00130
	(B * !D * X)	-0.00152	-0.00153	-0.00153
	(A * !B * D * X)	0.00131	0.00131	0.00131
	(A * !B * D * X)	-0.00166	-0.00166	-0.00166
	(A * !B * !D * X)	0.00133	0.00131	0.00130
	(A * !B * !D * X)	-0.00155	-0.00152	-0.00153
	(!A * !B * D * X)	0.00130	0.00130	0.00130
	(!A * !B * D * X)	-0.00214	-0.00219	-0.00218

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00079	-0.00079	-0.00079
	(B * D * X)	0.00078	0.00078	0.00078
	(B * !D * X)	-0.00079	-0.00079	-0.00079
	(B * !D * X)	0.00075	0.00075	0.00075
	(A * !B * D * X)	-0.00079	-0.00080	-0.00079
	(A * !B * D * X)	0.00081	0.00081	0.00080
	(A * !B * !D * X)	-0.00076	-0.00076	-0.00078
	(A * !B * !D * X)	0.00076	0.00076	0.00075
	(!A * !B * D * X)	-0.00079	-0.00079	-0.00079
	(!A * !B * D * X)	0.00105	0.00105	0.00105
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00093	-0.00093	-0.00093
	(B * D * X)	0.00078	0.00078	0.00078
	(B * !D * X)	-0.00092	-0.00092	-0.00092
	(B * !D * X)	0.00076	0.00076	0.00076
	(A * !B * D * X)	-0.00093	-0.00093	-0.00093
	(A * !B * D * X)	0.00081	0.00081	0.00081
	(A * !B * !D * X)	-0.00090	-0.00090	-0.00091
	(A * !B * !D * X)	0.00076	0.00076	0.00076
	(!A * !B * D * X)	-0.00093	-0.00093	-0.00093
	(!A * !B * D * X)	0.00106	0.00107	0.00106
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00130	-0.00130	-0.00131
	(B * D * X)	0.00162	0.00162	0.00162
	(B * !D * X)	-0.00130	-0.00130	-0.00129
	(B * !D * X)	0.00156	0.00155	0.00156
	(A * !B * D * X)	-0.00130	-0.00130	-0.00130
	(A * !B * D * X)	0.00166	0.00166	0.00166
	(A * !B * !D * X)	-0.00121	-0.00122	-0.00126
	(A * !B * !D * X)	0.00158	0.00157	0.00155
	(!A * !B * D * X)	-0.00130	-0.00130	-0.00129
	(!A * !B * D * X)	0.00219	0.00219	0.00218

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00090	0.00090	0.00090
	(C * X)	-0.00070	-0.00069	-0.00069
	(B * !C * X)	0.00089	0.00090	0.00090
	(B * !C * X)	-0.00069	-0.00069	-0.00069
	(A * !B * !C * X)	0.00089	0.00090	0.00090
	(A * !B * !C * X)	-0.00069	-0.00069	-0.00069
sky130_fd_sc_hs__or4_2	(C * X)	0.00107	0.00107	0.00107
	(C * X)	-0.00069	-0.00069	-0.00069
	(B * !C * X)	0.00107	0.00107	0.00107
	(B * !C * X)	-0.00069	-0.00069	-0.00069
	(A * !B * !C * X)	0.00107	0.00107	0.00107
	(A * !B * !C * X)	-0.00069	-0.00069	-0.00069
sky130_fd_sc_hs__or4_4	(C * X)	0.00151	0.00151	0.00150
	(C * X)	-0.00137	-0.00136	-0.00136
	(B * !C * X)	0.00151	0.00151	0.00150
	(B * !C * X)	-0.00137	-0.00136	-0.00135
	(A * !B * !C * X)	0.00151	0.00151	0.00150
	(A * !B * !C * X)	-0.00137	-0.00136	-0.00135

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00087	-0.00087	-0.00090
	(C * X)	0.00072	0.00072	0.00070
	(B * !C * X)	-0.00081	-0.00081	-0.00089
	(B * !C * X)	0.00076	0.00076	0.00070
	(A * !B * !C * X)	-0.00073	-0.00073	-0.00086
	(A * !B * !C * X)	0.00081	0.00080	0.00072
sky130_fd_sc_hs__or4_2	(C * X)	-0.00105	-0.00105	-0.00107
	(C * X)	0.00071	0.00071	0.00070
	(B * !C * X)	-0.00099	-0.00099	-0.00106
	(B * !C * X)	0.00075	0.00075	0.00070
	(A * !B * !C * X)	-0.00091	-0.00091	-0.00104
	(A * !B * !C * X)	0.00080	0.00080	0.00071
sky130_fd_sc_hs__or4_4	(C * X)	-0.00144	-0.00145	-0.00150
	(C * X)	0.00143	0.00142	0.00137
	(B * !C * X)	-0.00128	-0.00129	-0.00147
	(B * !C * X)	0.00152	0.00152	0.00138
	(A * !B * !C * X)	-0.00112	-0.00114	-0.00142
	(A * !B * !C * X)	0.00161	0.00161	0.00141

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT						OUTPUT	
D	SCD	SCE	RESET_B	SET_B	CLK_N	Q	Q_N
0	0	x	1	1	F	0	1
0	1	0	1	1	F	0	1
x	1	1	1	1	F	1	0
1	x	0	1	1	F	1	0
1	0	1	1	1	F	0	1
x	x	x	x	0	x	1	0
x	x	x	0	1	x	0	1
x	x	x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbn_1	55.94400
sky130_fd_sc_hs__sdfbbn_2	60.73920

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	SCD	SCE	RESET_B	SET_B	CLK_N	Q	Q_N
sky130_fd_sc_hs__sdfbbn_1	0.00182	0.00159	0.00385	0.00167	0.00519	0.00282	0.35964	0.35758
sky130_fd_sc_hs__sdfbbn_2	0.00184	0.00160	0.00390	0.00154	0.00512	0.00279	0.72448	0.72315

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	0.00117	0.00142
sky130_fd_sc_hs__sdfbbn_2	0.00000	0.00134	0.00156

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)	1.24315	2.53193	12.93970
	SET_B->Q (FR)	0.54667	1.83306	12.39130
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	1.42228	2.52933	13.13350
	SET_B->Q (FR)	0.64041	1.75879	12.63050

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)	1.15795	1.95206	7.21069
	RESET_B->Q (FF)	0.63634	1.42213	6.60026
	SET_B->Q (RF)	0.32378	0.83728	3.51819
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	1.22731	1.99820	7.30018
	RESET_B->Q (FF)	0.72076	1.48377	6.72400
	SET_B->Q (RF)	0.40818	0.91600	3.76395

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)	1.07012	2.39310	12.72740
	RESET_B->Q_N (FR)	0.55024	1.86823	12.14490
	SET_B->Q_N (RR)	0.23615	1.28937	9.10311
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	1.05199	2.22823	12.71150
	RESET_B->Q_N (FR)	0.54710	1.71440	12.15130
	SET_B->Q_N (RR)	0.23470	1.15248	9.22270

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)	1.05345	1.98959	7.42627
	SET_B->Q_N (FF)	0.39230	1.25691	7.02971
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	1.15209	2.09246	7.58431
	SET_B->Q_N (FF)	0.43961	1.28975	7.20246

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)	0.06757	0.18089	2.82488
	setup	CLK_N (F)	0.39199	0.23473	-2.72019
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.06478	0.17251	2.78906
	setup	CLK_N (F)	0.40301	0.24248	-2.67642

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)	-0.79864	-0.81784	-2.08835
	setup	CLK_N (F)	0.88778	0.89398	2.23199
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.85761	-0.87571	-2.20964
	setup	CLK_N (F)	0.95448	0.95683	2.34903

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)	0.06757	0.18089	2.82488
	setup	CLK_N (F)	0.39199	0.23473	-2.72019
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.06478	0.17251	2.78906
	setup	CLK_N (F)	0.40301	0.24248	-2.67642

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)	-0.79864	-0.81784	-2.08835
	setup	CLK_N (F)	0.88778	0.89398	2.23199
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.85761	-0.87571	-2.20964
	setup	CLK_N (F)	0.95448	0.95683	2.34903

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)	0.04986	0.17088	2.68006
	setup	CLK_N (F)	0.41596	0.24906	-2.58026
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.04562	0.16680	2.64881
	setup	CLK_N (F)	0.42246	0.26256	-2.54854

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)	-0.96449	-1.03558	-2.74762
	setup	CLK_N (F)	1.06424	1.12095	2.91886
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-1.02585	-1.09368	-2.85090
	setup	CLK_N (F)	1.13342	1.18526	3.02673

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)	0.04986	0.17088	2.68006
	hold	CLK_N (F)	0.04805	0.16926	2.66557
	setup	CLK_N (F)	0.41553	0.24747	-2.58692
	setup	CLK_N (F)	0.41596	0.24906	-2.58026
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.04562	0.16680	2.64881
	hold	CLK_N (F)	0.04171	0.16557	2.63497
	setup	CLK_N (F)	0.42246	0.25580	-2.55535
	setup	CLK_N (F)	0.42194	0.26256	-2.54854

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)	-0.96589	-1.04126	-2.74762
	hold	CLK_N (F)	-0.96449	-1.03558	-2.78910
	setup	CLK_N (F)	1.05603	1.11729	2.87420
	setup	CLK_N (F)	1.06424	1.12095	2.91886
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-1.02585	-1.09792	-2.85090
	hold	CLK_N (F)	-1.02707	-1.09368	-2.89201
	setup	CLK_N (F)	1.12598	1.18487	2.98377
	setup	CLK_N (F)	1.13342	1.18526	3.02673

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)	0.06477	0.17249	2.76985
	setup	CLK_N (F)	1.02222	0.91479	-1.27403
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	0.05914	0.16724	2.73463
	setup	CLK_N (F)	1.08961	0.98235	-1.21034

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)	-0.09996	-0.09643	0.50329
	setup	CLK_N (F)	0.88952	0.93696	2.58668
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.10777	-0.10315	0.48791
	setup	CLK_N (F)	0.95510	0.99983	2.70285

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)	-0.92874	-0.83791	1.39863
	hold	CLK_N (F)	0.06477	0.17249	2.76985
	setup	CLK_N (F)	1.02222	0.91479	-1.27403
	setup	CLK_N (F)	0.39917	0.24807	-2.66212
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.98737	-0.89732	1.31568
	hold	CLK_N (F)	0.05914	0.16724	2.73463
	setup	CLK_N (F)	1.08961	0.98235	-1.21034
	setup	CLK_N (F)	0.40971	0.25290	-2.62678

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)	-0.09996	-0.09643	0.50329
	hold	CLK_N (F)	-0.80191	-0.86240	-2.45433
	setup	CLK_N (F)	0.55951	0.51551	-0.46745
	setup	CLK_N (F)	0.88952	0.93696	2.58668
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.10777	-0.10315	0.48791
	hold	CLK_N (F)	-0.85855	-0.91930	-2.56353
	setup	CLK_N (F)	0.56690	0.51940	-0.45479
	setup	CLK_N (F)	0.95510	0.99983	2.70285

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)	0.31934	0.15438	-3.05852
	removal	CLK_N (F)	0.16769	0.28731	3.17313
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.31527	0.14849	-3.07054
	removal	CLK_N (F)	0.17706	0.30034	3.19697

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)	0.31734	0.15438	-3.05852
	recovery	CLK_N (F)	0.31934	0.15425	-3.05854
	recovery	CLK_N (F)	0.31731	0.15430	-3.05861
	removal	CLK_N (F)	0.16369	0.28731	3.17313
	removal	CLK_N (F)	0.16631	0.28731	3.17313
	removal	CLK_N (F)	0.16769	0.28731	3.17313
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.31524	0.14849	-3.07054
	recovery	CLK_N (F)	0.31527	0.14816	-3.07225
	recovery	CLK_N (F)	0.31506	0.14816	-3.07396
	removal	CLK_N (F)	0.17706	0.30034	3.19697
	removal	CLK_N (F)	0.17576	0.30034	3.19697
	removal	CLK_N (F)	0.17576	0.30034	3.19697

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 ()	0.62136	1.09900	16.50020
	min_pulse_width	RESET_B ()	0.51656	1.09900	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.60320	1.10286	16.50020
	min_pulse_width	RESET_B ()	0.52431	1.10286	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)	-0.16066	-0.32116	-3.20136
	removal	CLK_N (F)	0.19010	0.35813	3.29684
	hold	RESET_B (R)	-0.11977	-0.21843	-1.09993
	setup	RESET_B (R)	0.36607	0.37971	1.40166
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.15171	-0.31052	-3.13447
	removal	CLK_N (F)	0.18594	0.34941	3.25966
	hold	RESET_B (R)	-0.15593	-0.27154	-1.34734
	setup	RESET_B (R)	0.33672	0.38325	1.54346

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)	-0.16068	-0.32178	-3.20136
	recovery	CLK_N (F)	-0.16066	-0.32178	-3.20173
	recovery	CLK_N (F)	-0.16112	-0.32116	-3.20159
	removal	CLK_N (F)	0.19010	0.35813	3.29589
	removal	CLK_N (F)	0.19010	0.35813	3.29589
	removal	CLK_N (F)	0.19010	0.35813	3.29684
	hold	RESET_B (R)	-0.11977	-0.21843	-1.09993
	hold	RESET_B (R)	-0.12087	-0.22056	-1.10182
	setup	RESET_B (R)	0.36607	0.37971	1.32413
	setup	RESET_B (R)	0.22697	0.29879	1.40166
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.15435	-0.31112	-3.13710
	recovery	CLK_N (F)	-0.15446	-0.31109	-3.13454
	recovery	CLK_N (F)	-0.15171	-0.31052	-3.13447
	removal	CLK_N (F)	0.18594	0.34941	3.25871
	removal	CLK_N (F)	0.18594	0.34941	3.25871
	removal	CLK_N (F)	0.18435	0.34941	3.25966
	hold	RESET_B (R)	-0.16295	-0.27855	-1.34844
	hold	RESET_B (R)	-0.15593	-0.27154	-1.34734
	setup	RESET_B (R)	0.33672	0.38325	1.54346
	setup	RESET_B (R)	0.23841	0.33290	1.53424

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 ()	0.42466	1.13762	16.50020
	min_pulse_width	SET_B ()	0.40951	1.14921	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.50269	1.22259	16.50020
	min_pulse_width	SET_B ()	0.47487	1.19555	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 ()	0.54839	1.04492	16.50020
	min_pulse_width	CLK_N ()	0.40325	1.04492	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.55603	1.04492	16.50020
	min_pulse_width	CLK_N ()	0.42999	1.04492	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 ()	0.63304	1.05265	16.50020
	min_pulse_width	CLK_N ()	0.70117	1.04492	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.70980	1.06423	16.50020
	min_pulse_width	CLK_N ()	0.69735	1.04492	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	0.00917	0.00918	0.00951
	CLK_N	0.01064	0.01065	0.01050
	SET_B	0.00935	0.00924	0.00952
	SET_B	0.01205	0.01193	0.01174
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01080	0.01098	0.01182
	CLK_N	0.01219	0.01237	0.01233
	SET_B	0.01108	0.01113	0.01251
	SET_B	0.01369	0.01375	0.01363

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00986	0.00987	0.00960
	CLK_N	0.01111	0.01112	0.01085
	RESET_B	0.01161	0.01168	0.01124
	RESET_B	0.01238	0.01244	0.01198
	SET_B	0.01207	0.01197	0.01156
	SET_B	0.00936	0.00922	0.00884
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01156	0.01172	0.01165
	CLK_N	0.01284	0.01300	0.01273
	RESET_B	0.01361	0.01385	0.01409
	RESET_B	0.01439	0.01463	0.01415
	SET_B	0.01400	0.01404	0.01362
	SET_B	0.01136	0.01143	0.01099

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00987	0.00987	0.00979
	CLK_N	0.01112	0.01113	0.01104
	RESET_B	0.01162	0.01169	0.01182
	RESET_B	0.01239	0.01245	0.01221
	SET_B	0.01208	0.01196	0.01177
	SET_B	0.00937	0.00923	0.00906
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01157	0.01173	0.01434
	CLK_N	0.01285	0.01301	0.01304
	RESET_B	0.01362	0.01386	0.01452
	RESET_B	0.01440	0.01464	0.01447
	SET_B	0.01401	0.01406	0.01393
	SET_B	0.01137	0.01143	0.01129

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.00916	0.00917	0.00907
	CLK_N	0.01063	0.01064	0.01031
	SET_B	0.00931	0.00920	0.00888
	SET_B	0.01201	0.01189	0.01149
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01079	0.01096	0.01068
	CLK_N	0.01218	0.01236	0.01202
	SET_B	0.01104	0.01110	0.01216
	SET_B	0.01365	0.01371	0.01329

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)**	0.00077	0.00078	0.00077
	(CLK_N * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00776	0.00761	0.00747
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00608	0.00593	0.00579
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00534	0.00524	0.00514
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00335	0.00325	0.00315
	(CLK_N * !SCD * SCE)	0.00034	0.00034	0.00033
	(CLK_N * !SCD * SCE)	-0.00092	-0.00094	-0.00094
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00462	0.00452	0.00440
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00264	0.00255	0.00243
	(!CLK_N * SCD * SCE)	0.00077	0.00077	0.00077
	(!CLK_N * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK_N * !SCE)	0.00306	0.00292	0.00284
	(!CLK_N * !SCE)	0.00108	0.00095	0.00087
	(!CLK_N * !SCD * SCE)	0.00034	0.00034	0.00033
	(!CLK_N * !SCD * SCE)	-0.00092	-0.00094	-0.00094

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00080	0.00081	0.00080
	(CLK_N * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00785	0.00769	0.00753
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00611	0.00596	0.00580
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00545	0.00535	0.00525
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00342	0.00332	0.00322
	(CLK_N * !SCD * SCE)	0.00036	0.00036	0.00035
	(CLK_N * !SCD * SCE)	-0.00092	-0.00094	-0.00094
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00466	0.00456	0.00445
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00265	0.00255	0.00244
	(!CLK_N * SCD * SCE)	0.00079	0.00080	0.00080
	(!CLK_N * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK_N * !SCE)	0.00302	0.00288	0.00280
	(!CLK_N * !SCE)	0.00101	0.00087	0.00079
	(!CLK_N * !SCD * SCE)	0.00036	0.00036	0.00035
	(!CLK_N * !SCD * SCE)	-0.00092	-0.00094	-0.00094

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)**	-0.00075	-0.00076	-0.00077
	(CLK_N * SCD * SCE)	0.00047	0.00048	0.00046
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00746	0.00728	0.00715
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00915	0.00896	0.00883
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00240	0.00224	0.00218
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00439	0.00423	0.00417
	(CLK_N * !SCD * SCE)	-0.00033	-0.00033	-0.00033
	(CLK_N * !SCD * SCE)	0.00094	0.00094	0.00094
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00308	0.00293	0.00290
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00505	0.00490	0.00487
	(!CLK_N * SCD * SCE)	-0.00075	-0.00076	-0.00077
	(!CLK_N * SCD * SCE)	0.00048	0.00048	0.00046
	(!CLK_N * !SCE)	0.00158	0.00144	0.00141
	(!CLK_N * !SCE)	0.00355	0.00341	0.00338
	(!CLK_N * !SCD * SCE)	-0.00033	-0.00033	-0.00033
	(!CLK_N * !SCD * SCE)	0.00094	0.00094	0.00094

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00077	-0.00078	-0.00080
	(CLK_N * SCD * SCE)	0.00047	0.00048	0.00046
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00810	0.00793	0.00777
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00985	0.00966	0.00950
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00263	0.00247	0.00240
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00465	0.00450	0.00443
	(CLK_N * !SCD * SCE)	-0.00035	-0.00035	-0.00035
	(CLK_N * !SCD * SCE)	0.00094	0.00094	0.00094
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00337	0.00321	0.00318
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00538	0.00522	0.00519
	(!CLK_N * SCD * SCE)	-0.00077	-0.00078	-0.00080
	(!CLK_N * SCD * SCE)	0.00047	0.00048	0.00046
	(!CLK_N * !SCE)	0.00177	0.00162	0.00159
	(!CLK_N * !SCE)	0.00377	0.00364	0.00360
	(!CLK_N * !SCD * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK_N * !SCD * SCE)	0.00094	0.00094	0.00094

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)**	0.00611	0.00604	0.00595
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00364	0.00357	0.00349
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00851	0.00841	0.00827
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00635	0.00625	0.00612
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00538	0.00531	0.00521
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00293	0.00287	0.00277
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00645	0.00639	0.00628
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00394	0.00388	0.00378
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00886	0.00877	0.00860
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00667	0.00657	0.00642
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00572	0.00566	0.00554
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00323	0.00317	0.00306
	(!CLK_N * D * SCE)	0.00382	0.00375	0.00365
	(!CLK_N * D * SCE)	0.00137	0.00129	0.00121
	(!CLK_N * !D * SCE)	0.00417	0.00409	0.00399
	(!CLK_N * !D * SCE)	0.00168	0.00160	0.00151
	!SCE	0.00058	0.00058	0.00057
	!SCE	-0.00076	-0.00079	-0.00078

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00619	0.00613	0.00604
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00373	0.00366	0.00358
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00857	0.00847	0.00833
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00640	0.00630	0.00616
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00540	0.00534	0.00524
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00296	0.00289	0.00280
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00653	0.00646	0.00636
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00403	0.00396	0.00387
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00891	0.00882	0.00866
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00671	0.00660	0.00645
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00574	0.00568	0.00556
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00326	0.00319	0.00308
	(!CLK_N * D * SCE)	0.00376	0.00369	0.00360
	(!CLK_N * D * SCE)	0.00132	0.00124	0.00115
	(!CLK_N * !D * SCE)	0.00410	0.00403	0.00392
	(!CLK_N * !D * SCE)	0.00161	0.00154	0.00145
	!SCE	0.00058	0.00058	0.00057
	!SCE	-0.00078	-0.00080	-0.00079

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)**	0.00319	0.00313	0.00308
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00567	0.00561	0.00554
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00824	0.00818	0.00807
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01041	0.01034	0.01021
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00388	0.00382	0.00380
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00633	0.00628	0.00623
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00295	0.00290	0.00287
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00547	0.00541	0.00536
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00801	0.00795	0.00787
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01021	0.01014	0.01005
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00364	0.00358	0.00358
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00613	0.00607	0.00606
	(!CLK_N * D * SCE)	0.00239	0.00233	0.00231
	(!CLK_N * D * SCE)	0.00484	0.00479	0.00475
	(!CLK_N * !D * SCE)	0.00215	0.00209	0.00210
	(!CLK_N * !D * SCE)	0.00464	0.00458	0.00457
	!SCE	-0.00057	-0.00058	-0.00057
	!SCE	0.00078	0.00079	0.00078

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00343	0.00337	0.00332
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00591	0.00584	0.00577
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00889	0.00882	0.00871
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01108	0.01101	0.01086
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00417	0.00411	0.00410
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00663	0.00657	0.00653
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00319	0.00313	0.00310
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00570	0.00564	0.00559
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00866	0.00859	0.00849
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01088	0.01081	0.01069
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00393	0.00388	0.00387
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00642	0.00637	0.00635
	(!CLK_N * D * SCE)	0.00259	0.00253	0.00251
	(!CLK_N * D * SCE)	0.00504	0.00498	0.00495
	(!CLK_N * !D * SCE)	0.00234	0.00229	0.00229
	(!CLK_N * !D * SCE)	0.00484	0.00478	0.00476
	!SCE	-0.00056	-0.00058	-0.00057
	!SCE	0.00079	0.00080	0.00079

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)	0.00324	0.00311	0.00303
	(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	-0.00046	-0.00052
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01194	0.01182	0.01166
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00904	0.00889	0.00871
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00690	0.00676	0.00660
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00431	0.00414	0.00397
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00759	0.00745	0.00730
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00498	0.00481	0.00465
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00822	0.00798	0.00782
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00388	0.00364	0.00348
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01064	0.01036	0.01013
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00661	0.00631	0.00612
	(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)	0.00327	0.00314	0.00308
	(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)	-0.00007	-0.00023	-0.00029
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00750	0.00727	0.00709
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00317	0.00292	0.00276
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00331	0.00317	0.00310
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00020	-0.00037	-0.00045
	(!CLK_N * D * !SCD)	0.00623	0.00603	0.00588
	(!CLK_N * D * !SCD)	0.00362	0.00341	0.00324
	(!CLK_N * !D * SCD)	0.00601	0.00577	0.00560
	(!CLK_N * !D * SCD)	0.00169	0.00142	0.00128

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)	0.00329	0.00316	0.00308
	(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	-0.00046	-0.00052
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01262	0.01251	0.01235
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00971	0.00957	0.00941
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00716	0.00703	0.00688
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00456	0.00439	0.00422
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00791	0.00779	0.00763
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00529	0.00512	0.00497
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00837	0.00814	0.00796
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00396	0.00372	0.00357
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01076	0.01047	0.01025
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00664	0.00635	0.00614
	(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)	0.00332	0.00318	0.00312
	(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)	-0.00009	-0.00024	-0.00030
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00758	0.00734	0.00717
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00319	0.00295	0.00278
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00337	0.00323	0.00316
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00021	-0.00037	-0.00044
	(!CLK_N * D * !SCD)	0.00647	0.00629	0.00613
	(!CLK_N * D * !SCD)	0.00383	0.00362	0.00345
	(!CLK_N * !D * SCD)	0.00601	0.00576	0.00560
	(!CLK_N * !D * SCD)	0.00162	0.00136	0.00122

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)	-0.00030	-0.00040	-0.00041
	(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)	0.00323	0.00315	0.00313
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00729	0.00725	0.00709
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01021	0.01018	0.01003
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00488	0.00484	0.00473
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00749	0.00745	0.00735
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00416	0.00411	0.00399
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00678	0.00674	0.00663
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00243	0.00220	0.00214
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00677	0.00655	0.00648
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00750	0.00727	0.00712
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01153	0.01131	0.01114
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00017	-0.00027	-0.00029
	(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)	0.00318	0.00309	0.00308
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00311	0.00288	0.00285
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00743	0.00719	0.00718
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00038	-0.00047	-0.00048
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00316	0.00307	0.00306
	(!CLK_N * D * !SCD)	0.00255	0.00247	0.00235
	(!CLK_N * D * !SCD)	0.00518	0.00509	0.00498
	(!CLK_N * !D * SCD)	0.00154	0.00132	0.00129
	(!CLK_N * !D * SCD)	0.00585	0.00565	0.00562

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)	-0.00036	-0.00045	-0.00046
	(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)	0.00323	0.00314	0.00313
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00732	0.00727	0.00711
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01025	0.01020	0.01005
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00493	0.00489	0.00478
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00757	0.00753	0.00743
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00414	0.00410	0.00398
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00680	0.00675	0.00664
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00262	0.00238	0.00233
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00703	0.00679	0.00673
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00811	0.00788	0.00771
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01222	0.01199	0.01183
	(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)	-0.00021	-0.00031	-0.00033
	(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)	0.00319	0.00310	0.00309
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00337	0.00312	0.00310
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00775	0.00752	0.00749
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00044	-0.00053	-0.00054
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00315	0.00307	0.00305
	(!CLK_N * D * !SCD)	0.00245	0.00237	0.00225
	(!CLK_N * D * !SCD)	0.00511	0.00502	0.00490
	(!CLK_N * !D * SCD)	0.00169	0.00147	0.00144
	(!CLK_N * !D * SCD)	0.00607	0.00586	0.00583

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)	0.00779	0.00758	0.00747
	(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)	0.00606	0.00586	0.00575
	(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)	0.00464	0.00454	0.00447
	(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)	0.00262	0.00252	0.00245
	(!SET_B * Q * !Q_N)	0.00463	0.00453	0.00447
	(!SET_B * Q * !Q_N)	0.00257	0.00247	0.00241

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)**	0.00758	0.00737	0.00725
	(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)	0.00590	0.00569	0.00557
	(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)	0.00441	0.00430	0.00424
	(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)	0.00246	0.00235	0.00228
	(!SET_B * Q * !Q_N)	0.00452	0.00441	0.00435
	(!SET_B * Q * !Q_N)	0.00253	0.00241	0.00236

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)**	0.00679	0.00663	0.00653
	(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)	0.00852	0.00835	0.00825
	(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)	0.00217	0.00206	0.00204
	(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)	0.00419	0.00409	0.00406
	(!SET_B * Q * !Q_N)	0.00168	0.00158	0.00151
	(!SET_B * Q * !Q_N)	0.00375	0.00365	0.00358

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)**	0.00723	0.00706	0.00695
	(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)	0.00892	0.00874	0.00863
	(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)	0.00229	0.00218	0.00216
	(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)	0.00425	0.00414	0.00411
	(!SET_B * Q * !Q_N)	0.00170	0.00159	0.00152
	(!SET_B * Q * !Q_N)	0.00370	0.00360	0.00351

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)**	0.00209	0.00210	0.00209
	(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)	-0.00260	-0.00261	-0.00260
	(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)	0.00717	0.00704	0.00696
	(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)	0.00212	0.00197	0.00189

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)**	0.00216	0.00217	0.00216
	(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)	-0.00251	-0.00252	-0.00251
	(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)	0.00760	0.00746	0.00739
	(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)	0.00258	0.00244	0.00236

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)**	-0.00207	-0.00210	-0.00209
	(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)	0.00260	0.00262	0.00261
	(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)	0.00088	0.00069	0.00060
	(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)	0.00593	0.00576	0.00567

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)**	-0.00214	-0.00216	-0.00216
	(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)	0.00251	0.00253	0.00251
	(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)	0.00076	0.00059	0.00050
	(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)	0.00580	0.00561	0.00553

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)	0.01327	0.01299	0.01305
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01085	0.01056	0.01062
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00840	0.00811	0.00793
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00567	0.00538	0.00521
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01333	0.01305	0.01310
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01091	0.01062	0.01067
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00846	0.00816	0.00799
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00573	0.00543	0.00527
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01441	0.01403	0.01379
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01140	0.01103	0.01079
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00816	0.00783	0.00770
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00545	0.00510	0.00498
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00914	0.00874	0.00854
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00642	0.00603	0.00582
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01020	0.00993	0.00996
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00749	0.00720	0.00724
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01026	0.00997	0.01002
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00754	0.00726	0.00729
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01327	0.01299	0.01305
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01085	0.01056	0.01062
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00840	0.00810	0.00793
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00567	0.00537	0.00521
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01445	0.01407	0.01377
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01143	0.01106	0.01076
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01441	0.01403	0.01379
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01140	0.01103	0.01078
	(!D * !SCE * SET_B * !Q * Q_N)	0.00822	0.00788	0.00776
	(!D * !SCE * SET_B * !Q * Q_N)	0.00551	0.00516	0.00503
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00920	0.00880	0.00859
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00648	0.00608	0.00588
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00816	0.00783	0.00770
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00545	0.00510	0.00498
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00914	0.00875	0.00852
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00642	0.00603	0.00581
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01020	0.00992	0.00996
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00749	0.00720	0.00724

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01342	0.01314	0.01320
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01102	0.01073	0.01079
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00834	0.00803	0.00784
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00564	0.00535	0.00517
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01348	0.01319	0.01325
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01108	0.01078	0.01084
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00839	0.00809	0.00790
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00569	0.00540	0.00522
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01472	0.01434	0.01408
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01177	0.01139	0.01113
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00813	0.00779	0.00766
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00546	0.00510	0.00497
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00906	0.00866	0.00843
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00638	0.00600	0.00576
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01028	0.01000	0.01003
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00761	0.00731	0.00735
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01033	0.01005	0.01009
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00766	0.00736	0.00740
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01342	0.01314	0.01320
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01102	0.01073	0.01078
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00834	0.00804	0.00784
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00564	0.00535	0.00517
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01475	0.01437	0.01412
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01179	0.01141	0.01116
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01472	0.01433	0.01408
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01176	0.01139	0.01113
	(!D * !SCE * SET_B * !Q * Q_N)	0.00818	0.00784	0.00771
	(!D * !SCE * SET_B * !Q * Q_N)	0.00551	0.00515	0.00503
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00911	0.00871	0.00848
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00643	0.00605	0.00581
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00813	0.00779	0.00766
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00546	0.00510	0.00497
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00906	0.00867	0.00842
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00638	0.00600	0.00576
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01028	0.01000	0.01004
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00761	0.00731	0.00735

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)**	0.00659	0.00630	0.00613
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00931	0.00902	0.00886
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00653	0.00624	0.00607
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00925	0.00896	0.00880
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00678	0.00650	0.00633
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00950	0.00921	0.00906
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00892	0.00860	0.00835
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01163	0.01131	0.01107
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00897	0.00868	0.00841
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01168	0.01140	0.01114
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00891	0.00863	0.00836
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01163	0.01135	0.01108
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00659	0.00630	0.00613
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00931	0.00902	0.00886
	(!D * !SCE * SET_B * !Q * Q_N)	0.00672	0.00644	0.00628
	(!D * !SCE * SET_B * !Q * Q_N)	0.00944	0.00916	0.00901
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00886	0.00855	0.00830
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01157	0.01125	0.01102
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00678	0.00650	0.00633
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00950	0.00921	0.00906
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00891	0.00860	0.00835
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01162	0.01131	0.01107
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00897	0.00869	0.00841
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01169	0.01140	0.01114

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00658	0.00629	0.00611
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00926	0.00897	0.00880
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00653	0.00624	0.00606
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00921	0.00892	0.00875
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00674	0.00646	0.00629
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00942	0.00913	0.00898
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00891	0.00859	0.00835
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01158	0.01126	0.01103
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00909	0.00880	0.00852
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01176	0.01148	0.01120
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00904	0.00875	0.00847
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01172	0.01143	0.01115
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00658	0.00629	0.00611
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00926	0.00897	0.00880
	(!D * !SCE * SET_B * !Q * Q_N)	0.00669	0.00641	0.00624
	(!D * !SCE * SET_B * !Q * Q_N)	0.00937	0.00908	0.00893
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00886	0.00854	0.00829
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01153	0.01121	0.01097
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00674	0.00646	0.00629
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00942	0.00913	0.00898
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00891	0.00859	0.00834
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01158	0.01126	0.01103
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00909	0.00880	0.00853
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01177	0.01148	0.01120

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT						OUTPUT	
D	SCD	SCE	RESET_B	SET_B	CLK	Q	Q_N
0	0	x	1	1	R	0	1
0	1	0	1	1	R	0	1
x	1	1	1	1	R	1	0
1	x	0	1	1	R	1	0
1	0	1	1	1	R	0	1
x	x	x	x	0	x	1	0
x	x	x	0	1	x	0	1
x	x	x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbp_1	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	SCD	SCE	RESET_B	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__sdfbbp_1	0.00182	0.00161	0.00375	0.00155	0.00597	0.00277	0.35444	0.34110

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	0.00117	0.00142

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)	1.14489	2.13844	9.66169
	SET_B->Q (FR)	0.51059	1.80667	12.29610

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.79318	1.27328	3.66288
	RESET_B->Q (FF)	0.60770	1.38989	6.45691
	SET_B->Q (RF)	0.33483	0.82760	3.44683

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)	0.70456	1.72650	9.24147
	RESET_B->Q_N (FR)	0.52013	1.85343	12.05680
	SET_B->Q_N (RR)	0.24388	1.29272	9.07856

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)	0.95432	1.57787	4.05552
	SET_B->Q_N (FF)	0.36029	1.20911	6.85534

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)	-0.14754	-0.25396	-1.09626
	setup	CLK (R)	0.33281	0.36984	1.22085

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)	-0.76845	-0.84478	-4.10834
	setup	CLK (R)	0.98621	1.04203	4.25224

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)	-0.14754	-0.25396	-1.09626
	setup	CLK (R)	0.33281	0.36984	1.22085

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)	-0.76845	-0.84478	-4.10834
	setup	CLK (R)	0.98621	1.04203	4.25224

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)	-0.16471	-0.26459	-1.30643
	setup	CLK (R)	0.35861	0.38179	1.41371

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)	-0.94276	-1.07062	-4.71065
	setup	CLK (R)	1.17600	1.28991	4.84571

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)	-0.16471	-0.26492	-1.30643
	hold	CLK (R)	-0.16700	-0.26459	-1.31173
	setup	CLK (R)	0.35861	0.38179	1.41009
	setup	CLK (R)	0.35650	0.37931	1.41371

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)	-0.94276	-1.07062	-4.72231
	hold	CLK (R)	-0.94542	-1.07224	-4.71065
	setup	CLK (R)	1.16802	1.27903	4.84571
	setup	CLK (R)	1.17600	1.28991	4.83744

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)	-0.15418	-0.27122	-0.68449
	setup	CLK (R)	1.13160	1.07853	1.32313

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)	-0.31626	-0.53175	-3.52357
	setup	CLK (R)	0.98666	1.08332	4.52365

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)	-0.90661	-0.87277	-0.68449
	hold	CLK (R)	-0.15418	-0.27122	-1.20593
	setup	CLK (R)	1.13160	1.07853	0.77644
	setup	CLK (R)	0.34631	0.38637	1.32313

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)	-0.31626	-0.53175	-3.52357
	hold	CLK (R)	-0.76604	-0.88450	-4.39252
	setup	CLK (R)	0.50553	0.64777	3.60121
	setup	CLK (R)	0.98666	1.08332	4.52365

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)	0.26314	0.27578	0.40646
	removal	CLK (R)	-0.07179	-0.09708	-0.16717

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)	0.26314	0.27233	0.40598
	recovery	CLK (R)	0.25959	0.27578	0.40627
	recovery	CLK (R)	0.26007	0.27563	0.40646
	removal	CLK (R)	-0.07179	-0.09708	-0.16717
	removal	CLK (R)	-0.07211	-0.09708	-0.16717
	removal	CLK (R)	-0.07211	-0.09708	-0.16717

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 ()	0.52245	1.07196	16.50020
	min_pulse_width	RESET_B ()	0.53422	1.07196	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)	0.02642	-0.00436	0.43456
	removal	CLK (R)	0.20724	0.24454	0.42573
	hold	RESET_B (R)	-0.12554	-0.24721	-1.24574
	setup	RESET_B (R)	0.29057	0.35775	1.51990

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)	0.02642	-0.00447	0.42640
	recovery	CLK (R)	0.02627	-0.00436	0.43456
	recovery	CLK (R)	0.02460	-0.00545	0.43378
	removal	CLK (R)	0.20646	0.24132	0.42495
	removal	CLK (R)	0.20646	0.24132	0.42495
	removal	CLK (R)	0.20724	0.24454	0.42573
	hold	RESET_B (R)	-0.12593	-0.24938	-1.24979
	hold	RESET_B (R)	-0.12554	-0.24721	-1.24574
	setup	RESET_B (R)	0.27817	0.34659	1.51990
	setup	RESET_B (R)	0.29057	0.35775	1.49966

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 ()	0.36046	1.10286	16.50020
	min_pulse_width	SET_B ()	0.37779	1.10672	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 ()	0.23902	1.04492	16.50020
	min_pulse_width	CLK ()	0.38415	1.04492	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 ()	0.56367	1.04492	16.50020
	min_pulse_width	CLK ()	0.90488	1.08355	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	0.01063	0.01069	0.01069
	CLK	0.00926	0.00931	0.00932
	SET_B	0.00912	0.00904	0.00927
	SET_B	0.01203	0.01194	0.01172

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01065	0.01059	0.01028
	CLK	0.00912	0.00906	0.00875
	RESET_B	0.01060	0.01064	0.01031
	RESET_B	0.01128	0.01132	0.01082
	SET_B	0.01138	0.01118	0.01074
	SET_B	0.00846	0.00827	0.00782

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01058	0.01052	0.01043
	CLK	0.00905	0.00899	0.00891
	RESET_B	0.01061	0.01065	0.01064
	RESET_B	0.01129	0.01133	0.01107
	SET_B	0.01138	0.01123	0.01100
	SET_B	0.00847	0.00827	0.00808

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01062	0.01067	0.01048
	CLK	0.00924	0.00930	0.00911
	SET_B	0.00909	0.00900	0.00871
	SET_B	0.01199	0.01190	0.01147

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00078	0.00079	0.00078
	(CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCE)	0.00297	0.00282	0.00275
	(CLK * !SCE)	0.00098	0.00083	0.00076
	(CLK * !SCD * SCE)	0.00034	0.00035	0.00034
	(CLK * !SCD * SCE)	-0.00091	-0.00094	-0.00094
	(!CLK * SCD * SCE)	0.00078	0.00079	0.00078
	(!CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00778	0.00762	0.00745
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00593	0.00578	0.00561
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00509	0.00499	0.00489
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00292	0.00282	0.00272
	(!CLK * !SCD * SCE)	0.00034	0.00035	0.00034
	(!CLK * !SCD * SCE)	-0.00091	-0.00093	-0.00093
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00447	0.00436	0.00425
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00230	0.00220	0.00209

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00076	-0.00077	-0.00078
	(CLK * SCD * SCE)	0.00047	0.00047	0.00046
	(CLK * !SCE)	0.00083	0.00070	0.00067
	(CLK * !SCE)	0.00282	0.00268	0.00266
	(CLK * !SCD * SCE)	-0.00034	-0.00034	-0.00033
	(CLK * !SCD * SCE)	0.00094	0.00094	0.00094
	(!CLK * SCD * SCE)	-0.00075	-0.00077	-0.00078
	(!CLK * SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00593	0.00575	0.00563
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00776	0.00759	0.00747
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00230	0.00214	0.00208
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00447	0.00432	0.00425
	(!CLK * !SCD * SCE)	-0.00034	-0.00033	-0.00033
	(!CLK * !SCD * SCE)	0.00094	0.00094	0.00093
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00286	0.00271	0.00268
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00502	0.00487	0.00484

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00376	0.00368	0.00359
	(CLK * D * SCE)	0.00129	0.00121	0.00113
	(CLK * !D * SCE)	0.00410	0.00403	0.00392
	(CLK * !D * SCE)	0.00160	0.00152	0.00142
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00588	0.00581	0.00571
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00323	0.00316	0.00308
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00855	0.00844	0.00829
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00623	0.00612	0.00597
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00525	0.00519	0.00508
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00262	0.00255	0.00245
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00622	0.00616	0.00604
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00354	0.00347	0.00337
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00890	0.00880	0.00862
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00654	0.00644	0.00627
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00559	0.00553	0.00541
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00292	0.00285	0.00274
	!SCE	0.00058	0.00058	0.00058
	!SCE	-0.00077	-0.00079	-0.00079

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00164	0.00158	0.00156
	(CLK * D * SCE)	0.00411	0.00405	0.00401
	(CLK * !D * SCE)	0.00140	0.00135	0.00135
	(CLK * !D * SCE)	0.00391	0.00385	0.00384
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00309	0.00302	0.00297
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00574	0.00568	0.00560
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00669	0.00662	0.00651
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00902	0.00895	0.00882
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00364	0.00358	0.00356
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00629	0.00623	0.00618
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00285	0.00280	0.00276
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00555	0.00549	0.00543
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00646	0.00640	0.00631
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00882	0.00876	0.00865
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00341	0.00335	0.00336
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00609	0.00603	0.00602
	!SCE	-0.00057	-0.00058	-0.00058
	!SCE	0.00079	0.00079	0.00079

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)**	0.00321	0.00307	0.00300
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00026	-0.00043	-0.00049
	(CLK * D * !SCD)	0.00539	0.00517	0.00502
	(CLK * D * !SCD)	0.00287	0.00263	0.00245
	(CLK * !D * SCD)	0.00583	0.00557	0.00541
	(CLK * !D * SCD)	0.00155	0.00128	0.00114
	(!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)	0.00334	0.00321	0.00313
	(!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)	-0.00012	-0.00029	-0.00036
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01049	0.01036	0.01020
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00782	0.00766	0.00749
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00689	0.00675	0.00659
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00455	0.00438	0.00420
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00746	0.00730	0.00716
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00511	0.00494	0.00477
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00809	0.00785	0.00768
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00363	0.00338	0.00323
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01077	0.01048	0.01024
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00664	0.00634	0.00611
	(!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)	0.00339	0.00324	0.00318
	(!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)	0.00010	-0.00006	-0.00011
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00746	0.00723	0.00705
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00301	0.00277	0.00261

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)**	-0.00024	-0.00033	-0.00034
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00324	0.00315	0.00314
	(CLK * D * !SCD)	0.00260	0.00250	0.00238
	(CLK * D * !SCD)	0.00516	0.00504	0.00494
	(CLK * !D * SCD)	0.00093	0.00071	0.00070
	(CLK * !D * SCD)	0.00519	0.00498	0.00497
	(!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)	-0.00037	-0.00047	-0.00048
	(!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)	0.00310	0.00300	0.00300
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00723	0.00718	0.00701
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00993	0.00987	0.00971
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00455	0.00449	0.00440
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00693	0.00686	0.00678
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00393	0.00387	0.00376
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00631	0.00624	0.00614
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00226	0.00202	0.00197
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00671	0.00648	0.00642
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00588	0.00566	0.00553
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01000	0.00977	0.00964
	(!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)	-0.00025	-0.00036	-0.00037
	(!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)	0.00304	0.00294	0.00294
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00282	0.00258	0.00257
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00725	0.00703	0.00701

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)	0.00386	0.00375	0.00369
	(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)	0.00220	0.00208	0.00203
	(!SET_B * Q * !Q_N)	0.00421	0.00409	0.00403
	(!SET_B * Q * !Q_N)	0.00252	0.00239	0.00234
	(!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)	0.00727	0.00703	0.00690
	(!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)	0.00593	0.00569	0.00556

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)	0.00203	0.00192	0.00190
	(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)	0.00369	0.00358	0.00357
	(!SET_B * Q * !Q_N)	0.00120	0.00109	0.00103
	(!SET_B * Q * !Q_N)	0.00291	0.00279	0.00273
	(!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)	0.00549	0.00531	0.00519
	(!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)	0.00683	0.00665	0.00653

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)	0.00220	0.00221	0.00219
	(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)	-0.00314	-0.00315	-0.00313
	(!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)	0.00571	0.00557	0.00549
	(!CLK * D * RESET_B * !SCD * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N)	0.00001	-0.00018	-0.00023

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)	-0.00217	-0.00220	-0.00219
	(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)	0.00314	0.00316	0.00314
	(!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)	0.00122	0.00104	0.00094
	(!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)	0.00693	0.00675	0.00666

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)**	0.00967	0.00937	0.00918
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00676	0.00645	0.00626
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00982	0.00952	0.00933
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00692	0.00660	0.00641
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00953	0.00921	0.00905
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00661	0.00629	0.00613
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01211	0.01184	0.01168
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00902	0.00874	0.00859
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01153	0.01116	0.01093
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00879	0.00843	0.00819
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01169	0.01132	0.01108
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00895	0.00858	0.00834
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00967	0.00937	0.00918
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00676	0.00645	0.00626
	(!D * !SCE * SET_B * !Q * Q_N)	0.00968	0.00936	0.00919
	(!D * !SCE * SET_B * !Q * Q_N)	0.00676	0.00645	0.00628
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01226	0.01199	0.01184
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00918	0.00890	0.00875
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00953	0.00921	0.00904
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00661	0.00629	0.00612
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01213	0.01184	0.01169
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00904	0.00875	0.00859
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01153	0.01117	0.01093
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00879	0.00843	0.00818

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)	0.01020	0.00990	0.00958
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01327	0.01296	0.01264
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00531	0.00503	0.00487
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00821	0.00794	0.00779
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01005	0.00976	0.00943
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01312	0.01281	0.01250
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00515	0.00488	0.00472
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00805	0.00778	0.00763
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01113	0.01084	0.01094
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01391	0.01362	0.01372
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00540	0.00513	0.00498
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00832	0.00804	0.00790
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00738	0.00711	0.00718
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01046	0.01020	0.01028
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00670	0.00641	0.00619
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00945	0.00914	0.00892
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00654	0.00625	0.00604
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00930	0.00898	0.00877
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01020	0.00990	0.00958
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01327	0.01295	0.01264
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00531	0.00503	0.00487
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00821	0.00794	0.00779
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01096	0.01067	0.01076
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01372	0.01344	0.01355
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01113	0.01084	0.01093
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01390	0.01362	0.01372
	(!D * !SCE * SET_B * !Q * Q_N)	0.00524	0.00498	0.00483
	(!D * !SCE * SET_B * !Q * Q_N)	0.00817	0.00788	0.00775
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00722	0.00696	0.00703
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01030	0.01005	0.01012
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00540	0.00513	0.00498
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00832	0.00804	0.00790
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00738	0.00712	0.00719
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01046	0.01021	0.01028
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00670	0.00641	0.00619
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00945	0.00914	0.00893

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT	
D	SCD	SCE	RESET_B	CLK	Q	Q_N
0	0	x	1	R	0	1
0	1	0	1	R	0	1
x	1	1	1	R	1	0
1	x	0	1	R	1	0
1	0	1	1	R	0	1
x	x	x	0	x	0	1
x	x	x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrbp_1	46.35360
sky130_fd_sc_hs__sdfrbp_2	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	SCD	SCE	RESET_B	CLK	Q	Q_N
sky130_fd_sc_hs__sdfrbp_1	0.00173	0.00176	0.00393	0.00531	0.00291	0.36195	0.36124
sky130_fd_sc_hs__sdfrbp_2	0.00175	0.00179	0.00405	0.00544	0.00285	0.72125	0.72561

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.00109	0.00138
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.00125	0.00158

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)	0.74126	1.72049	9.22045
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.90792	1.71530	9.53901

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.54974	1.03466	3.42941
	RESET_B->Q (FF)	0.83771	1.63743	7.55253
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.62721	1.09418	3.54592
	RESET_B->Q (FF)	0.92217	1.70451	7.68092

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)	0.46012	1.47512	8.94267
	RESET_B->Q_N (FR)	0.74864	2.07165	13.05380
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.45944	1.33690	9.01384
	RESET_B->Q_N (FR)	0.75534	1.94211	13.13240

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)	0.54971	1.18960	3.69759
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.64191	1.27750	3.82741

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)	-0.15018	-0.27935	-1.24508
	setup	CLK (R)	0.38596	0.43503	1.49296
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15430	-0.28901	-1.29302
	setup	CLK (R)	0.34014	0.41410	1.54445

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)	-0.18019	-0.38403	-3.90191
	setup	CLK (R)	1.02931	1.09285	4.43406
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.28020	-0.49902	-3.95793
	setup	CLK (R)	1.07164	1.14002	4.51044

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)	-0.15018	-0.27935	-1.24508
	hold	CLK (R)	-0.15044	-0.27945	-1.24862
	setup	CLK (R)	0.38559	0.43485	1.49251
	setup	CLK (R)	0.38596	0.43503	1.49296
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15430	-0.28901	-1.29302
	hold	CLK (R)	-0.15450	-0.29138	-1.29606
	setup	CLK (R)	0.33817	0.41242	1.54445
	setup	CLK (R)	0.34014	0.41410	1.54329

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)	-0.18019	-0.38615	-3.90259
	hold	CLK (R)	-0.18347	-0.38403	-3.90191
	setup	CLK (R)	1.02703	1.09285	4.43194
	setup	CLK (R)	1.02931	1.09272	4.43406
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.28030	-0.49902	-3.95793
	hold	CLK (R)	-0.28020	-0.49966	-3.95939
	setup	CLK (R)	1.07164	1.14002	4.51033
	setup	CLK (R)	1.07038	1.13775	4.51044

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)	-0.17651	-0.30033	-1.47464
	setup	CLK (R)	0.40784	0.44420	1.67412
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17877	-0.30725	-1.50171
	setup	CLK (R)	0.36267	0.42478	1.71230

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)	-0.24674	-0.47992	-4.55466
	setup	CLK (R)	1.20893	1.30812	5.00231
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.35171	-0.60661	-4.60408
	setup	CLK (R)	1.25137	1.35519	5.06354

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)	-0.17651	-0.30033	-1.47464
	hold	CLK (R)	-0.17689	-0.30134	-1.47486
	setup	CLK (R)	0.40784	0.44420	1.67412
	setup	CLK (R)	0.40757	0.44262	1.67337
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.17877	-0.30725	-1.50171
	hold	CLK (R)	-0.18470	-0.30757	-1.50494
	setup	CLK (R)	0.36267	0.42246	1.70663
	setup	CLK (R)	0.36114	0.42478	1.71230

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)	-0.26731	-0.50664	-4.61265
	hold	CLK (R)	-0.24674	-0.47992	-4.55466
	setup	CLK (R)	1.19896	1.29681	5.00231
	setup	CLK (R)	1.20893	1.30812	4.99951
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.37970	-0.63552	-4.65159
	hold	CLK (R)	-0.35171	-0.60661	-4.60408
	setup	CLK (R)	1.23486	1.33487	5.05686
	setup	CLK (R)	1.25137	1.35519	5.06354

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)	-0.14844	-0.28047	-0.77108
	setup	CLK (R)	1.16892	1.13414	1.53476
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15510	-0.28946	-0.75707
	setup	CLK (R)	1.21125	1.17177	1.57930

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)	-0.20994	-0.44316	-3.77886
	setup	CLK (R)	1.05724	1.14886	4.76098
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.29973	-0.54627	-3.73892
	setup	CLK (R)	1.09243	1.19148	4.82285

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)	-0.23606	-0.35218	-0.77108
	hold	CLK (R)	-0.14844	-0.28047	-1.29132
	setup	CLK (R)	1.16892	1.13414	1.05397
	setup	CLK (R)	0.37805	0.43104	1.53476
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.35089	-0.46930	-0.75707
	hold	CLK (R)	-0.15510	-0.28946	-1.32735
	setup	CLK (R)	1.21125	1.17177	1.06032
	setup	CLK (R)	0.32993	0.40735	1.57930

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)	-0.35384	-0.59533	-3.77886
	hold	CLK (R)	-0.20994	-0.44316	-4.34475
	setup	CLK (R)	0.58998	0.74431	3.91297
	setup	CLK (R)	1.05724	1.14886	4.76098
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.35019	-0.59492	-3.73892
	hold	CLK (R)	-0.29973	-0.54627	-4.39172
	setup	CLK (R)	0.53333	0.70985	3.87641
	setup	CLK (R)	1.09243	1.19148	4.82285

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)	0.43755	0.44961	1.64980
	removal	CLK (R)	-0.29823	-0.36168	-1.50425
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.38761	0.42889	1.68085
	removal	CLK (R)	-0.31111	-0.37273	-1.53721

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)	0.43755	0.44961	1.64980
	recovery	CLK (R)	0.43400	0.44393	1.59419
	recovery	CLK (R)	0.42786	0.43726	1.54844
	recovery	CLK (R)	0.43230	0.44793	1.64973
	removal	CLK (R)	-0.30458	-0.37987	-1.60617
	removal	CLK (R)	-0.30351	-0.37432	-1.54769
	removal	CLK (R)	-0.29823	-0.36168	-1.50425
	removal	CLK (R)	-0.30550	-0.37943	-1.60383
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.38694	0.42764	1.67753
	recovery	CLK (R)	0.38555	0.42531	1.62309
	recovery	CLK (R)	0.38032	0.41242	1.58108
	recovery	CLK (R)	0.38761	0.42889	1.68085
	removal	CLK (R)	-0.31451	-0.38900	-1.63514
	removal	CLK (R)	-0.31628	-0.38542	-1.58157
	removal	CLK (R)	-0.31111	-0.37273	-1.53721
	removal	CLK (R)	-0.31464	-0.39212	-1.64023

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 ()	0.49620	1.24190	16.50020
	min_pulse_width	RESET_B ()	0.37601	1.11444	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.50133	1.24963	16.50020
	min_pulse_width	RESET_B ()	0.40340	1.12989	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 ()	0.47582	1.04492	16.50020
	min_pulse_width	CLK ()	0.20082	1.04492	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.64006	1.04492	16.50020
	min_pulse_width	CLK ()	0.21992	1.04492	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 ()	0.55221	1.04492	16.50020
	min_pulse_width	CLK ()	0.91383	1.10672	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.49874	1.04492	16.50020
	min_pulse_width	CLK ()	0.91901	1.11058	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	0.00973	0.00967	0.00959
	CLK	0.00824	0.00819	0.00811
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01142	0.01155	0.01161
	CLK	0.00989	0.01004	0.01009

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00993	0.00988	0.00978
	CLK	0.00846	0.00843	0.00831
	RESET_B	0.00824	0.00815	0.00779
	RESET_B	0.01154	0.01144	0.01105
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01156	0.01165	0.01157
	CLK	0.01019	0.01035	0.01021
	RESET_B	0.00995	0.01005	0.01021
	RESET_B	0.01331	0.01342	0.01301

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00994	0.00989	0.00998
	CLK	0.00847	0.00843	0.00852
	RESET_B	0.00826	0.00817	0.00838
	RESET_B	0.01157	0.01147	0.01126
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01156	0.01171	0.01187
	CLK	0.01019	0.01035	0.01052
	RESET_B	0.00996	0.01007	0.01074
	RESET_B	0.01334	0.01345	0.01333

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.00973	0.00966	0.00938
	CLK	0.00824	0.00818	0.00789
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01142	0.01154	0.01129
	CLK	0.00989	0.01003	0.00977

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00076	0.00077	0.00076
	(CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00347	0.00334	0.00328
	(CLK * RESET_B * SCD * !SCE)	0.00125	0.00113	0.00106
	(CLK * RESET_B * !SCD * !SCE)	0.00347	0.00334	0.00328
	(CLK * RESET_B * !SCD * !SCE)	0.00126	0.00113	0.00107
	(CLK * !SCD * SCE)	0.00043	0.00044	0.00042
	(CLK * !SCD * SCE)	-0.00080	-0.00082	-0.00082
	(CLK * !RESET_B * SCD * SCE)	0.00041	0.00041	0.00041
	(CLK * !RESET_B * SCD * SCE)	-0.00081	-0.00082	-0.00082
	(CLK * !RESET_B * SCD * !SCE)	0.00030	0.00030	0.00026
	(CLK * !RESET_B * SCD * !SCE)	-0.00093	-0.00093	-0.00098
	(CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00027
	(CLK * !RESET_B * !SCD * !SCE)	-0.00095	-0.00096	-0.00099
	(!CLK * RESET_B * SCD * SCE)	0.00076	0.00077	0.00076
	(!CLK * RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00044
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00787	0.00776	0.00762
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00552	0.00543	0.00529
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00787	0.00777	0.00763
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00553	0.00543	0.00529
	(!CLK * !SCD * SCE)	0.00043	0.00044	0.00042
	(!CLK * !SCD * SCE)	-0.00080	-0.00082	-0.00082
	(!CLK * !RESET_B * SCD * SCE)	0.00041	0.00041	0.00041
	(!CLK * !RESET_B * SCD * SCE)	-0.00081	-0.00082	-0.00082
	(!CLK * !RESET_B * SCD * !SCE)	0.00030	0.00030	0.00026
	(!CLK * !RESET_B * SCD * !SCE)	-0.00093	-0.00093	-0.00098
	(!CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00095	-0.00096	-0.00099

	(CLK * RESET_B * SCD * SCE)	0.00078	0.00079	0.00078
	(CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00370	0.00357	0.00350
	(CLK * RESET_B * SCD * !SCE)	0.00143	0.00131	0.00124
	(CLK * RESET_B * !SCD * !SCE)	0.00370	0.00357	0.00350
	(CLK * RESET_B * !SCD * !SCE)	0.00143	0.00131	0.00124
	(CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(CLK * !SCD * SCE)	-0.00081	-0.00083	-0.00083
	(CLK * !RESET_B * SCD * SCE)	0.00042	0.00042	0.00042
	(CLK * !RESET_B * SCD * SCE)	-0.00082	-0.00083	-0.00083
	(CLK * !RESET_B * SCD * !SCE)	0.00029	0.00029	0.00026
	(CLK * !RESET_B * SCD * !SCE)	-0.00095	-0.00096	-0.00101
	(CLK * !RESET_B * !SCD * !SCE)	0.00029	0.00029	0.00026
	(CLK * !RESET_B * !SCD * !SCE)	-0.00098	-0.00099	-0.00102
	(!CLK * RESET_B * SCD * SCE)	0.00078	0.00079	0.00078
	(!CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00812	0.00801	0.00787
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00573	0.00563	0.00549
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00812	0.00801	0.00787
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00573	0.00563	0.00549
	(!CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00081	-0.00083	-0.00083
	(!CLK * !RESET_B * SCD * SCE)	0.00042	0.00042	0.00042
	(!CLK * !RESET_B * SCD * SCE)	-0.00082	-0.00083	-0.00083
	(!CLK * !RESET_B * SCD * !SCE)	0.00029	0.00029	0.00025
	(!CLK * !RESET_B * SCD * !SCE)	-0.00095	-0.00096	-0.00101
	(!CLK * !RESET_B * !SCD * !SCE)	0.00029	0.00029	0.00026
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00098	-0.00099	-0.00102

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	-0.00074	-0.00075	-0.00076
	(CLK * RESET_B * SCD * SCE)	0.00046	0.00046	0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00051	0.00038	0.00035
	(CLK * RESET_B * SCD * !SCE)	0.00273	0.00259	0.00257
	(CLK * RESET_B * !SCD * !SCE)	0.00051	0.00038	0.00035
	(CLK * RESET_B * !SCD * !SCE)	0.00273	0.00259	0.00257
	(CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !SCD * SCE)	0.00083	0.00082	0.00082
	(CLK * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !RESET_B * SCD * SCE)	0.00083	0.00082	0.00082
	(CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(CLK * !RESET_B * SCD * !SCE)	0.00099	0.00099	0.00099
	(CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(CLK * !RESET_B * !SCD * !SCE)	0.00099	0.00099	0.00099
	(!CLK * RESET_B * SCD * SCE)	-0.00074	-0.00075	-0.00076
	(!CLK * RESET_B * SCD * SCE)	0.00045	0.00046	0.00044
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00453	0.00438	0.00429
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00688	0.00673	0.00663
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00453	0.00438	0.00429
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00687	0.00673	0.00663
	(!CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !SCD * SCE)	0.00083	0.00082	0.00082
	(!CLK * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !RESET_B * SCD * SCE)	0.00082	0.00082	0.00082
	(!CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * SCD * !SCE)	0.00099	0.00099	0.00099
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * !SCD * !SCE)	0.00099	0.00099	0.00099

	(CLK * RESET_B * SCD * SCE)	-0.00076	-0.00077	-0.00078
	(CLK * RESET_B * SCD * SCE)	0.00046	0.00046	0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00059	0.00045	0.00043
	(CLK * RESET_B * SCD * !SCE)	0.00285	0.00271	0.00269
	(CLK * RESET_B * !SCD * !SCE)	0.00059	0.00045	0.00043
	(CLK * RESET_B * !SCD * !SCE)	0.00285	0.00272	0.00269
	(CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00042
	(CLK * !SCD * SCE)	0.00083	0.00083	0.00083
	(CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !RESET_B * SCD * SCE)	0.00084	0.00083	0.00083
	(CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00024
	(CLK * !RESET_B * SCD * !SCE)	0.00102	0.00102	0.00102
	(CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00025	-0.00024
	(CLK * !RESET_B * !SCD * !SCE)	0.00102	0.00102	0.00102
	(!CLK * RESET_B * SCD * SCE)	-0.00076	-0.00077	-0.00078
	(!CLK * RESET_B * SCD * SCE)	0.00046	0.00046	0.00044
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00461	0.00446	0.00436
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00700	0.00685	0.00675
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00461	0.00446	0.00436
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00701	0.00685	0.00675
	(!CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00042
	(!CLK * !SCD * SCE)	0.00084	0.00083	0.00083
	(!CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !RESET_B * SCD * SCE)	0.00083	0.00083	0.00083
	(!CLK * !RESET_B * SCD * !SCE)	-0.00025	-0.00025	-0.00024
	(!CLK * !RESET_B * SCD * !SCE)	0.00102	0.00102	0.00102
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00025	-0.00025	-0.00024
	(!CLK * !RESET_B * !SCD * !SCE)	0.00102	0.00102	0.00102

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00426	0.00417	0.00410
	(CLK * D * RESET_B * SCE)	0.00154	0.00145	0.00138
	(CLK * D * RESET_B * !SCE)	0.00063	0.00063	0.00063
	(CLK * D * RESET_B * !SCE)	-0.00078	-0.00080	-0.00079
	(CLK * D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(CLK * D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086
	(CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(CLK * D * !RESET_B * !SCE)	-0.00094	-0.00095	-0.00095
	(CLK * !D * RESET_B * SCE)	0.00460	0.00453	0.00442
	(CLK * !D * RESET_B * SCE)	0.00185	0.00177	0.00167
	(CLK * !D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(CLK * !D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086
	(!D * RESET_B * !SCE)	0.00049	0.00050	0.00049
	(!D * RESET_B * !SCE)	-0.00092	-0.00093	-0.00093
	(!D * !RESET_B * !SCE)	0.00031	0.00031	0.00031
	(!D * !RESET_B * !SCE)	-0.00097	-0.00097	-0.00098
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00865	0.00857	0.00845
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00581	0.00574	0.00561
	(!CLK * D * RESET_B * !SCE)	0.00063	0.00063	0.00063
	(!CLK * D * RESET_B * !SCE)	-0.00078	-0.00080	-0.00079
	(!CLK * D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(!CLK * D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086
	(!CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!CLK * D * !RESET_B * !SCE)	-0.00094	-0.00095	-0.00095
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00900	0.00893	0.00877
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00612	0.00605	0.00590
	(!CLK * !D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(!CLK * !D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086

	(CLK * D * RESET_B * SCE)	0.00443	0.00435	0.00427
	(CLK * D * RESET_B * SCE)	0.00168	0.00158	0.00151
	(CLK * D * RESET_B * !SCE)	0.00065	0.00065	0.00065
	(CLK * D * RESET_B * !SCE)	-0.00079	-0.00079	-0.00079
	(CLK * D * !RESET_B * SCE)	0.00039	0.00040	0.00038
	(CLK * D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086
	(CLK * D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(CLK * D * !RESET_B * !SCE)	-0.00095	-0.00096	-0.00095
	(CLK * !D * RESET_B * SCE)	0.00478	0.00470	0.00460
	(CLK * !D * RESET_B * SCE)	0.00198	0.00190	0.00181
	(CLK * !D * !RESET_B * SCE)	0.00039	0.00040	0.00039
	(CLK * !D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00087
	(!D * RESET_B * !SCE)	0.00051	0.00051	0.00050
	(!D * RESET_B * !SCE)	-0.00093	-0.00094	-0.00094
	(!D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!D * !RESET_B * !SCE)	-0.00098	-0.00099	-0.00099
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00885	0.00877	0.00865
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00597	0.00589	0.00576
	(!CLK * D * RESET_B * !SCE)	0.00065	0.00065	0.00065
	(!CLK * D * RESET_B * !SCE)	-0.00079	-0.00079	-0.00079
	(!CLK * D * !RESET_B * SCE)	0.00039	0.00040	0.00038
	(!CLK * D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086
	(!CLK * D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(!CLK * D * !RESET_B * !SCE)	-0.00095	-0.00096	-0.00095
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00920	0.00913	0.00898
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00627	0.00620	0.00606
	(!CLK * !D * !RESET_B * SCE)	0.00039	0.00040	0.00039
	(!CLK * !D * !RESET_B * SCE)	-0.00087	-0.00087	-0.00086

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00126	0.00113	0.00109
	(CLK * D * RESET_B * SCE)	0.00398	0.00385	0.00380
	(CLK * D * RESET_B * !SCE)	-0.00061	-0.00063	-0.00063
	(CLK * D * RESET_B * !SCE)	0.00079	0.00080	0.00079
	(CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * D * !RESET_B * SCE)	0.00088	0.00088	0.00087
	(CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * !SCE)	0.00095	0.00095	0.00095
	(CLK * !D * RESET_B * SCE)	0.00098	0.00086	0.00083
	(CLK * !D * RESET_B * SCE)	0.00373	0.00361	0.00358
	(CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(CLK * !D * !RESET_B * SCE)	0.00088	0.00088	0.00087
	(!D * RESET_B * !SCE)	-0.00048	-0.00050	-0.00049
	(!D * RESET_B * !SCE)	0.00093	0.00094	0.00093
	(!D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(!D * !RESET_B * !SCE)	0.00099	0.00100	0.00099
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00525	0.00512	0.00504
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00810	0.00798	0.00787
	(!CLK * D * RESET_B * !SCE)	-0.00061	-0.00063	-0.00063
	(!CLK * D * RESET_B * !SCE)	0.00079	0.00080	0.00079
	(!CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * D * !RESET_B * SCE)	0.00088	0.00088	0.00087
	(!CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * !SCE)	0.00095	0.00095	0.00095
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00498	0.00485	0.00479
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00786	0.00774	0.00766
	(!CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * !D * !RESET_B * SCE)	0.00088	0.00088	0.00087

	(CLK * D * RESET_B * SCE)	0.00132	0.00119	0.00115
	(CLK * D * RESET_B * SCE)	0.00408	0.00396	0.00390
	(CLK * D * RESET_B * !SCE)	-0.00063	-0.00065	-0.00065
	(CLK * D * RESET_B * !SCE)	0.00079	0.00080	0.00079
	(CLK * D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * D * !RESET_B * SCE)	0.00088	0.00088	0.00087
	(CLK * D * !RESET_B * !SCE)	-0.00029	-0.00028	-0.00028
	(CLK * D * !RESET_B * !SCE)	0.00096	0.00096	0.00096
	(CLK * !D * RESET_B * SCE)	0.00107	0.00095	0.00092
	(CLK * !D * RESET_B * SCE)	0.00387	0.00375	0.00371
	(CLK * !D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00037
	(CLK * !D * !RESET_B * SCE)	0.00088	0.00088	0.00087
	(!D * RESET_B * !SCE)	-0.00049	-0.00051	-0.00050
	(!D * RESET_B * !SCE)	0.00094	0.00094	0.00094
	(!D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(!D * !RESET_B * !SCE)	0.00100	0.00100	0.00100
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00532	0.00518	0.00510
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00821	0.00808	0.00798
	(!CLK * D * RESET_B * !SCE)	-0.00063	-0.00065	-0.00065
	(!CLK * D * RESET_B * !SCE)	0.00079	0.00079	0.00079
	(!CLK * D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * D * !RESET_B * SCE)	0.00088	0.00088	0.00087
	(!CLK * D * !RESET_B * !SCE)	-0.00029	-0.00028	-0.00028
	(!CLK * D * !RESET_B * !SCE)	0.00096	0.00096	0.00096
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00508	0.00495	0.00489
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00800	0.00788	0.00780
	(!CLK * !D * !RESET_B * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK * !D * !RESET_B * SCE)	0.00088	0.00088	0.00087

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)**	0.00393	0.00374	0.00365
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00013	-0.00011	-0.00019
	(CLK * D * RESET_B * !SCD)	0.00566	0.00543	0.00524
	(CLK * D * RESET_B * !SCD)	0.00306	0.00280	0.00259
	(CLK * !D * RESET_B * SCD)	0.00722	0.00693	0.00675
	(CLK * !D * RESET_B * SCD)	0.00236	0.00204	0.00188
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00393	0.00374	0.00365
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00013	-0.00011	-0.00019
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00957	0.00942	0.00925
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00710	0.00691	0.00673
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00394	0.00374	0.00366
	(!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	0.00006	-0.00002
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01161	0.01133	0.01109
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00663	0.00633	0.00610

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00364	0.00345	0.00335
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00030	-0.00054	-0.00062
	(CLK * D * RESET_B * !SCD)	0.00548	0.00524	0.00504
	(CLK * D * RESET_B * !SCD)	0.00277	0.00250	0.00229
	(CLK * !D * RESET_B * SCD)	0.00711	0.00682	0.00664
	(CLK * !D * RESET_B * SCD)	0.00208	0.00176	0.00160
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00364	0.00345	0.00335
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00030	-0.00054	-0.00062
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00940	0.00923	0.00904
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00682	0.00662	0.00642
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00368	0.00347	0.00339
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00012	-0.00035	-0.00043
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01153	0.01123	0.01100
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00638	0.00607	0.00585

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)	-0.00015	-0.00029	-0.00033
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00368	0.00354	0.00350
	(CLK * D * RESET_B * !SCD)	0.00325	0.00305	0.00293
	(CLK * D * RESET_B * !SCD)	0.00588	0.00568	0.00556
	(CLK * !D * RESET_B * SCD)	0.00084	0.00058	0.00052
	(CLK * !D * RESET_B * SCD)	0.00571	0.00545	0.00540
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00015	-0.00030	-0.00033
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00368	0.00352	0.00350
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00762	0.00746	0.00734
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01013	0.00996	0.00985
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00014	-0.00031	-0.00033
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00353	0.00337	0.00333
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00486	0.00459	0.00448
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00987	0.00959	0.00947

sky130_fd_sc_hs__sdfrbp_2	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00012	-0.00026	-0.00030
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00385	0.00369	0.00366
	(CLK * D * RESET_B * !SCD)	0.00351	0.00331	0.00318
	(CLK * D * RESET_B * !SCD)	0.00625	0.00605	0.00594
	(CLK * !D * RESET_B * SCD)	0.00092	0.00065	0.00059
	(CLK * !D * RESET_B * SCD)	0.00595	0.00569	0.00563
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00012	-0.00026	-0.00030
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00385	0.00371	0.00366
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00790	0.00774	0.00761
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01052	0.01035	0.01023
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00014	-0.00030	-0.00033
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00367	0.00351	0.00347
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00494	0.00466	0.00454
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01011	0.00983	0.00971

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)**	0.00615	0.00604	0.00598
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00021	-0.00034	-0.00040
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00601	0.00588	0.00584
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00017	-0.00031	-0.00035
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00211	0.00213	0.00211
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00272	-0.00274	-0.00272
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00578	0.00566	0.00561
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00016	-0.00031	-0.00035
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00650	0.00639	0.00631
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00011	-0.00002	-0.00010
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00207	0.00211	0.00209
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00272	-0.00275	-0.00274
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00210	0.00213	0.00211
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00272	-0.00274	-0.00272
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00208	0.00211	0.00210
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00272	-0.00276	-0.00274
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01095	0.01070	0.01050
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00449	0.00423	0.00403
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01080	0.01053	0.01036
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00454	0.00426	0.00407
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00211	0.00213	0.00212
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00272	-0.00273	-0.00272
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01058	0.01031	0.01013
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00453	0.00426	0.00407
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01130	0.01106	0.01084
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00480	0.00455	0.00432
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00209	0.00210	0.00209
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00273	-0.00274	-0.00273
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00211	0.00212	0.00212
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00272	-0.00273	-0.00272
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00210	0.00211	0.00210
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00274	-0.00274	-0.00274

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00624	0.00613	0.00606
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00015	-0.00029	-0.00034
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00615	0.00602	0.00598
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00004	-0.00018	-0.00023
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00202	0.00205	0.00203
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00279	-0.00281	-0.00279
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00592	0.00580	0.00575
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00004	-0.00018	-0.00023
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00657	0.00648	0.00638
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00017	0.00004	-0.00003
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00200	0.00203	0.00201
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00280	-0.00282	-0.00280
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00202	0.00205	0.00203
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00279	-0.00281	-0.00279
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00201	0.00204	0.00201
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00281	-0.00283	-0.00281
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01103	0.01078	0.01060
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00455	0.00430	0.00409
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01095	0.01069	0.01051
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00465	0.00439	0.00420
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00202	0.00204	0.00203
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00279	-0.00281	-0.00279
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01072	0.01046	0.01027
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00465	0.00439	0.00420
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01138	0.01114	0.01092
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00486	0.00462	0.00439
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00200	0.00202	0.00200
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00281	-0.00282	-0.00281
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00202	0.00204	0.00203
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00279	-0.00280	-0.00279
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00201	0.00202	0.00201
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00281	-0.00282	-0.00281

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)**	0.00023	0.00007	-0.00001
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00661	0.00645	0.00636
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00024	-0.00041	-0.00050
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00595	0.00579	0.00569
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00209	-0.00213	-0.00211
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00273	0.00275	0.00273
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00042	-0.00058	-0.00065
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00553	0.00538	0.00529
	(CLK * !D * SCD * SCE * !Q * Q_N)	-0.00005	-0.00021	-0.00027
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00636	0.00620	0.00614
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00206	-0.00211	-0.00209
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00275	0.00276	0.00274
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00209	-0.00213	-0.00211
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00273	0.00275	0.00273
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00207	-0.00211	-0.00210
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00275	0.00277	0.00274
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00462	0.00426	0.00394
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01110	0.01074	0.01042
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00413	0.00378	0.00346
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01046	0.01007	0.00974
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00210	-0.00213	-0.00212
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00273	0.00276	0.00273
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00395	0.00362	0.00330
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01005	0.00966	0.00934
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00432	0.00399	0.00368
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01088	0.01049	0.01020
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00206	-0.00210	-0.00209
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00275	0.00277	0.00273
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00210	-0.00212	-0.00212
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00273	0.00276	0.00273
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00207	-0.00211	-0.00210
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00275	0.00277	0.00274

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00037	0.00020	0.00012
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00676	0.00661	0.00651
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00014	-0.00031	-0.00039
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00607	0.00591	0.00581
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00201	-0.00205	-0.00203
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00280	0.00282	0.00280
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00031	-0.00048	-0.00055
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00566	0.00550	0.00543
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00013	-0.00004	-0.00009
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00656	0.00639	0.00633
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00197	-0.00203	-0.00201
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00282	0.00283	0.00281
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00201	-0.00205	-0.00203
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00280	0.00282	0.00280
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00199	-0.00203	-0.00201
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00283	0.00283	0.00281
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00475	0.00441	0.00409
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01130	0.01092	0.01059
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00425	0.00391	0.00358
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01060	0.01022	0.00989
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00201	-0.00204	-0.00203
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00280	0.00283	0.00280
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00408	0.00374	0.00342
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01019	0.00981	0.00951
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00452	0.00417	0.00388
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01110	0.01071	0.01041
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00197	-0.00202	-0.00200
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00282	0.00284	0.00281
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00201	-0.00204	-0.00203
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00280	0.00283	0.00280
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00198	-0.00202	-0.00201
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00283	0.00285	0.00281

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)**	0.00937	0.00904	0.00891
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00642	0.00607	0.00594
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00937	0.00904	0.00891
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00642	0.00607	0.00594
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00937	0.00904	0.00891
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00642	0.00607	0.00594
	(D * !SCD * SCE * !Q * Q_N)	0.00968	0.00934	0.00921
	(D * !SCD * SCE * !Q * Q_N)	0.00671	0.00637	0.00625
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00968	0.00934	0.00921
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00671	0.00638	0.00625
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00968	0.00934	0.00921
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00671	0.00638	0.00625
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00968	0.00934	0.00921
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00671	0.00638	0.00625
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00937	0.00904	0.00891
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00642	0.00607	0.00594
	(!D * !SCE * !Q * Q_N)	0.00968	0.00934	0.00921
	(!D * !SCE * !Q * Q_N)	0.00671	0.00637	0.00625
	(!D * !SCD * SCE * !Q * Q_N)	0.00968	0.00934	0.00921
	(!D * !SCD * SCE * !Q * Q_N)	0.00671	0.00637	0.00625
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00968	0.00934	0.00921
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00671	0.00638	0.00625

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00941	0.00907	0.00892
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00653	0.00617	0.00603
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00941	0.00907	0.00892
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00653	0.00617	0.00603
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00941	0.00907	0.00892
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00653	0.00617	0.00603
	(D * !SCD * SCE * !Q * Q_N)	0.00966	0.00931	0.00917
	(D * !SCD * SCE * !Q * Q_N)	0.00678	0.00642	0.00627
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00966	0.00931	0.00917
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00678	0.00642	0.00627
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00966	0.00932	0.00917
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00678	0.00642	0.00627
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00966	0.00932	0.00917
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00678	0.00642	0.00627
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00941	0.00907	0.00892
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00653	0.00617	0.00603
	(!D * !SCE * !Q * Q_N)	0.00966	0.00931	0.00917
	(!D * !SCE * !Q * Q_N)	0.00678	0.00642	0.00627
	(!D * !SCD * SCE * !Q * Q_N)	0.00966	0.00931	0.00917
	(!D * !SCD * SCE * !Q * Q_N)	0.00678	0.00642	0.00627
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00966	0.00931	0.00917
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00678	0.00642	0.00627

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)	0.00513	0.00486	0.00471
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00809	0.00781	0.00768
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00931	0.00901	0.00874
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01214	0.01184	0.01157
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00513	0.00486	0.00472
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00809	0.00781	0.00768
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00928	0.00898	0.00870
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01211	0.01181	0.01154
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00972	0.00946	0.00960
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01281	0.01255	0.01270
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00513	0.00486	0.00471
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00809	0.00781	0.00768
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00927	0.00898	0.00871
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01211	0.01181	0.01154
	(D * !SCD * SCE * !Q * Q_N)	0.00479	0.00452	0.00437
	(D * !SCD * SCE * !Q * Q_N)	0.00774	0.00747	0.00734
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00479	0.00452	0.00436
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00774	0.00747	0.00732
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00479	0.00452	0.00436
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00774	0.00747	0.00732
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00479	0.00452	0.00436
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00774	0.00747	0.00732
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00513	0.00486	0.00472
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00809	0.00781	0.00768
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00933	0.00903	0.00876
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01215	0.01185	0.01159
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00970	0.00944	0.00958
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01278	0.01252	0.01266
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00971	0.00945	0.00959
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01280	0.01253	0.01269
	(!D * !SCE * !Q * Q_N)	0.00479	0.00452	0.00437
	(!D * !SCE * !Q * Q_N)	0.00774	0.00747	0.00734
	(!D * !SCD * SCE * !Q * Q_N)	0.00479	0.00452	0.00437
	(!D * !SCD * SCE * !Q * Q_N)	0.00774	0.00747	0.00734
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00479	0.00452	0.00436
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00775	0.00747	0.00732

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00509	0.00482	0.00470
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00799	0.00772	0.00759
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.00933	0.00904	0.00877
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01210	0.01181	0.01154
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00509	0.00482	0.00470
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00799	0.00772	0.00759
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.00930	0.00901	0.00873
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01206	0.01178	0.01151
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00966	0.00942	0.00957
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01270	0.01245	0.01262
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00509	0.00482	0.00470
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00799	0.00772	0.00759
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00929	0.00901	0.00873
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01206	0.01178	0.01151
	(D * !SCD * SCE * !Q * Q_N)	0.00481	0.00455	0.00440
	(D * !SCD * SCE * !Q * Q_N)	0.00770	0.00744	0.00729
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00481	0.00455	0.00440
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00770	0.00744	0.00730
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00481	0.00455	0.00440
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00770	0.00744	0.00730
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00481	0.00455	0.00440
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00770	0.00744	0.00730
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00509	0.00482	0.00470
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00799	0.00772	0.00759
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.00935	0.00907	0.00879
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01211	0.01182	0.01156
	(!D * RESET_B * !SCE * Q * !Q_N)	0.00965	0.00940	0.00955
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01267	0.01242	0.01258
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.00966	0.00941	0.00956
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01269	0.01244	0.01260
	(!D * !SCE * !Q * Q_N)	0.00481	0.00455	0.00440
	(!D * !SCE * !Q * Q_N)	0.00770	0.00744	0.00729
	(!D * !SCD * SCE * !Q * Q_N)	0.00481	0.00455	0.00440
	(!D * !SCD * SCE * !Q * Q_N)	0.00770	0.00744	0.00729
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00481	0.00455	0.00440
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00770	0.00744	0.00730

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK_N	Q
0	0	x	1	F	0
0	1	0	1	F	0
x	1	1	1	F	1
1	x	0	1	F	1
1	0	1	1	F	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtn_1	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK_N	Q
sky130_fd_sc_hs__sdfrtn_1	0.00184	0.00175	0.00387	0.00531	0.00272	0.36080

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.00103	0.00129

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)	0.83491	2.14651	12.51720

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)	0.58345	1.37538	6.76250
	RESET_B->Q (FF)	0.81193	1.61073	7.50434

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)	0.09574	0.20086	2.70420
	setup	CLK_N (F)	0.18429	0.04246	-2.45741

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)	-0.36050	-0.49376	-1.83808
	setup	CLK_N (F)	1.23674	1.17305	2.64359

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)	0.09461	0.20086	2.70411
	hold	CLK_N (F)	0.09574	0.20054	2.70420
	setup	CLK_N (F)	0.18429	0.04211	-2.45769
	setup	CLK_N (F)	0.18324	0.04246	-2.45741

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)	-0.36908	-0.49398	-1.83817
	hold	CLK_N (F)	-0.36050	-0.49376	-1.83808
	setup	CLK_N (F)	1.23248	1.17305	2.64359
	setup	CLK_N (F)	1.23674	1.16968	2.64349

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)	0.06945	0.18618	2.56762
	setup	CLK_N (F)	0.20584	0.05470	-2.35285

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)	-0.44722	-0.64277	-2.62046
	setup	CLK_N (F)	1.40420	1.38469	3.25999

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)	0.06945	0.18618	2.56762
	hold	CLK_N (F)	0.06538	0.18263	2.54226
	setup	CLK_N (F)	0.20584	0.05470	-2.36707
	setup	CLK_N (F)	0.20296	0.05417	-2.35285

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)	-0.48989	-0.65107	-2.65017
	hold	CLK_N (F)	-0.44722	-0.64277	-2.62046
	setup	CLK_N (F)	1.38257	1.36892	3.21816
	setup	CLK_N (F)	1.40420	1.38469	3.25999

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)	0.09450	0.19837	2.67095
	setup	CLK_N (F)	1.36243	1.20679	-0.84453

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)	-0.10124	-0.10695	0.35543
	setup	CLK_N (F)	1.26944	1.25171	3.01622

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)	-0.47322	-0.49236	1.31620
	hold	CLK_N (F)	0.09450	0.19837	2.67095
	setup	CLK_N (F)	1.36243	1.20679	-0.84453
	setup	CLK_N (F)	0.17579	0.03551	-2.43803

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)	-0.10124	-0.10695	0.35543
	hold	CLK_N (F)	-0.40606	-0.56036	-2.41737
	setup	CLK_N (F)	0.38010	0.34412	-0.27579
	setup	CLK_N (F)	1.26944	1.25171	3.01622

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)	0.23095	0.06090	-2.42013
	removal	CLK_N (F)	-0.07217	0.07245	2.55786

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)	0.23095	0.06090	-2.43121
	recovery	CLK_N (F)	0.22970	0.05674	-2.47669
	recovery	CLK_N (F)	0.22563	0.04160	-2.51250
	recovery	CLK_N (F)	0.22945	0.05650	-2.42013
	removal	CLK_N (F)	-0.07758	0.05899	2.47246
	removal	CLK_N (F)	-0.07306	0.06375	2.52075
	removal	CLK_N (F)	-0.07217	0.07245	2.55786
	removal	CLK_N (F)	-0.07606	0.05668	2.45998

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 ()	0.36672	1.11058	16.50020
	min_pulse_width	RESET_B ()	0.48473	1.24190	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 ()	0.31922	1.04492	16.50020
	min_pulse_width	CLK_N ()	0.82339	1.04492	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 ()	0.54839	1.04492	16.50020
	min_pulse_width	CLK_N ()	0.39417	1.07582	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	0.01554	0.01535	0.01567
	CLK_N	0.01854	0.01835	0.01870

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01447	0.01425	0.01388
	CLK_N	0.01708	0.01686	0.01647
	RESET_B	0.01507	0.01478	0.01431
	RESET_B	0.02136	0.02104	0.02050

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)**	0.00079	0.00080	0.00079
	(CLK_N * RESET_B * SCD * SCE)	-0.00050	-0.00051	-0.00050
	(CLK_N * RESET_B * SCD * !SCE)	0.00836	0.00826	0.00813
	(CLK_N * RESET_B * SCD * !SCE)	0.00607	0.00598	0.00584
	(CLK_N * RESET_B * !SCD * !SCE)	0.00836	0.00826	0.00813
	(CLK_N * RESET_B * !SCD * !SCE)	0.00607	0.00598	0.00584
	(CLK_N * !SCD * SCE)	0.00048	0.00049	0.00047
	(CLK_N * !SCD * SCE)	-0.00083	-0.00085	-0.00085
	(CLK_N * !RESET_B * SCD * SCE)	0.00047	0.00047	0.00047
	(CLK_N * !RESET_B * SCD * SCE)	-0.00085	-0.00086	-0.00086
	(CLK_N * !RESET_B * SCD * !SCE)	0.00026	0.00026	0.00022
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00107	-0.00107	-0.00112
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00025	0.00025	0.00023
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00109	-0.00110	-0.00113
	(!CLK_N * RESET_B * SCD * SCE)	0.00079	0.00080	0.00079
	(!CLK_N * RESET_B * SCD * SCE)	-0.00050	-0.00051	-0.00050
	(!CLK_N * RESET_B * SCD * !SCE)	0.00365	0.00353	0.00346
	(!CLK_N * RESET_B * SCD * !SCE)	0.00134	0.00122	0.00116
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00365	0.00354	0.00347
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00134	0.00122	0.00116
	(!CLK_N * !SCD * SCE)	0.00048	0.00049	0.00047
	(!CLK_N * !SCD * SCE)	-0.00083	-0.00085	-0.00086
	(!CLK_N * !RESET_B * SCD * SCE)	0.00047	0.00047	0.00047
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00085	-0.00086	-0.00086
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00026	0.00026	0.00022
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00107	-0.00107	-0.00112
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00025	0.00025	0.00023
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00109	-0.00110	-0.00113

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)**	-0.00077	-0.00078	-0.00079
	(CLK_N * RESET_B * SCD * SCE)	0.00052	0.00052	0.00051
	(CLK_N * RESET_B * SCD * !SCE)	0.00541	0.00527	0.00519
	(CLK_N * RESET_B * SCD * !SCE)	0.00770	0.00756	0.00747
	(CLK_N * RESET_B * !SCD * !SCE)	0.00541	0.00527	0.00518
	(CLK_N * RESET_B * !SCD * !SCE)	0.00771	0.00756	0.00746
	(CLK_N * !SCD * SCE)	-0.00047	-0.00047	-0.00047
	(CLK_N * !SCD * SCE)	0.00086	0.00086	0.00085
	(CLK_N * !RESET_B * SCD * SCE)	-0.00047	-0.00047	-0.00046
	(CLK_N * !RESET_B * SCD * SCE)	0.00086	0.00086	0.00086
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00022	-0.00022	-0.00021
	(CLK_N * !RESET_B * SCD * !SCE)	0.00112	0.00113	0.00113
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00022	-0.00022	-0.00021
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00112	0.00113	0.00113
	(!CLK_N * RESET_B * SCD * SCE)	-0.00077	-0.00078	-0.00079
	(!CLK_N * RESET_B * SCD * SCE)	0.00052	0.00052	0.00051
	(!CLK_N * RESET_B * SCD * !SCE)	0.00087	0.00074	0.00072
	(!CLK_N * RESET_B * SCD * !SCE)	0.00319	0.00306	0.00303
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00088	0.00074	0.00072
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00318	0.00306	0.00303
	(!CLK_N * !SCD * SCE)	-0.00047	-0.00047	-0.00047
	(!CLK_N * !SCD * SCE)	0.00086	0.00086	0.00086
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00047	-0.00047	-0.00046
	(!CLK_N * !RESET_B * SCD * SCE)	0.00086	0.00086	0.00086
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00022	-0.00022	-0.00021
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00112	0.00113	0.00113
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00022	-0.00022	-0.00021
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00112	0.00113	0.00113

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)**	0.00915	0.00908	0.00896
	(CLK_N * D * RESET_B * SCE)	0.00644	0.00637	0.00626
	(CLK_N * D * RESET_B * !SCE)	0.00058	0.00059	0.00059
	(CLK_N * D * RESET_B * !SCE)	-0.00084	-0.00085	-0.00085
	(CLK_N * D * !RESET_B * SCE)	0.00043	0.00043	0.00042
	(CLK_N * D * !RESET_B * SCE)	-0.00083	-0.00083	-0.00082
	(CLK_N * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(CLK_N * D * !RESET_B * !SCE)	-0.00095	-0.00096	-0.00096
	(CLK_N * !D * RESET_B * SCE)	0.00949	0.00942	0.00929
	(CLK_N * !D * RESET_B * SCE)	0.00674	0.00668	0.00655
	(CLK_N * !D * !RESET_B * SCE)	0.00043	0.00043	0.00042
	(CLK_N * !D * !RESET_B * SCE)	-0.00083	-0.00083	-0.00082
	(!D * RESET_B * !SCE)	0.00050	0.00051	0.00050
	(!D * RESET_B * !SCE)	-0.00092	-0.00093	-0.00093
	(!D * !RESET_B * !SCE)	0.00031	0.00031	0.00031
	(!D * !RESET_B * !SCE)	-0.00099	-0.00099	-0.00099
	(!CLK_N * D * RESET_B * SCE)	0.00444	0.00437	0.00430
	(!CLK_N * D * RESET_B * SCE)	0.00171	0.00163	0.00157
	(!CLK_N * D * RESET_B * !SCE)	0.00058	0.00059	0.00059
	(!CLK_N * D * RESET_B * !SCE)	-0.00084	-0.00085	-0.00085
	(!CLK_N * D * !RESET_B * SCE)	0.00043	0.00043	0.00042
	(!CLK_N * D * !RESET_B * SCE)	-0.00083	-0.00083	-0.00082
	(!CLK_N * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!CLK_N * D * !RESET_B * !SCE)	-0.00095	-0.00096	-0.00096
	(!CLK_N * !D * RESET_B * SCE)	0.00478	0.00472	0.00462
	(!CLK_N * !D * RESET_B * SCE)	0.00201	0.00194	0.00186
	(!CLK_N * !D * !RESET_B * SCE)	0.00043	0.00043	0.00042
	(!CLK_N * !D * !RESET_B * SCE)	-0.00083	-0.00083	-0.00082

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)**	0.00603	0.00592	0.00583
	(CLK_N * D * RESET_B * SCE)	0.00875	0.00864	0.00853
	(CLK_N * D * RESET_B * !SCE)	-0.00057	-0.00059	-0.00059
	(CLK_N * D * RESET_B * !SCE)	0.00085	0.00086	0.00085
	(CLK_N * D * !RESET_B * SCE)	-0.00041	-0.00041	-0.00041
	(CLK_N * D * !RESET_B * SCE)	0.00084	0.00084	0.00083
	(CLK_N * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK_N * D * !RESET_B * !SCE)	0.00096	0.00096	0.00096
	(CLK_N * !D * RESET_B * SCE)	0.00580	0.00569	0.00562
	(CLK_N * !D * RESET_B * SCE)	0.00855	0.00844	0.00836
	(CLK_N * !D * !RESET_B * SCE)	-0.00041	-0.00041	-0.00041
	(CLK_N * !D * !RESET_B * SCE)	0.00084	0.00084	0.00083
	(!D * RESET_B * !SCE)	-0.00049	-0.00051	-0.00050
	(!D * RESET_B * !SCE)	0.00093	0.00094	0.00093
	(!D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(!D * !RESET_B * !SCE)	0.00100	0.00100	0.00100
	(!CLK_N * D * RESET_B * SCE)	0.00151	0.00140	0.00136
	(!CLK_N * D * RESET_B * SCE)	0.00425	0.00414	0.00409
	(!CLK_N * D * RESET_B * !SCE)	-0.00057	-0.00059	-0.00059
	(!CLK_N * D * RESET_B * !SCE)	0.00085	0.00085	0.00085
	(!CLK_N * D * !RESET_B * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK_N * D * !RESET_B * SCE)	0.00084	0.00084	0.00083
	(!CLK_N * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK_N * D * !RESET_B * !SCE)	0.00096	0.00096	0.00096
	(!CLK_N * !D * RESET_B * SCE)	0.00128	0.00117	0.00115
	(!CLK_N * !D * RESET_B * SCE)	0.00405	0.00394	0.00391
	(!CLK_N * !D * !RESET_B * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK_N * !D * !RESET_B * SCE)	0.00084	0.00084	0.00083

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)	0.00357	0.00339	0.00330
	(CLK_N * D * RESET_B * SCD)	-0.00028	-0.00049	-0.00057
	(CLK_N * D * RESET_B * !SCD)	0.01005	0.00991	0.00973
	(CLK_N * D * RESET_B * !SCD)	0.00739	0.00722	0.00704
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00359	0.00340	0.00332
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00010	-0.00032	-0.00040
	(CLK_N * !D * RESET_B * SCD)	0.01177	0.01149	0.01125
	(CLK_N * !D * RESET_B * SCD)	0.00688	0.00660	0.00637
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00357	0.00339	0.00330
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00028	-0.00049	-0.00057
	(!CLK_N * D * RESET_B * !SCD)	0.00561	0.00539	0.00522
	(!CLK_N * D * RESET_B * !SCD)	0.00297	0.00274	0.00254
	(!CLK_N * !D * RESET_B * SCD)	0.00706	0.00678	0.00660
	(!CLK_N * !D * RESET_B * SCD)	0.00215	0.00184	0.00169

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)	-0.00012	-0.00025	-0.00029
	(CLK_N * D * RESET_B * SCD)	0.00373	0.00361	0.00358
	(CLK_N * D * RESET_B * !SCD)	0.00821	0.00807	0.00796
	(CLK_N * D * RESET_B * !SCD)	0.01090	0.01075	0.01065
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00014	-0.00028	-0.00030
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00358	0.00343	0.00340
	(CLK_N * !D * RESET_B * SCD)	0.00572	0.00545	0.00534
	(CLK_N * !D * RESET_B * SCD)	0.01061	0.01035	0.01022
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00013	-0.00025	-0.00029
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00373	0.00360	0.00358
	(!CLK_N * D * RESET_B * !SCD)	0.00352	0.00336	0.00324
	(!CLK_N * D * RESET_B * !SCD)	0.00619	0.00602	0.00590
	(!CLK_N * !D * RESET_B * SCD)	0.00117	0.00092	0.00086
	(!CLK_N * !D * RESET_B * SCD)	0.00608	0.00583	0.00577

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01173	0.01147	0.01126
	(CLK_N * D * SCD * SCE * !Q)	0.00538	0.00511	0.00489
	(CLK_N * D * SCD * !SCE * !Q)	0.01165	0.01138	0.01119
	(CLK_N * D * SCD * !SCE * !Q)	0.00549	0.00521	0.00501
	(CLK_N * D * !SCD * SCE * !Q)	0.00242	0.00245	0.00243
	(CLK_N * D * !SCD * SCE * !Q)	-0.00243	-0.00245	-0.00243
	(CLK_N * D * !SCD * !SCE * !Q)	0.01142	0.01115	0.01096
	(CLK_N * D * !SCD * !SCE * !Q)	0.00549	0.00521	0.00501
	(CLK_N * !D * SCD * SCE * !Q)	0.01207	0.01182	0.01159
	(CLK_N * !D * SCD * SCE * !Q)	0.00569	0.00543	0.00519
	(CLK_N * !D * SCD * !SCE * !Q)	0.00240	0.00242	0.00240
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00245	-0.00246	-0.00245
	(CLK_N * !D * !SCD * SCE * !Q)	0.00242	0.00244	0.00243
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00243	-0.00244	-0.00243
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00240	0.00243	0.00241
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00245	-0.00247	-0.00245
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00659	0.00650	0.00642
	(!CLK_N * D * SCD * SCE * !Q)	0.00021	0.00006	0.00001
	(!CLK_N * D * SCD * !SCE * !Q)	0.00652	0.00641	0.00635
	(!CLK_N * D * SCD * !SCE * !Q)	0.00032	0.00016	0.00012
	(!CLK_N * D * !SCD * SCE * !Q)	0.00236	0.00237	0.00236
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00250	-0.00251	-0.00250
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00629	0.00616	0.00612
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00033	0.00017	0.00012
	(!CLK_N * !D * SCD * SCE * !Q)	0.00694	0.00684	0.00674
	(!CLK_N * !D * SCD * SCE * !Q)	0.00050	0.00037	0.00030
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00233	0.00236	0.00233
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00251	-0.00253	-0.00252
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00235	0.00237	0.00236
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00250	-0.00251	-0.00250
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00233	0.00234	0.00234
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00252	-0.00252	-0.00252

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00513	0.00477	0.00445
	(CLK_N * D * SCD * SCE * !Q)	0.01150	0.01114	0.01082
	(CLK_N * D * SCD * !SCE * !Q)	0.00462	0.00425	0.00393
	(CLK_N * D * SCD * !SCE * !Q)	0.01080	0.01043	0.01011
	(CLK_N * D * !SCD * SCE * !Q)	-0.00241	-0.00244	-0.00243
	(CLK_N * D * !SCD * SCE * !Q)	0.00244	0.00246	0.00244
	(CLK_N * D * !SCD * !SCE * !Q)	0.00445	0.00408	0.00377
	(CLK_N * D * !SCD * !SCE * !Q)	0.01039	0.01002	0.00972
	(CLK_N * !D * SCD * SCE * !Q)	0.00490	0.00454	0.00424
	(CLK_N * !D * SCD * SCE * !Q)	0.01131	0.01094	0.01064
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00237	-0.00242	-0.00240
	(CLK_N * !D * SCD * !SCE * !Q)	0.00246	0.00247	0.00245
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00241	-0.00244	-0.00243
	(CLK_N * !D * !SCD * SCE * !Q)	0.00244	0.00246	0.00244
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00237	-0.00243	-0.00241
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00247	0.00248	0.00245
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00020	0.00002	-0.00005
	(!CLK_N * D * SCD * SCE * !Q)	0.00661	0.00645	0.00635
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00031	-0.00049	-0.00057
	(!CLK_N * D * SCD * !SCE * !Q)	0.00591	0.00575	0.00564
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00234	-0.00237	-0.00236
	(!CLK_N * D * !SCD * SCE * !Q)	0.00251	0.00253	0.00251
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00049	-0.00066	-0.00073
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00549	0.00534	0.00526
	(!CLK_N * !D * SCD * SCE * !Q)	-0.00003	-0.00020	-0.00026
	(!CLK_N * !D * SCD * SCE * !Q)	0.00641	0.00625	0.00618
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00230	-0.00235	-0.00233
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00253	0.00254	0.00252
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00234	-0.00237	-0.00236
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00251	0.00253	0.00251
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00231	-0.00234	-0.00234
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00254	0.00254	0.00252

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)**	0.00860	0.00821	0.00802
	(D * RESET_B * SCD * SCE * Q)	0.00579	0.00540	0.00520
	(D * RESET_B * SCD * SCE * !Q)	0.01360	0.01321	0.01312
	(D * RESET_B * SCD * SCE * !Q)	0.01082	0.01043	0.01033
	(D * RESET_B * SCD * !SCE * Q)	0.00860	0.00821	0.00802
	(D * RESET_B * SCD * !SCE * Q)	0.00579	0.00540	0.00520
	(D * RESET_B * SCD * !SCE * !Q)	0.01358	0.01319	0.01310
	(D * RESET_B * SCD * !SCE * !Q)	0.01080	0.01041	0.01031
	(D * RESET_B * !SCD * SCE * Q)	0.01302	0.01254	0.01228
	(D * RESET_B * !SCD * SCE * Q)	0.01021	0.00972	0.00946
	(D * RESET_B * !SCD * !SCE * Q)	0.00860	0.00821	0.00802
	(D * RESET_B * !SCD * !SCE * Q)	0.00579	0.00540	0.00520
	(D * RESET_B * !SCD * !SCE * !Q)	0.01358	0.01319	0.01310
	(D * RESET_B * !SCD * !SCE * !Q)	0.01080	0.01041	0.01031
	(D * !SCD * SCE * !Q)	0.00849	0.00808	0.00791
	(D * !SCD * SCE * !Q)	0.00569	0.00526	0.00509
	(D * !RESET_B * SCD * SCE * !Q)	0.00849	0.00809	0.00791
	(D * !RESET_B * SCD * SCE * !Q)	0.00569	0.00527	0.00510
	(D * !RESET_B * SCD * !SCE * !Q)	0.00849	0.00809	0.00791
	(D * !RESET_B * SCD * !SCE * !Q)	0.00569	0.00527	0.00510
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00849	0.00809	0.00791
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00569	0.00527	0.00510
	(!D * RESET_B * SCD * SCE * Q)	0.00860	0.00821	0.00802
	(!D * RESET_B * SCD * SCE * Q)	0.00579	0.00540	0.00520
	(!D * RESET_B * SCD * SCE * !Q)	0.01362	0.01324	0.01314
	(!D * RESET_B * SCD * SCE * !Q)	0.01084	0.01044	0.01034
	(!D * RESET_B * !SCE * Q)	0.01300	0.01252	0.01227
	(!D * RESET_B * !SCE * Q)	0.01018	0.00968	0.00943
	(!D * RESET_B * !SCD * SCE * Q)	0.01302	0.01254	0.01229
	(!D * RESET_B * !SCD * SCE * Q)	0.01020	0.00971	0.00945
	(!D * !SCE * !Q)	0.00849	0.00808	0.00791
	(!D * !SCE * !Q)	0.00569	0.00526	0.00509
	(!D * !SCD * SCE * !Q)	0.00849	0.00808	0.00791
	(!D * !SCD * SCE * !Q)	0.00569	0.00526	0.00510
	(!D * !RESET_B * SCD * SCE * !Q)	0.00849	0.00809	0.00791
	(!D * !RESET_B * SCD * SCE * !Q)	0.00569	0.00527	0.00510

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)	0.00634	0.00603	0.00586
	(D * RESET_B * SCD * SCE * Q)	0.00914	0.00884	0.00868
	(D * RESET_B * SCD * !SCE * Q)	0.00633	0.00603	0.00586
	(D * RESET_B * SCD * !SCE * Q)	0.00914	0.00884	0.00868
	(D * RESET_B * !SCD * !SCE * Q)	0.00633	0.00603	0.00586
	(D * RESET_B * !SCD * !SCE * Q)	0.00914	0.00884	0.00868
	(D * !SCD * SCE * !Q)	0.00639	0.00609	0.00591
	(D * !SCD * SCE * !Q)	0.00919	0.00890	0.00873
	(D * !RESET_B * SCD * SCE * !Q)	0.00639	0.00609	0.00591
	(D * !RESET_B * SCD * SCE * !Q)	0.00919	0.00890	0.00873
	(D * !RESET_B * SCD * !SCE * !Q)	0.00639	0.00609	0.00591
	(D * !RESET_B * SCD * !SCE * !Q)	0.00919	0.00890	0.00873
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00639	0.00609	0.00591
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00919	0.00890	0.00873
	(!D * RESET_B * SCD * SCE * Q)	0.00633	0.00603	0.00586
	(!D * RESET_B * SCD * SCE * Q)	0.00914	0.00884	0.00868
	(!D * !SCE * !Q)	0.00639	0.00609	0.00591
	(!D * !SCE * !Q)	0.00919	0.00890	0.00873
	(!D * !SCD * SCE * !Q)	0.00639	0.00609	0.00591
	(!D * !SCD * SCE * !Q)	0.00919	0.00890	0.00873
	(!D * !RESET_B * SCD * SCE * !Q)	0.00639	0.00609	0.00591
	(!D * !RESET_B * SCD * SCE * !Q)	0.00919	0.00890	0.00873

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtp_1	44.75520
sky130_fd_sc_hs__sdfrtp_2	47.95200
sky130_fd_sc_hs__sdfrtp_4	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK	Q
sky130_fd_sc_hs__sdfrtp_1	0.00176	0.00180	0.00388	0.00527	0.00292	0.36121
sky130_fd_sc_hs__sdfrtp_2	0.00169	0.00181	0.00396	0.00533	0.00292	0.72034
sky130_fd_sc_hs__sdfrtp_4	0.00170	0.00179	0.00399	0.00526	0.00291	1.40112

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.00103	0.00129
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.00113	0.00139
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.00129	0.00152

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)	0.56577	1.56788	9.03672
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.60855	1.45702	9.09038
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.69686	1.43791	9.29284

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.53092	1.01328	3.39814
	RESET_B->Q (FF)	0.81137	1.60584	7.51139
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.56515	1.03670	3.46164
	RESET_B->Q (FF)	0.85721	1.64169	7.60710
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.58268	1.03491	3.47987
	RESET_B->Q (FF)	0.87054	1.63587	7.61910

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)	-0.16846	-0.30969	-1.37047
	setup	CLK (R)	0.44677	0.49329	1.61257
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.16261	-0.29393	-1.30187
	setup	CLK (R)	0.45744	0.49550	1.55291
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16279	-0.29541	-1.30246
	setup	CLK (R)	0.42925	0.47527	1.54307

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)	-0.15272	-0.35385	-3.73782
	setup	CLK (R)	1.10318	1.16860	4.57162
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14968	-0.34977	-3.71411
	setup	CLK (R)	1.05075	1.11806	4.48263
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16435	-0.36537	-3.85953
	setup	CLK (R)	1.04454	1.10637	4.47462

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)	-0.16846	-0.30969	-1.37154
	hold	CLK (R)	-0.16877	-0.31105	-1.37047
	setup	CLK (R)	0.44677	0.49159	1.61257
	setup	CLK (R)	0.44512	0.49329	1.60954
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.16261	-0.29393	-1.30187
	hold	CLK (R)	-0.16268	-0.29429	-1.30248
	setup	CLK (R)	0.45744	0.49523	1.54834
	setup	CLK (R)	0.45626	0.49550	1.55291
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16279	-0.29541	-1.30246
	hold	CLK (R)	-0.16286	-0.29569	-1.30347
	setup	CLK (R)	0.42925	0.47527	1.54307
	setup	CLK (R)	0.42898	0.47487	1.54225

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)	-0.15272	-0.35422	-3.73782
	hold	CLK (R)	-0.15334	-0.35385	-3.73868
	setup	CLK (R)	1.10086	1.16860	4.57064
	setup	CLK (R)	1.10318	1.16837	4.57162
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.14968	-0.34984	-3.71411
	hold	CLK (R)	-0.14993	-0.34977	-3.71443
	setup	CLK (R)	1.04963	1.11806	4.48252
	setup	CLK (R)	1.05075	1.11789	4.48263
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16600	-0.36537	-3.85953
	hold	CLK (R)	-0.16435	-0.36596	-3.86045
	setup	CLK (R)	1.04432	1.10637	4.47460
	setup	CLK (R)	1.04454	1.10636	4.47462

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)	-0.19359	-0.32520	-1.56876
	setup	CLK (R)	0.46840	0.50151	1.76956
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.18743	-0.31437	-1.51515
	setup	CLK (R)	0.48052	0.50722	1.72535
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.18610	-0.31125	-1.51688
	setup	CLK (R)	0.45058	0.48739	1.71427

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)	-0.20870	-0.44452	-4.48576
	setup	CLK (R)	1.28251	1.38041	5.11201
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.21241	-0.44944	-4.45878
	setup	CLK (R)	1.24539	1.34196	5.04582
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.22811	-0.46350	-4.53022
	setup	CLK (R)	1.23552	1.33078	5.04798

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)	-0.19359	-0.32520	-1.56876
	hold	CLK (R)	-0.19740	-0.32758	-1.57109
	setup	CLK (R)	0.46696	0.50151	1.76115
	setup	CLK (R)	0.46840	0.50120	1.76956
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.18743	-0.31437	-1.51515
	hold	CLK (R)	-0.19039	-0.31437	-1.52178
	setup	CLK (R)	0.48025	0.50647	1.71999
	setup	CLK (R)	0.48052	0.50722	1.72535
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.18610	-0.31125	-1.52194
	hold	CLK (R)	-0.18968	-0.31585	-1.51688
	setup	CLK (R)	0.45058	0.48739	1.71427
	setup	CLK (R)	0.45047	0.48235	1.71125

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)	-0.22282	-0.45978	-4.54706
	hold	CLK (R)	-0.20870	-0.44452	-4.48576
	setup	CLK (R)	1.26289	1.36285	5.11136
	setup	CLK (R)	1.28251	1.38041	5.11201
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.22823	-0.46299	-4.50181
	hold	CLK (R)	-0.21241	-0.44944	-4.45878
	setup	CLK (R)	1.22817	1.32643	5.04582
	setup	CLK (R)	1.24539	1.34196	5.04541
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.25074	-0.48186	-4.58363
	hold	CLK (R)	-0.22811	-0.46350	-4.53022
	setup	CLK (R)	1.22130	1.31912	5.04798
	setup	CLK (R)	1.23552	1.33078	5.03957

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)	-0.16716	-0.30401	-0.67959
	setup	CLK (R)	1.24188	1.19573	1.63237
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.16220	-0.29481	-0.62514
	setup	CLK (R)	1.19166	1.15090	1.60067
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.16308	-0.29391	-0.67713
	setup	CLK (R)	1.18921	1.14315	1.58422

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)	-0.17496	-0.40304	-3.75294
	setup	CLK (R)	1.12354	1.21712	4.87487
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.17418	-0.39851	-3.71002
	setup	CLK (R)	1.07527	1.16855	4.80065
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.19150	-0.41946	-3.70871
	setup	CLK (R)	1.06846	1.16375	4.79648

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)	-0.20181	-0.30692	-0.67959
	hold	CLK (R)	-0.16716	-0.30401	-1.39482
	setup	CLK (R)	1.24188	1.19573	1.07773
	setup	CLK (R)	0.43792	0.48395	1.63237
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.19251	-0.29846	-0.62514
	hold	CLK (R)	-0.16220	-0.29481	-1.34747
	setup	CLK (R)	1.19166	1.15090	1.01940
	setup	CLK (R)	0.45069	0.49151	1.60067
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.21307	-0.31656	-0.67713
	hold	CLK (R)	-0.16308	-0.29391	-1.34557
	setup	CLK (R)	1.18921	1.14315	1.02055
	setup	CLK (R)	0.41860	0.46745	1.58422

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)	-0.36431	-0.60459	-3.75294
	hold	CLK (R)	-0.17496	-0.40304	-4.28564
	setup	CLK (R)	0.63710	0.78634	3.88676
	setup	CLK (R)	1.12354	1.21712	4.87487
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.34592	-0.58960	-3.71002
	hold	CLK (R)	-0.17418	-0.39851	-4.23002
	setup	CLK (R)	0.64094	0.78392	3.83419
	setup	CLK (R)	1.07527	1.16855	4.80065
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.34551	-0.58904	-3.70871
	hold	CLK (R)	-0.19150	-0.41946	-4.31664
	setup	CLK (R)	0.61128	0.76140	3.82726
	setup	CLK (R)	1.06846	1.16375	4.79648

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)	0.49489	0.50693	1.73034
	removal	CLK (R)	-0.30846	-0.37852	-1.57113
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.50487	0.51172	1.69076
	removal	CLK (R)	-0.30223	-0.37143	-1.52881
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.47924	0.49160	1.68293
	removal	CLK (R)	-0.30586	-0.37132	-1.52921

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)	0.49489	0.50693	1.72586
	recovery	CLK (R)	0.49276	0.50438	1.67581
	recovery	CLK (R)	0.48761	0.49344	1.63434
	recovery	CLK (R)	0.49281	0.50640	1.73034
	removal	CLK (R)	-0.31138	-0.39123	-1.66561
	removal	CLK (R)	-0.31319	-0.38763	-1.61107
	removal	CLK (R)	-0.30846	-0.37852	-1.57113
	removal	CLK (R)	-0.31594	-0.39455	-1.67053
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.50434	0.51172	1.68939
	recovery	CLK (R)	0.50487	0.50628	1.63463
	recovery	CLK (R)	0.49948	0.49731	1.59066
	recovery	CLK (R)	0.50472	0.51143	1.69076
	removal	CLK (R)	-0.30827	-0.38596	-1.62738
	removal	CLK (R)	-0.30470	-0.38050	-1.57283
	removal	CLK (R)	-0.30223	-0.37143	-1.52881
	removal	CLK (R)	-0.31172	-0.38952	-1.63209
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.47924	0.49160	1.67968
	recovery	CLK (R)	0.47815	0.48763	1.62913
	recovery	CLK (R)	0.47192	0.47678	1.58440
	recovery	CLK (R)	0.47441	0.48672	1.68293
	removal	CLK (R)	-0.31198	-0.38763	-1.63110
	removal	CLK (R)	-0.30941	-0.38041	-1.57622
	removal	CLK (R)	-0.30586	-0.37132	-1.52921
	removal	CLK (R)	-0.30930	-0.38738	-1.62859

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 ()	0.48564	1.23804	16.50020
	min_pulse_width	RESET_B ()	0.35439	1.10286	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.49902	1.24963	16.50020
	min_pulse_width	RESET_B ()	0.36374	1.11444	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.49531	1.24577	16.50020
	min_pulse_width	RESET_B ()	0.35844	1.10286	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 ()	0.31540	1.04492	16.50020
	min_pulse_width	CLK ()	0.19318	1.04492	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.36124	1.04492	16.50020
	min_pulse_width	CLK ()	0.19318	1.04492	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.42999	1.04492	16.50020
	min_pulse_width	CLK ()	0.19700	1.04492	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 ()	0.59423	1.04492	16.50020
	min_pulse_width	CLK ()	0.91473	1.10286	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.62478	1.04492	16.50020
	min_pulse_width	CLK ()	0.94084	1.12217	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.59040	1.04492	16.50020
	min_pulse_width	CLK ()	0.92830	1.11444	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	0.01741	0.01716	0.01699
	CLK	0.01443	0.01419	0.01402
sky130_fd_sc_hs__sdfrtp_2	CLK	0.01970	0.01962	0.01956
	CLK	0.01662	0.01653	0.01654
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02377	0.02388	0.02396
	CLK	0.02076	0.02088	0.02110

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.01803	0.01785	0.01788
	CLK	0.01511	0.01494	0.01496
	RESET_B	0.01463	0.01426	0.01376
	RESET_B	0.02122	0.02083	0.02031
sky130_fd_sc_hs__sdfrtp_2	CLK	0.01986	0.01991	0.01997
	CLK	0.01700	0.01706	0.01710
	RESET_B	0.01677	0.01661	0.01694
	RESET_B	0.02340	0.02323	0.02273
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02456	0.02501	0.02517
	CLK	0.02164	0.02211	0.02221
	RESET_B	0.01917	0.01959	0.02361
	RESET_B	0.02805	0.02833	0.02785

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)**	0.00078	0.00079	0.00079
	(CLK * RESET_B * SCD * SCE)	-0.00046	-0.00047	-0.00046
	(CLK * RESET_B * SCD * !SCE)	0.00408	0.00396	0.00388
	(CLK * RESET_B * SCD * !SCE)	0.00180	0.00168	0.00161
	(CLK * RESET_B * !SCD * !SCE)	0.00408	0.00396	0.00388
	(CLK * RESET_B * !SCD * !SCE)	0.00180	0.00168	0.00161
	(CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(CLK * !SCD * SCE)	-0.00083	-0.00085	-0.00085
	(CLK * !RESET_B * SCD * SCE)	0.00042	0.00042	0.00042
	(CLK * !RESET_B * SCD * SCE)	-0.00085	-0.00086	-0.00086
	(CLK * !RESET_B * SCD * !SCE)	0.00031	0.00031	0.00027
	(CLK * !RESET_B * SCD * !SCE)	-0.00096	-0.00097	-0.00102
	(CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00031	0.00028
	(CLK * !RESET_B * !SCD * !SCE)	-0.00099	-0.00100	-0.00103
	(!CLK * RESET_B * SCD * SCE)	0.00079	0.00079	0.00079
	(!CLK * RESET_B * SCD * SCE)	-0.00046	-0.00047	-0.00046
	(!CLK * RESET_B * SCD * !SCE)	0.00852	0.00842	0.00827
	(!CLK * RESET_B * SCD * !SCE)	0.00611	0.00602	0.00587
	(!CLK * RESET_B * !SCD * !SCE)	0.00852	0.00842	0.00827
	(!CLK * RESET_B * !SCD * !SCE)	0.00611	0.00602	0.00587
	(!CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00083	-0.00085	-0.00085
	(!CLK * !RESET_B * SCD * SCE)	0.00042	0.00042	0.00042
	(!CLK * !RESET_B * SCD * SCE)	-0.00085	-0.00086	-0.00086
	(!CLK * !RESET_B * SCD * !SCE)	0.00031	0.00031	0.00027
	(!CLK * !RESET_B * SCD * !SCE)	-0.00096	-0.00097	-0.00102
	(!CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00031	0.00028
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00099	-0.00100	-0.00103

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00074	0.00075	0.00075
	(CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00345	0.00332	0.00326
	(CLK * RESET_B * SCD * !SCE)	0.00127	0.00115	0.00109
	(CLK * RESET_B * !SCD * !SCE)	0.00345	0.00333	0.00326
	(CLK * RESET_B * !SCD * !SCE)	0.00127	0.00115	0.00109
	(CLK * !SCD * SCE)	0.00043	0.00043	0.00042
	(CLK * !SCD * SCE)	-0.00078	-0.00080	-0.00080
	(CLK * !RESET_B * SCD * SCE)	0.00041	0.00041	0.00041
	(CLK * !RESET_B * SCD * SCE)	-0.00079	-0.00081	-0.00080
	(CLK * !RESET_B * SCD * !SCE)	0.00030	0.00030	0.00026
	(CLK * !RESET_B * SCD * !SCE)	-0.00091	-0.00091	-0.00096
	(CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00027
	(CLK * !RESET_B * !SCD * !SCE)	-0.00094	-0.00094	-0.00097
	(!CLK * RESET_B * SCD * SCE)	0.00074	0.00075	0.00074
	(!CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * RESET_B * SCD * !SCE)	0.00808	0.00797	0.00783
	(!CLK * RESET_B * SCD * !SCE)	0.00578	0.00569	0.00554
	(!CLK * RESET_B * !SCD * !SCE)	0.00808	0.00798	0.00783
	(!CLK * RESET_B * !SCD * !SCE)	0.00579	0.00569	0.00554
	(!CLK * !SCD * SCE)	0.00043	0.00043	0.00042
	(!CLK * !SCD * SCE)	-0.00078	-0.00080	-0.00080
	(!CLK * !RESET_B * SCD * SCE)	0.00041	0.00041	0.00041
	(!CLK * !RESET_B * SCD * SCE)	-0.00079	-0.00081	-0.00080
	(!CLK * !RESET_B * SCD * !SCE)	0.00030	0.00030	0.00026
	(!CLK * !RESET_B * SCD * !SCE)	-0.00091	-0.00091	-0.00096
	(!CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00094	-0.00094	-0.00097

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00074	0.00075	0.00075
	(CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00350	0.00337	0.00331
	(CLK * RESET_B * SCD * !SCE)	0.00129	0.00117	0.00111
	(CLK * RESET_B * !SCD * !SCE)	0.00350	0.00337	0.00331
	(CLK * RESET_B * !SCD * !SCE)	0.00129	0.00117	0.00111
	(CLK * !SCD * SCE)	0.00042	0.00043	0.00041
	(CLK * !SCD * SCE)	-0.00078	-0.00081	-0.00081
	(CLK * !RESET_B * SCD * SCE)	0.00040	0.00040	0.00040
	(CLK * !RESET_B * SCD * SCE)	-0.00080	-0.00081	-0.00081
	(CLK * !RESET_B * SCD * !SCE)	0.00031	0.00030	0.00027
	(CLK * !RESET_B * SCD * !SCE)	-0.00090	-0.00091	-0.00096
	(CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00027
	(CLK * !RESET_B * !SCD * !SCE)	-0.00093	-0.00094	-0.00097
	(!CLK * RESET_B * SCD * SCE)	0.00074	0.00075	0.00075
	(!CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * RESET_B * SCD * !SCE)	0.00814	0.00803	0.00789
	(!CLK * RESET_B * SCD * !SCE)	0.00581	0.00571	0.00556
	(!CLK * RESET_B * !SCD * !SCE)	0.00814	0.00804	0.00789
	(!CLK * RESET_B * !SCD * !SCE)	0.00581	0.00571	0.00556
	(!CLK * !SCD * SCE)	0.00042	0.00043	0.00041
	(!CLK * !SCD * SCE)	-0.00079	-0.00081	-0.00081
	(!CLK * !RESET_B * SCD * SCE)	0.00040	0.00040	0.00040
	(!CLK * !RESET_B * SCD * SCE)	-0.00080	-0.00081	-0.00081
	(!CLK * !RESET_B * SCD * !SCE)	0.00031	0.00030	0.00027
	(!CLK * !RESET_B * SCD * !SCE)	-0.00090	-0.00091	-0.00096
	(!CLK * !RESET_B * !SCD * !SCE)	0.00030	0.00030	0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00093	-0.00093	-0.00097

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)**	-0.00076	-0.00077	-0.00079
	(CLK * RESET_B * SCD * SCE)	0.00048	0.00048	0.00047
	(CLK * RESET_B * SCD * !SCE)	0.00056	0.00042	0.00040
	(CLK * RESET_B * SCD * !SCE)	0.00285	0.00271	0.00268
	(CLK * RESET_B * !SCD * !SCE)	0.00056	0.00042	0.00040
	(CLK * RESET_B * !SCD * !SCE)	0.00285	0.00270	0.00267
	(CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * !SCD * SCE)	0.00086	0.00086	0.00085
	(CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !RESET_B * SCD * SCE)	0.00086	0.00086	0.00086
	(CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00027	-0.00026
	(CLK * !RESET_B * SCD * !SCE)	0.00103	0.00103	0.00103
	(CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00027	-0.00026
	(CLK * !RESET_B * !SCD * !SCE)	0.00103	0.00103	0.00103
	(!CLK * RESET_B * SCD * SCE)	-0.00076	-0.00077	-0.00079
	(!CLK * RESET_B * SCD * SCE)	0.00048	0.00048	0.00047
	(!CLK * RESET_B * SCD * !SCE)	0.00462	0.00447	0.00438
	(!CLK * RESET_B * SCD * !SCE)	0.00704	0.00688	0.00679
	(!CLK * RESET_B * !SCD * !SCE)	0.00462	0.00447	0.00438
	(!CLK * RESET_B * !SCD * !SCE)	0.00704	0.00688	0.00679
	(!CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * !SCD * SCE)	0.00086	0.00086	0.00085
	(!CLK * !RESET_B * SCD * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !RESET_B * SCD * SCE)	0.00086	0.00086	0.00086
	(!CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00026	-0.00026
	(!CLK * !RESET_B * SCD * !SCE)	0.00103	0.00103	0.00103
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00027	-0.00026
	(!CLK * !RESET_B * !SCD * !SCE)	0.00103	0.00103	0.00103

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00072	-0.00073	-0.00075
	(CLK * RESET_B * SCD * SCE)	0.00046	0.00046	0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00060	0.00047	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00278	0.00264	0.00262
	(CLK * RESET_B * !SCD * !SCE)	0.00060	0.00047	0.00045
	(CLK * RESET_B * !SCD * !SCE)	0.00278	0.00264	0.00262
	(CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00041
	(CLK * !SCD * SCE)	0.00081	0.00080	0.00080
	(CLK * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !RESET_B * SCD * SCE)	0.00081	0.00081	0.00080
	(CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00025	-0.00025
	(CLK * !RESET_B * SCD * !SCE)	0.00097	0.00097	0.00097
	(CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(CLK * !RESET_B * !SCD * !SCE)	0.00097	0.00097	0.00097
	(!CLK * RESET_B * SCD * SCE)	-0.00072	-0.00073	-0.00074
	(!CLK * RESET_B * SCD * SCE)	0.00046	0.00046	0.00044
	(!CLK * RESET_B * SCD * !SCE)	0.00509	0.00495	0.00485
	(!CLK * RESET_B * SCD * !SCE)	0.00739	0.00724	0.00715
	(!CLK * RESET_B * !SCD * !SCE)	0.00509	0.00495	0.00485
	(!CLK * RESET_B * !SCD * !SCE)	0.00739	0.00724	0.00714
	(!CLK * !SCD * SCE)	-0.00042	-0.00042	-0.00041
	(!CLK * !SCD * SCE)	0.00081	0.00080	0.00080
	(!CLK * !RESET_B * SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !RESET_B * SCD * SCE)	0.00081	0.00081	0.00080
	(!CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * SCD * !SCE)	0.00097	0.00097	0.00097
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00026	-0.00026	-0.00025
	(!CLK * !RESET_B * !SCD * !SCE)	0.00097	0.00097	0.00097

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00072	-0.00073	-0.00075
	(CLK * RESET_B * SCD * SCE)	0.00046	0.00046	0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00056	0.00043	0.00041
	(CLK * RESET_B * SCD * !SCE)	0.00276	0.00263	0.00261
	(CLK * RESET_B * !SCD * !SCE)	0.00056	0.00043	0.00041
	(CLK * RESET_B * !SCD * !SCE)	0.00277	0.00263	0.00261
	(CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !SCD * SCE)	0.00082	0.00081	0.00081
	(CLK * !RESET_B * SCD * SCE)	-0.00040	-0.00040	-0.00040
	(CLK * !RESET_B * SCD * SCE)	0.00082	0.00081	0.00081
	(CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00026
	(CLK * !RESET_B * SCD * !SCE)	0.00097	0.00097	0.00097
	(CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00026	-0.00026
	(CLK * !RESET_B * !SCD * !SCE)	0.00097	0.00097	0.00097
	(!CLK * RESET_B * SCD * SCE)	-0.00072	-0.00073	-0.00075
	(!CLK * RESET_B * SCD * SCE)	0.00045	0.00046	0.00044
	(!CLK * RESET_B * SCD * !SCE)	0.00481	0.00467	0.00458
	(!CLK * RESET_B * SCD * !SCE)	0.00715	0.00700	0.00690
	(!CLK * RESET_B * !SCD * !SCE)	0.00481	0.00467	0.00457
	(!CLK * RESET_B * !SCD * !SCE)	0.00715	0.00700	0.00690
	(!CLK * !SCD * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !SCD * SCE)	0.00082	0.00081	0.00081
	(!CLK * !RESET_B * SCD * SCE)	-0.00040	-0.00040	-0.00040
	(!CLK * !RESET_B * SCD * SCE)	0.00082	0.00081	0.00081
	(!CLK * !RESET_B * SCD * !SCE)	-0.00026	-0.00026	-0.00026
	(!CLK * !RESET_B * SCD * !SCE)	0.00097	0.00096	0.00097
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00026	-0.00026
	(!CLK * !RESET_B * !SCD * !SCE)	0.00097	0.00097	0.00097

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)**	0.00479	0.00471	0.00463
	(CLK * D * RESET_B * SCE)	0.00203	0.00194	0.00187
	(CLK * D * RESET_B * !SCE)	0.00065	0.00065	0.00065
	(CLK * D * RESET_B * !SCE)	-0.00080	-0.00081	-0.00081
	(CLK * D * !RESET_B * SCE)	0.00041	0.00041	0.00040
	(CLK * D * !RESET_B * SCE)	-0.00088	-0.00088	-0.00087
	(CLK * D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(CLK * D * !RESET_B * !SCE)	-0.00096	-0.00097	-0.00097
	(CLK * !D * RESET_B * SCE)	0.00514	0.00506	0.00496
	(CLK * !D * RESET_B * SCE)	0.00234	0.00225	0.00216
	(CLK * !D * !RESET_B * SCE)	0.00041	0.00041	0.00040
	(CLK * !D * !RESET_B * SCE)	-0.00088	-0.00088	-0.00087
	(!D * RESET_B * !SCE)	0.00051	0.00051	0.00051
	(!D * RESET_B * !SCE)	-0.00094	-0.00095	-0.00095
	(!D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!D * !RESET_B * !SCE)	-0.00100	-0.00100	-0.00100
	(!CLK * D * RESET_B * SCE)	0.00923	0.00915	0.00902
	(!CLK * D * RESET_B * SCE)	0.00634	0.00626	0.00613
	(!CLK * D * RESET_B * !SCE)	0.00065	0.00065	0.00065
	(!CLK * D * RESET_B * !SCE)	-0.00080	-0.00081	-0.00081
	(!CLK * D * !RESET_B * SCE)	0.00041	0.00041	0.00040
	(!CLK * D * !RESET_B * SCE)	-0.00088	-0.00088	-0.00087
	(!CLK * D * !RESET_B * !SCE)	0.00029	0.00029	0.00029
	(!CLK * D * !RESET_B * !SCE)	-0.00096	-0.00097	-0.00097
	(!CLK * !D * RESET_B * SCE)	0.00958	0.00951	0.00936
	(!CLK * !D * RESET_B * SCE)	0.00665	0.00658	0.00643
	(!CLK * !D * !RESET_B * SCE)	0.00041	0.00041	0.00040
	(!CLK * !D * !RESET_B * SCE)	-0.00088	-0.00088	-0.00087

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00428	0.00418	0.00411
	(CLK * D * RESET_B * SCE)	0.00156	0.00146	0.00139
	(CLK * D * RESET_B * !SCE)	0.00066	0.00067	0.00066
	(CLK * D * RESET_B * !SCE)	-0.00078	-0.00079	-0.00079
	(CLK * D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(CLK * D * !RESET_B * SCE)	-0.00090	-0.00090	-0.00089
	(CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(CLK * D * !RESET_B * !SCE)	-0.00096	-0.00097	-0.00097
	(CLK * !D * RESET_B * SCE)	0.00462	0.00454	0.00444
	(CLK * !D * RESET_B * SCE)	0.00186	0.00178	0.00168
	(CLK * !D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(CLK * !D * !RESET_B * SCE)	-0.00090	-0.00090	-0.00089
	(!D * RESET_B * !SCE)	0.00050	0.00051	0.00050
	(!D * RESET_B * !SCE)	-0.00094	-0.00096	-0.00095
	(!D * !RESET_B * !SCE)	0.00031	0.00031	0.00031
	(!D * !RESET_B * !SCE)	-0.00100	-0.00100	-0.00100
	(!CLK * D * RESET_B * SCE)	0.00891	0.00882	0.00869
	(!CLK * D * RESET_B * SCE)	0.00607	0.00598	0.00585
	(!CLK * D * RESET_B * !SCE)	0.00066	0.00067	0.00066
	(!CLK * D * RESET_B * !SCE)	-0.00078	-0.00080	-0.00079
	(!CLK * D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(!CLK * D * !RESET_B * SCE)	-0.00090	-0.00090	-0.00089
	(!CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!CLK * D * !RESET_B * !SCE)	-0.00096	-0.00097	-0.00097
	(!CLK * !D * RESET_B * SCE)	0.00926	0.00919	0.00902
	(!CLK * !D * RESET_B * SCE)	0.00638	0.00631	0.00615
	(!CLK * !D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(!CLK * !D * !RESET_B * SCE)	-0.00090	-0.00090	-0.00089

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00429	0.00421	0.00413
	(CLK * D * RESET_B * SCE)	0.00156	0.00147	0.00140
	(CLK * D * RESET_B * !SCE)	0.00064	0.00065	0.00064
	(CLK * D * RESET_B * !SCE)	-0.00078	-0.00079	-0.00079
	(CLK * D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(CLK * D * !RESET_B * SCE)	-0.00088	-0.00088	-0.00087
	(CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(CLK * D * !RESET_B * !SCE)	-0.00095	-0.00096	-0.00095
	(CLK * !D * RESET_B * SCE)	0.00464	0.00456	0.00446
	(CLK * !D * RESET_B * SCE)	0.00187	0.00179	0.00169
	(CLK * !D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(CLK * !D * !RESET_B * SCE)	-0.00088	-0.00088	-0.00087
	(!D * RESET_B * !SCE)	0.00050	0.00051	0.00050
	(!D * RESET_B * !SCE)	-0.00092	-0.00094	-0.00093
	(!D * !RESET_B * !SCE)	0.00031	0.00031	0.00031
	(!D * !RESET_B * !SCE)	-0.00098	-0.00098	-0.00098
	(!CLK * D * RESET_B * SCE)	0.00894	0.00886	0.00872
	(!CLK * D * RESET_B * SCE)	0.00608	0.00600	0.00586
	(!CLK * D * RESET_B * !SCE)	0.00064	0.00065	0.00064
	(!CLK * D * RESET_B * !SCE)	-0.00078	-0.00080	-0.00079
	(!CLK * D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(!CLK * D * !RESET_B * SCE)	-0.00088	-0.00088	-0.00087
	(!CLK * D * !RESET_B * !SCE)	0.00028	0.00028	0.00028
	(!CLK * D * !RESET_B * !SCE)	-0.00095	-0.00096	-0.00095
	(!CLK * !D * RESET_B * SCE)	0.00928	0.00920	0.00905
	(!CLK * !D * RESET_B * SCE)	0.00638	0.00631	0.00616
	(!CLK * !D * !RESET_B * SCE)	0.00038	0.00038	0.00037
	(!CLK * !D * !RESET_B * SCE)	-0.00088	-0.00088	-0.00087

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)	0.00132	0.00118	0.00114
	(CLK * D * RESET_B * SCE)	0.00408	0.00396	0.00390
	(CLK * D * RESET_B * !SCE)	-0.00064	-0.00065	-0.00065
	(CLK * D * RESET_B * !SCE)	0.00080	0.00081	0.00081
	(CLK * D * !RESET_B * SCE)	-0.00038	-0.00038	-0.00038
	(CLK * D * !RESET_B * SCE)	0.00088	0.00089	0.00088
	(CLK * D * !RESET_B * !SCE)	-0.00029	-0.00029	-0.00029
	(CLK * D * !RESET_B * !SCE)	0.00097	0.00097	0.00097
	(CLK * !D * RESET_B * SCE)	0.00107	0.00094	0.00092
	(CLK * !D * RESET_B * SCE)	0.00387	0.00375	0.00371
	(CLK * !D * !RESET_B * SCE)	-0.00038	-0.00038	-0.00038
	(CLK * !D * !RESET_B * SCE)	0.00088	0.00089	0.00088
	(!D * RESET_B * !SCE)	-0.00050	-0.00051	-0.00051
	(!D * RESET_B * !SCE)	0.00095	0.00095	0.00095
	(!D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(!D * !RESET_B * !SCE)	0.00101	0.00101	0.00101
	(!CLK * D * RESET_B * SCE)	0.00536	0.00522	0.00514
	(!CLK * D * RESET_B * SCE)	0.00825	0.00812	0.00802
	(!CLK * D * RESET_B * !SCE)	-0.00064	-0.00065	-0.00065
	(!CLK * D * RESET_B * !SCE)	0.00080	0.00081	0.00081
	(!CLK * D * !RESET_B * SCE)	-0.00038	-0.00038	-0.00038
	(!CLK * D * !RESET_B * SCE)	0.00088	0.00089	0.00088
	(!CLK * D * !RESET_B * !SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * D * !RESET_B * !SCE)	0.00097	0.00097	0.00097
	(!CLK * !D * RESET_B * SCE)	0.00512	0.00499	0.00492
	(!CLK * !D * RESET_B * SCE)	0.00804	0.00792	0.00784
	(!CLK * !D * !RESET_B * SCE)	-0.00038	-0.00038	-0.00038
	(!CLK * !D * !RESET_B * SCE)	0.00088	0.00089	0.00088

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00130	0.00117	0.00113
	(CLK * D * RESET_B * SCE)	0.00403	0.00390	0.00384
	(CLK * D * RESET_B * !SCE)	-0.00065	-0.00066	-0.00066
	(CLK * D * RESET_B * !SCE)	0.00079	0.00079	0.00079
	(CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00036
	(CLK * D * !RESET_B * SCE)	0.00090	0.00091	0.00090
	(CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * !SCE)	0.00098	0.00098	0.00097
	(CLK * !D * RESET_B * SCE)	0.00106	0.00093	0.00090
	(CLK * !D * RESET_B * SCE)	0.00382	0.00368	0.00365
	(CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00036
	(CLK * !D * !RESET_B * SCE)	0.00090	0.00091	0.00090
	(!D * RESET_B * !SCE)	-0.00049	-0.00050	-0.00050
	(!D * RESET_B * !SCE)	0.00094	0.00096	0.00095
	(!D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(!D * !RESET_B * !SCE)	0.00101	0.00102	0.00101
	(!CLK * D * RESET_B * SCE)	0.00578	0.00563	0.00553
	(!CLK * D * RESET_B * SCE)	0.00862	0.00849	0.00837
	(!CLK * D * RESET_B * !SCE)	-0.00065	-0.00066	-0.00066
	(!CLK * D * RESET_B * !SCE)	0.00079	0.00080	0.00079
	(!CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00036
	(!CLK * D * !RESET_B * SCE)	0.00090	0.00091	0.00090
	(!CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * !SCE)	0.00098	0.00098	0.00097
	(!CLK * !D * RESET_B * SCE)	0.00554	0.00540	0.00532
	(!CLK * !D * RESET_B * SCE)	0.00842	0.00829	0.00819
	(!CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00036
	(!CLK * !D * !RESET_B * SCE)	0.00090	0.00091	0.00090

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00132	0.00119	0.00114
	(CLK * D * RESET_B * SCE)	0.00405	0.00392	0.00387
	(CLK * D * RESET_B * !SCE)	-0.00063	-0.00064	-0.00064
	(CLK * D * RESET_B * !SCE)	0.00079	0.00079	0.00079
	(CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00036
	(CLK * D * !RESET_B * SCE)	0.00089	0.00089	0.00088
	(CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * D * !RESET_B * !SCE)	0.00096	0.00096	0.00096
	(CLK * !D * RESET_B * SCE)	0.00103	0.00091	0.00088
	(CLK * !D * RESET_B * SCE)	0.00380	0.00367	0.00364
	(CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00036
	(CLK * !D * !RESET_B * SCE)	0.00089	0.00089	0.00088
	(!D * RESET_B * !SCE)	-0.00049	-0.00050	-0.00050
	(!D * RESET_B * !SCE)	0.00094	0.00094	0.00093
	(!D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(!D * !RESET_B * !SCE)	0.00099	0.00100	0.00100
	(!CLK * D * RESET_B * SCE)	0.00555	0.00541	0.00532
	(!CLK * D * RESET_B * SCE)	0.00841	0.00829	0.00816
	(!CLK * D * RESET_B * !SCE)	-0.00063	-0.00065	-0.00064
	(!CLK * D * RESET_B * !SCE)	0.00079	0.00080	0.00079
	(!CLK * D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00036
	(!CLK * D * !RESET_B * SCE)	0.00089	0.00089	0.00088
	(!CLK * D * !RESET_B * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * D * !RESET_B * !SCE)	0.00096	0.00096	0.00096
	(!CLK * !D * RESET_B * SCE)	0.00527	0.00514	0.00507
	(!CLK * !D * RESET_B * SCE)	0.00817	0.00804	0.00796
	(!CLK * !D * !RESET_B * SCE)	-0.00035	-0.00035	-0.00036
	(!CLK * !D * !RESET_B * SCE)	0.00089	0.00089	0.00088

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)	0.00355	0.00335	0.00327
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00025	-0.00047	-0.00056
	(CLK * D * RESET_B * !SCD)	0.00540	0.00518	0.00499
	(CLK * D * RESET_B * !SCD)	0.00282	0.00257	0.00236
	(CLK * !D * RESET_B * SCD)	0.00737	0.00708	0.00690
	(CLK * !D * RESET_B * SCD)	0.00249	0.00218	0.00203
	(!CLK * D * RESET_B * SCD)	0.00355	0.00335	0.00327
	(!CLK * D * RESET_B * SCD)	-0.00025	-0.00048	-0.00056
	(!CLK * D * RESET_B * !SCD)	0.00937	0.00922	0.00904
	(!CLK * D * RESET_B * !SCD)	0.00692	0.00673	0.00653
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00361	0.00342	0.00333
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00004	-0.00026	-0.00034
	(!CLK * !D * RESET_B * SCD)	0.01181	0.01152	0.01130
	(!CLK * !D * RESET_B * SCD)	0.00680	0.00651	0.00629

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00357	0.00338	0.00329
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00028	-0.00051	-0.00058
	(CLK * D * RESET_B * !SCD)	0.00535	0.00512	0.00494
	(CLK * D * RESET_B * !SCD)	0.00268	0.00243	0.00223
	(CLK * !D * RESET_B * SCD)	0.00685	0.00656	0.00639
	(CLK * !D * RESET_B * SCD)	0.00196	0.00166	0.00150
	(!CLK * D * RESET_B * SCD)	0.00357	0.00338	0.00329
	(!CLK * D * RESET_B * SCD)	-0.00028	-0.00051	-0.00058
	(!CLK * D * RESET_B * !SCD)	0.00974	0.00959	0.00941
	(!CLK * D * RESET_B * !SCD)	0.00719	0.00701	0.00681
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00359	0.00339	0.00330
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00012	-0.00034	-0.00041
	(!CLK * !D * RESET_B * SCD)	0.01149	0.01120	0.01097
	(!CLK * !D * RESET_B * SCD)	0.00647	0.00619	0.00596

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00358	0.00339	0.00330
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00028	-0.00051	-0.00058
	(CLK * D * RESET_B * !SCD)	0.00536	0.00514	0.00496
	(CLK * D * RESET_B * !SCD)	0.00271	0.00246	0.00226
	(CLK * !D * RESET_B * SCD)	0.00689	0.00660	0.00643
	(CLK * !D * RESET_B * SCD)	0.00197	0.00166	0.00151
	(!CLK * D * RESET_B * SCD)	0.00358	0.00339	0.00330
	(!CLK * D * RESET_B * SCD)	-0.00028	-0.00051	-0.00058
	(!CLK * D * RESET_B * !SCD)	0.00951	0.00936	0.00919
	(!CLK * D * RESET_B * !SCD)	0.00699	0.00681	0.00662
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00358	0.00338	0.00330
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00013	-0.00035	-0.00042
	(!CLK * !D * RESET_B * SCD)	0.01153	0.01124	0.01101
	(!CLK * !D * RESET_B * SCD)	0.00648	0.00619	0.00596

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)**	-0.00010	-0.00023	-0.00027
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00372	0.00358	0.00355
	(CLK * D * RESET_B * !SCD)	0.00388	0.00370	0.00357
	(CLK * D * RESET_B * !SCD)	0.00649	0.00630	0.00618
	(CLK * !D * RESET_B * SCD)	0.00091	0.00065	0.00059
	(CLK * !D * RESET_B * SCD)	0.00578	0.00553	0.00548
	(!CLK * D * RESET_B * SCD)	-0.00010	-0.00023	-0.00027
	(!CLK * D * RESET_B * SCD)	0.00373	0.00359	0.00355
	(!CLK * D * RESET_B * !SCD)	0.00830	0.00815	0.00802
	(!CLK * D * RESET_B * !SCD)	0.01078	0.01062	0.01050
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00014	-0.00030	-0.00033
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00351	0.00335	0.00333
	(!CLK * !D * RESET_B * SCD)	0.00497	0.00470	0.00458
	(!CLK * !D * RESET_B * SCD)	0.00997	0.00971	0.00960

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00018	-0.00031	-0.00035
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00370	0.00355	0.00352
	(CLK * D * RESET_B * !SCD)	0.00321	0.00302	0.00290
	(CLK * D * RESET_B * !SCD)	0.00590	0.00571	0.00560
	(CLK * !D * RESET_B * SCD)	0.00090	0.00064	0.00059
	(CLK * !D * RESET_B * SCD)	0.00579	0.00554	0.00549
	(!CLK * D * RESET_B * SCD)	-0.00018	-0.00031	-0.00035
	(!CLK * D * RESET_B * SCD)	0.00370	0.00356	0.00352
	(!CLK * D * RESET_B * !SCD)	0.00782	0.00767	0.00754
	(!CLK * D * RESET_B * !SCD)	0.01039	0.01023	0.01012
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00017	-0.00033	-0.00036
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00353	0.00338	0.00335
	(!CLK * !D * RESET_B * SCD)	0.00539	0.00513	0.00502
	(!CLK * !D * RESET_B * SCD)	0.01040	0.01014	0.01004

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00020	-0.00033	-0.00037
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00368	0.00354	0.00351
	(CLK * D * RESET_B * !SCD)	0.00323	0.00305	0.00292
	(CLK * D * RESET_B * !SCD)	0.00590	0.00571	0.00561
	(CLK * !D * RESET_B * SCD)	0.00086	0.00060	0.00055
	(CLK * !D * RESET_B * SCD)	0.00578	0.00553	0.00547
	(!CLK * D * RESET_B * SCD)	-0.00020	-0.00033	-0.00037
	(!CLK * D * RESET_B * SCD)	0.00368	0.00355	0.00351
	(!CLK * D * RESET_B * !SCD)	0.00785	0.00770	0.00757
	(!CLK * D * RESET_B * !SCD)	0.01039	0.01023	0.01012
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00018	-0.00034	-0.00036
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00353	0.00338	0.00335
	(!CLK * !D * RESET_B * SCD)	0.00512	0.00485	0.00473
	(!CLK * !D * RESET_B * SCD)	0.01017	0.00990	0.00978

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)**	0.00660	0.00650	0.00644
	(CLK * D * SCD * SCE * !Q)	0.00029	0.00015	0.00009
	(CLK * D * SCD * !SCE * !Q)	0.00654	0.00641	0.00638
	(CLK * D * SCD * !SCE * !Q)	0.00041	0.00027	0.00022
	(CLK * D * !SCD * SCE * !Q)	0.00205	0.00207	0.00205
	(CLK * D * !SCD * SCE * !Q)	-0.00271	-0.00273	-0.00272
	(CLK * D * !SCD * !SCE * !Q)	0.00632	0.00619	0.00614
	(CLK * D * !SCD * !SCE * !Q)	0.00041	0.00026	0.00022
	(CLK * !D * SCD * SCE * !Q)	0.00696	0.00686	0.00677
	(CLK * !D * SCD * SCE * !Q)	0.00059	0.00047	0.00039
	(CLK * !D * SCD * !SCE * !Q)	0.00201	0.00205	0.00203
	(CLK * !D * SCD * !SCE * !Q)	-0.00271	-0.00274	-0.00273
	(CLK * !D * !SCD * SCE * !Q)	0.00205	0.00207	0.00205
	(CLK * !D * !SCD * SCE * !Q)	-0.00271	-0.00273	-0.00272
	(CLK * !D * !SCD * !SCE * !Q)	0.00202	0.00205	0.00204
	(CLK * !D * !SCD * !SCE * !Q)	-0.00272	-0.00275	-0.00274
	(!CLK * D * SCD * SCE * !Q)	0.01145	0.01120	0.01099
	(!CLK * D * SCD * SCE * !Q)	0.00503	0.00476	0.00456
	(!CLK * D * SCD * !SCE * !Q)	0.01139	0.01112	0.01094
	(!CLK * D * SCD * !SCE * !Q)	0.00514	0.00488	0.00467
	(!CLK * D * !SCD * SCE * !Q)	0.00206	0.00208	0.00207
	(!CLK * D * !SCD * SCE * !Q)	-0.00270	-0.00271	-0.00270
	(!CLK * D * !SCD * !SCE * !Q)	0.01116	0.01088	0.01071
	(!CLK * D * !SCD * !SCE * !Q)	0.00514	0.00488	0.00468
	(!CLK * !D * SCD * SCE * !Q)	0.01180	0.01156	0.01134
	(!CLK * !D * SCD * SCE * !Q)	0.00534	0.00509	0.00485
	(!CLK * !D * SCD * !SCE * !Q)	0.00204	0.00204	0.00204
	(!CLK * !D * SCD * !SCE * !Q)	-0.00272	-0.00272	-0.00272
	(!CLK * !D * !SCD * SCE * !Q)	0.00206	0.00207	0.00207
	(!CLK * !D * !SCD * SCE * !Q)	-0.00270	-0.00271	-0.00270
	(!CLK * !D * !SCD * !SCE * !Q)	0.00204	0.00207	0.00205
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00272	-0.00274	-0.00272

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00608	0.00597	0.00591
	(CLK * D * SCD * SCE * !Q)	-0.00022	-0.00035	-0.00041
	(CLK * D * SCD * !SCE * !Q)	0.00593	0.00581	0.00577
	(CLK * D * SCD * !SCE * !Q)	-0.00019	-0.00033	-0.00037
	(CLK * D * !SCD * SCE * !Q)	0.00205	0.00208	0.00206
	(CLK * D * !SCD * SCE * !Q)	-0.00273	-0.00275	-0.00274
	(CLK * D * !SCD * !SCE * !Q)	0.00570	0.00557	0.00553
	(CLK * D * !SCD * !SCE * !Q)	-0.00018	-0.00032	-0.00036
	(CLK * !D * SCD * SCE * !Q)	0.00643	0.00634	0.00625
	(CLK * !D * SCD * SCE * !Q)	0.00010	-0.00004	-0.00011
	(CLK * !D * SCD * !SCE * !Q)	0.00203	0.00205	0.00203
	(CLK * !D * SCD * !SCE * !Q)	-0.00275	-0.00276	-0.00275
	(CLK * !D * !SCD * SCE * !Q)	0.00205	0.00208	0.00206
	(CLK * !D * !SCD * SCE * !Q)	-0.00273	-0.00275	-0.00274
	(CLK * !D * !SCD * !SCE * !Q)	0.00204	0.00206	0.00204
	(CLK * !D * !SCD * !SCE * !Q)	-0.00276	-0.00277	-0.00275
	(!CLK * D * SCD * SCE * !Q)	0.01116	0.01090	0.01069
	(!CLK * D * SCD * SCE * !Q)	0.00476	0.00449	0.00427
	(!CLK * D * SCD * !SCE * !Q)	0.01101	0.01073	0.01055
	(!CLK * D * SCD * !SCE * !Q)	0.00479	0.00452	0.00431
	(!CLK * D * !SCD * SCE * !Q)	0.00205	0.00207	0.00205
	(!CLK * D * !SCD * SCE * !Q)	-0.00274	-0.00275	-0.00274
	(!CLK * D * !SCD * !SCE * !Q)	0.01078	0.01050	0.01031
	(!CLK * D * !SCD * !SCE * !Q)	0.00479	0.00452	0.00431
	(!CLK * !D * SCD * SCE * !Q)	0.01151	0.01125	0.01103
	(!CLK * !D * SCD * SCE * !Q)	0.00507	0.00482	0.00457
	(!CLK * !D * SCD * !SCE * !Q)	0.00203	0.00204	0.00203
	(!CLK * !D * SCD * !SCE * !Q)	-0.00275	-0.00276	-0.00275
	(!CLK * !D * !SCD * SCE * !Q)	0.00205	0.00206	0.00205
	(!CLK * !D * !SCD * SCE * !Q)	-0.00274	-0.00275	-0.00274
	(!CLK * !D * !SCD * !SCE * !Q)	0.00203	0.00205	0.00204
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00276	-0.00277	-0.00276

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00610	0.00600	0.00593
	(CLK * D * SCD * SCE * !Q)	-0.00017	-0.00032	-0.00037
	(CLK * D * SCD * !SCE * !Q)	0.00596	0.00583	0.00579
	(CLK * D * SCD * !SCE * !Q)	-0.00014	-0.00029	-0.00033
	(CLK * D * !SCD * SCE * !Q)	0.00202	0.00204	0.00202
	(CLK * D * !SCD * SCE * !Q)	-0.00271	-0.00273	-0.00272
	(CLK * D * !SCD * !SCE * !Q)	0.00573	0.00561	0.00556
	(CLK * D * !SCD * !SCE * !Q)	-0.00014	-0.00029	-0.00033
	(CLK * !D * SCD * SCE * !Q)	0.00646	0.00636	0.00625
	(CLK * !D * SCD * SCE * !Q)	0.00014	0.00000	-0.00006
	(CLK * !D * SCD * !SCE * !Q)	0.00200	0.00201	0.00200
	(CLK * !D * SCD * !SCE * !Q)	-0.00273	-0.00274	-0.00273
	(CLK * !D * !SCD * SCE * !Q)	0.00202	0.00204	0.00203
	(CLK * !D * !SCD * SCE * !Q)	-0.00272	-0.00273	-0.00272
	(CLK * !D * !SCD * !SCE * !Q)	0.00200	0.00201	0.00201
	(CLK * !D * !SCD * !SCE * !Q)	-0.00273	-0.00274	-0.00274
	(!CLK * D * SCD * SCE * !Q)	0.01113	0.01087	0.01065
	(!CLK * D * SCD * SCE * !Q)	0.00474	0.00448	0.00427
	(!CLK * D * SCD * !SCE * !Q)	0.01097	0.01070	0.01052
	(!CLK * D * SCD * !SCE * !Q)	0.00477	0.00450	0.00430
	(!CLK * D * !SCD * SCE * !Q)	0.00201	0.00203	0.00202
	(!CLK * D * !SCD * SCE * !Q)	-0.00272	-0.00274	-0.00273
	(!CLK * D * !SCD * !SCE * !Q)	0.01075	0.01047	0.01029
	(!CLK * D * !SCD * !SCE * !Q)	0.00477	0.00450	0.00430
	(!CLK * !D * SCD * SCE * !Q)	0.01147	0.01123	0.01099
	(!CLK * !D * SCD * SCE * !Q)	0.00505	0.00480	0.00457
	(!CLK * !D * SCD * !SCE * !Q)	0.00199	0.00202	0.00199
	(!CLK * !D * SCD * !SCE * !Q)	-0.00274	-0.00276	-0.00274
	(!CLK * !D * !SCD * SCE * !Q)	0.00201	0.00201	0.00202
	(!CLK * !D * !SCD * SCE * !Q)	-0.00272	-0.00272	-0.00273
	(!CLK * !D * !SCD * !SCE * !Q)	0.00199	0.00200	0.00200
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00274	-0.00274	-0.00275

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)**	0.00037	0.00020	0.00012
	(CLK * D * SCD * SCE * !Q)	0.00671	0.00656	0.00646
	(CLK * D * SCD * !SCE * !Q)	-0.00015	-0.00033	-0.00041
	(CLK * D * SCD * !SCE * !Q)	0.00599	0.00584	0.00573
	(CLK * D * !SCD * SCE * !Q)	-0.00203	-0.00207	-0.00205
	(CLK * D * !SCD * SCE * !Q)	0.00273	0.00274	0.00272
	(CLK * D * !SCD * !SCE * !Q)	-0.00033	-0.00049	-0.00057
	(CLK * D * !SCD * !SCE * !Q)	0.00558	0.00544	0.00535
	(CLK * !D * SCD * SCE * !Q)	0.00013	-0.00003	-0.00009
	(CLK * !D * SCD * SCE * !Q)	0.00650	0.00635	0.00627
	(CLK * !D * SCD * !SCE * !Q)	-0.00199	-0.00205	-0.00203
	(CLK * !D * SCD * !SCE * !Q)	0.00274	0.00275	0.00273
	(CLK * !D * !SCD * SCE * !Q)	-0.00203	-0.00207	-0.00205
	(CLK * !D * !SCD * SCE * !Q)	0.00273	0.00274	0.00272
	(CLK * !D * !SCD * !SCE * !Q)	-0.00201	-0.00205	-0.00204
	(CLK * !D * !SCD * !SCE * !Q)	0.00275	0.00276	0.00274
	(!CLK * D * SCD * SCE * !Q)	0.00482	0.00446	0.00414
	(!CLK * D * SCD * SCE * !Q)	0.01129	0.01091	0.01058
	(!CLK * D * SCD * !SCE * !Q)	0.00429	0.00393	0.00360
	(!CLK * D * SCD * !SCE * !Q)	0.01057	0.01019	0.00986
	(!CLK * D * !SCD * SCE * !Q)	-0.00205	-0.00208	-0.00207
	(!CLK * D * !SCD * SCE * !Q)	0.00271	0.00274	0.00271
	(!CLK * D * !SCD * !SCE * !Q)	0.00412	0.00376	0.00344
	(!CLK * D * !SCD * !SCE * !Q)	0.01017	0.00978	0.00948
	(!CLK * !D * SCD * SCE * !Q)	0.00458	0.00422	0.00392
	(!CLK * !D * SCD * SCE * !Q)	0.01108	0.01070	0.01041
	(!CLK * !D * SCD * !SCE * !Q)	-0.00201	-0.00204	-0.00204
	(!CLK * !D * SCD * !SCE * !Q)	0.00273	0.00274	0.00272
	(!CLK * !D * !SCD * SCE * !Q)	-0.00205	-0.00207	-0.00207
	(!CLK * !D * !SCD * SCE * !Q)	0.00271	0.00274	0.00271
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00202	-0.00206	-0.00205
	(!CLK * !D * !SCD * !SCE * !Q)	0.00274	0.00275	0.00272

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00030	0.00014	0.00006
	(CLK * D * SCD * SCE * !Q)	0.00662	0.00647	0.00638
	(CLK * D * SCD * !SCE * !Q)	-0.00017	-0.00033	-0.00041
	(CLK * D * SCD * !SCE * !Q)	0.00596	0.00581	0.00571
	(CLK * D * !SCD * SCE * !Q)	-0.00204	-0.00207	-0.00206
	(CLK * D * !SCD * SCE * !Q)	0.00275	0.00276	0.00274
	(CLK * D * !SCD * !SCE * !Q)	-0.00034	-0.00050	-0.00057
	(CLK * D * !SCD * !SCE * !Q)	0.00555	0.00541	0.00532
	(CLK * !D * SCD * SCE * !Q)	0.00006	-0.00010	-0.00015
	(CLK * !D * SCD * SCE * !Q)	0.00641	0.00625	0.00619
	(CLK * !D * SCD * !SCE * !Q)	-0.00200	-0.00205	-0.00203
	(CLK * !D * SCD * !SCE * !Q)	0.00276	0.00277	0.00275
	(CLK * !D * !SCD * SCE * !Q)	-0.00204	-0.00207	-0.00206
	(CLK * !D * !SCD * SCE * !Q)	0.00275	0.00276	0.00274
	(CLK * !D * !SCD * !SCE * !Q)	-0.00201	-0.00206	-0.00204
	(CLK * !D * !SCD * !SCE * !Q)	0.00277	0.00278	0.00275
	(!CLK * D * SCD * SCE * !Q)	0.00519	0.00481	0.00448
	(!CLK * D * SCD * SCE * !Q)	0.01158	0.01123	0.01089
	(!CLK * D * SCD * !SCE * !Q)	0.00470	0.00434	0.00400
	(!CLK * D * SCD * !SCE * !Q)	0.01097	0.01057	0.01023
	(!CLK * D * !SCD * SCE * !Q)	-0.00203	-0.00207	-0.00205
	(!CLK * D * !SCD * SCE * !Q)	0.00275	0.00278	0.00274
	(!CLK * D * !SCD * !SCE * !Q)	0.00456	0.00417	0.00384
	(!CLK * D * !SCD * !SCE * !Q)	0.01052	0.01016	0.00984
	(!CLK * !D * SCD * SCE * !Q)	0.00493	0.00457	0.00426
	(!CLK * !D * SCD * SCE * !Q)	0.01142	0.01102	0.01070
	(!CLK * !D * SCD * !SCE * !Q)	-0.00200	-0.00204	-0.00203
	(!CLK * !D * SCD * !SCE * !Q)	0.00277	0.00279	0.00275
	(!CLK * !D * !SCD * SCE * !Q)	-0.00203	-0.00206	-0.00205
	(!CLK * !D * !SCD * SCE * !Q)	0.00275	0.00278	0.00274
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00201	-0.00205	-0.00204
	(!CLK * !D * !SCD * !SCE * !Q)	0.00278	0.00279	0.00276

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00031	0.00015	0.00007
	(CLK * D * SCD * SCE * !Q)	0.00661	0.00645	0.00636
	(CLK * D * SCD * !SCE * !Q)	-0.00015	-0.00032	-0.00041
	(CLK * D * SCD * !SCE * !Q)	0.00595	0.00580	0.00569
	(CLK * D * !SCD * SCE * !Q)	-0.00201	-0.00204	-0.00202
	(CLK * D * !SCD * SCE * !Q)	0.00273	0.00274	0.00272
	(CLK * D * !SCD * !SCE * !Q)	-0.00033	-0.00049	-0.00056
	(CLK * D * !SCD * !SCE * !Q)	0.00554	0.00538	0.00530
	(CLK * !D * SCD * SCE * !Q)	0.00003	-0.00013	-0.00019
	(CLK * !D * SCD * SCE * !Q)	0.00636	0.00620	0.00614
	(CLK * !D * SCD * !SCE * !Q)	-0.00197	-0.00201	-0.00200
	(CLK * !D * SCD * !SCE * !Q)	0.00274	0.00275	0.00273
	(CLK * !D * !SCD * SCE * !Q)	-0.00201	-0.00204	-0.00203
	(CLK * !D * !SCD * SCE * !Q)	0.00273	0.00274	0.00272
	(CLK * !D * !SCD * !SCE * !Q)	-0.00198	-0.00201	-0.00201
	(CLK * !D * !SCD * !SCE * !Q)	0.00275	0.00276	0.00274
	(!CLK * D * SCD * SCE * !Q)	0.00497	0.00461	0.00429
	(!CLK * D * SCD * SCE * !Q)	0.01140	0.01101	0.01069
	(!CLK * D * SCD * !SCE * !Q)	0.00450	0.00414	0.00381
	(!CLK * D * SCD * !SCE * !Q)	0.01074	0.01035	0.01003
	(!CLK * D * !SCD * SCE * !Q)	-0.00200	-0.00203	-0.00202
	(!CLK * D * !SCD * SCE * !Q)	0.00274	0.00276	0.00273
	(!CLK * D * !SCD * !SCE * !Q)	0.00433	0.00397	0.00365
	(!CLK * D * !SCD * !SCE * !Q)	0.01033	0.00995	0.00964
	(!CLK * !D * SCD * SCE * !Q)	0.00469	0.00433	0.00402
	(!CLK * !D * SCD * SCE * !Q)	0.01115	0.01077	0.01047
	(!CLK * !D * SCD * !SCE * !Q)	-0.00196	-0.00201	-0.00199
	(!CLK * !D * SCD * !SCE * !Q)	0.00275	0.00276	0.00274
	(!CLK * !D * !SCD * SCE * !Q)	-0.00200	-0.00201	-0.00202
	(!CLK * !D * !SCD * SCE * !Q)	0.00274	0.00276	0.00273
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00197	-0.00200	-0.00200
	(!CLK * !D * !SCD * !SCE * !Q)	0.00276	0.00277	0.00275

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)	0.00951	0.00918	0.00904
	(D * RESET_B * SCD * SCE * Q)	0.00657	0.00623	0.00610
	(D * RESET_B * SCD * !SCE * Q)	0.00951	0.00918	0.00904
	(D * RESET_B * SCD * !SCE * Q)	0.00657	0.00623	0.00610
	(D * RESET_B * !SCD * !SCE * Q)	0.00951	0.00918	0.00904
	(D * RESET_B * !SCD * !SCE * Q)	0.00657	0.00623	0.00610
	(D * !SCD * SCE * !Q)	0.00980	0.00948	0.00934
	(D * !SCD * SCE * !Q)	0.00687	0.00652	0.00639
	(D * !RESET_B * SCD * SCE * !Q)	0.00980	0.00947	0.00934
	(D * !RESET_B * SCD * SCE * !Q)	0.00686	0.00652	0.00639
	(D * !RESET_B * SCD * !SCE * !Q)	0.00980	0.00947	0.00934
	(D * !RESET_B * SCD * !SCE * !Q)	0.00686	0.00652	0.00639
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00980	0.00947	0.00934
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00686	0.00652	0.00639
	(!D * RESET_B * SCD * SCE * Q)	0.00950	0.00918	0.00905
	(!D * RESET_B * SCD * SCE * Q)	0.00657	0.00622	0.00610
	(!D * !SCE * !Q)	0.00980	0.00948	0.00934
	(!D * !SCE * !Q)	0.00687	0.00652	0.00639
	(!D * !SCD * SCE * !Q)	0.00980	0.00947	0.00934
	(!D * !SCD * SCE * !Q)	0.00687	0.00652	0.00639
	(!D * !RESET_B * SCD * SCE * !Q)	0.00980	0.00947	0.00934
	(!D * !RESET_B * SCD * SCE * !Q)	0.00687	0.00652	0.00639

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00950	0.00916	0.00903
	(D * RESET_B * SCD * SCE * Q)	0.00652	0.00618	0.00605
	(D * RESET_B * SCD * !SCE * Q)	0.00950	0.00916	0.00903
	(D * RESET_B * SCD * !SCE * Q)	0.00652	0.00618	0.00605
	(D * RESET_B * !SCD * !SCE * Q)	0.00950	0.00916	0.00903
	(D * RESET_B * !SCD * !SCE * Q)	0.00652	0.00618	0.00605
	(D * !SCD * SCE * !Q)	0.00984	0.00950	0.00937
	(D * !SCD * SCE * !Q)	0.00686	0.00652	0.00640
	(D * !RESET_B * SCD * SCE * !Q)	0.00984	0.00951	0.00937
	(D * !RESET_B * SCD * SCE * !Q)	0.00686	0.00653	0.00640
	(D * !RESET_B * SCD * !SCE * !Q)	0.00984	0.00951	0.00937
	(D * !RESET_B * SCD * !SCE * !Q)	0.00686	0.00653	0.00640
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00984	0.00951	0.00937
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00686	0.00653	0.00640
	(!D * RESET_B * SCD * SCE * Q)	0.00950	0.00916	0.00903
	(!D * RESET_B * SCD * SCE * Q)	0.00652	0.00618	0.00605
	(!D * !SCE * !Q)	0.00984	0.00950	0.00937
	(!D * !SCE * !Q)	0.00686	0.00652	0.00639
	(!D * !SCD * SCE * !Q)	0.00984	0.00950	0.00937
	(!D * !SCD * SCE * !Q)	0.00686	0.00652	0.00640
	(!D * !RESET_B * SCD * SCE * !Q)	0.00984	0.00951	0.00937
	(!D * !RESET_B * SCD * SCE * !Q)	0.00686	0.00653	0.00640

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00935	0.00903	0.00890
	(D * RESET_B * SCD * SCE * Q)	0.00640	0.00605	0.00593
	(D * RESET_B * SCD * !SCE * Q)	0.00935	0.00903	0.00890
	(D * RESET_B * SCD * !SCE * Q)	0.00640	0.00605	0.00593
	(D * RESET_B * !SCD * !SCE * Q)	0.00935	0.00903	0.00890
	(D * RESET_B * !SCD * !SCE * Q)	0.00640	0.00605	0.00593
	(D * !SCD * SCE * !Q)	0.00967	0.00934	0.00921
	(D * !SCD * SCE * !Q)	0.00672	0.00638	0.00624
	(D * !RESET_B * SCD * SCE * !Q)	0.00967	0.00934	0.00921
	(D * !RESET_B * SCD * SCE * !Q)	0.00672	0.00638	0.00625
	(D * !RESET_B * SCD * !SCE * !Q)	0.00967	0.00934	0.00921
	(D * !RESET_B * SCD * !SCE * !Q)	0.00672	0.00638	0.00625
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00967	0.00934	0.00921
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00672	0.00638	0.00625
	(!D * RESET_B * SCD * SCE * Q)	0.00935	0.00903	0.00890
	(!D * RESET_B * SCD * SCE * Q)	0.00640	0.00605	0.00593
	(!D * !SCE * !Q)	0.00967	0.00934	0.00921
	(!D * !SCE * !Q)	0.00672	0.00638	0.00624
	(!D * !SCD * SCE * !Q)	0.00967	0.00934	0.00921
	(!D * !SCD * SCE * !Q)	0.00672	0.00638	0.00624
	(!D * !RESET_B * SCD * SCE * !Q)	0.00967	0.00934	0.00922
	(!D * !RESET_B * SCD * SCE * !Q)	0.00672	0.00638	0.00625

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)**	0.00512	0.00486	0.00471
	(D * RESET_B * SCD * SCE * Q)	0.00807	0.00780	0.00767
	(D * RESET_B * SCD * SCE * !Q)	0.00935	0.00906	0.00878
	(D * RESET_B * SCD * SCE * !Q)	0.01217	0.01187	0.01159
	(D * RESET_B * SCD * !SCE * Q)	0.00512	0.00486	0.00471
	(D * RESET_B * SCD * !SCE * Q)	0.00807	0.00780	0.00767
	(D * RESET_B * SCD * !SCE * !Q)	0.00932	0.00902	0.00875
	(D * RESET_B * SCD * !SCE * !Q)	0.01214	0.01184	0.01157
	(D * RESET_B * !SCD * SCE * Q)	0.00978	0.00950	0.00966
	(D * RESET_B * !SCD * SCE * Q)	0.01287	0.01259	0.01276
	(D * RESET_B * !SCD * !SCE * Q)	0.00512	0.00486	0.00471
	(D * RESET_B * !SCD * !SCE * Q)	0.00807	0.00780	0.00767
	(D * RESET_B * !SCD * !SCE * !Q)	0.00932	0.00902	0.00875
	(D * RESET_B * !SCD * !SCE * !Q)	0.01214	0.01184	0.01157
	(D * !SCD * SCE * !Q)	0.00479	0.00453	0.00438
	(D * !SCD * SCE * !Q)	0.00774	0.00747	0.00733
	(D * !RESET_B * SCD * SCE * !Q)	0.00479	0.00453	0.00437
	(D * !RESET_B * SCD * SCE * !Q)	0.00774	0.00747	0.00732
	(D * !RESET_B * SCD * !SCE * !Q)	0.00479	0.00453	0.00437
	(D * !RESET_B * SCD * !SCE * !Q)	0.00774	0.00747	0.00732
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00479	0.00453	0.00437
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00774	0.00747	0.00732
	(!D * RESET_B * SCD * SCE * Q)	0.00512	0.00486	0.00471
	(!D * RESET_B * SCD * SCE * Q)	0.00807	0.00780	0.00767
	(!D * RESET_B * SCD * SCE * !Q)	0.00937	0.00908	0.00881
	(!D * RESET_B * SCD * SCE * !Q)	0.01218	0.01188	0.01162
	(!D * RESET_B * !SCE * Q)	0.00976	0.00949	0.00964
	(!D * RESET_B * !SCE * Q)	0.01284	0.01256	0.01272
	(!D * RESET_B * !SCD * SCE * Q)	0.00977	0.00949	0.00966
	(!D * RESET_B * !SCD * SCE * Q)	0.01286	0.01258	0.01275
	(!D * !SCE * !Q)	0.00479	0.00453	0.00438
	(!D * !SCE * !Q)	0.00774	0.00747	0.00733
	(!D * !SCD * SCE * !Q)	0.00479	0.00453	0.00438
	(!D * !SCD * SCE * !Q)	0.00774	0.00747	0.00733
	(!D * !RESET_B * SCD * SCE * !Q)	0.00479	0.00453	0.00437
	(!D * !RESET_B * SCD * SCE * !Q)	0.00774	0.00747	0.00732

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00514	0.00487	0.00473
	(D * RESET_B * SCD * SCE * Q)	0.00811	0.00784	0.00770
	(D * RESET_B * SCD * SCE * !Q)	0.00958	0.00929	0.00900
	(D * RESET_B * SCD * SCE * !Q)	0.01243	0.01213	0.01185
	(D * RESET_B * SCD * !SCE * Q)	0.00513	0.00487	0.00473
	(D * RESET_B * SCD * !SCE * Q)	0.00811	0.00784	0.00770
	(D * RESET_B * SCD * !SCE * !Q)	0.00955	0.00925	0.00898
	(D * RESET_B * SCD * !SCE * !Q)	0.01240	0.01210	0.01183
	(D * RESET_B * !SCD * SCE * Q)	0.01021	0.00994	0.01007
	(D * RESET_B * !SCD * SCE * Q)	0.01332	0.01304	0.01319
	(D * RESET_B * !SCD * !SCE * Q)	0.00513	0.00487	0.00473
	(D * RESET_B * !SCD * !SCE * Q)	0.00811	0.00784	0.00770
	(D * RESET_B * !SCD * !SCE * !Q)	0.00955	0.00925	0.00898
	(D * RESET_B * !SCD * !SCE * !Q)	0.01240	0.01210	0.01183
	(D * !SCD * SCE * !Q)	0.00481	0.00454	0.00440
	(D * !SCD * SCE * !Q)	0.00778	0.00751	0.00738
	(D * !RESET_B * SCD * SCE * !Q)	0.00481	0.00455	0.00439
	(D * !RESET_B * SCD * SCE * !Q)	0.00778	0.00751	0.00736
	(D * !RESET_B * SCD * !SCE * !Q)	0.00481	0.00455	0.00439
	(D * !RESET_B * SCD * !SCE * !Q)	0.00778	0.00751	0.00736
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00481	0.00455	0.00439
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00778	0.00751	0.00736
	(!D * RESET_B * SCD * SCE * Q)	0.00513	0.00487	0.00473
	(!D * RESET_B * SCD * SCE * Q)	0.00811	0.00784	0.00770
	(!D * RESET_B * SCD * SCE * !Q)	0.00960	0.00931	0.00902
	(!D * RESET_B * SCD * SCE * !Q)	0.01244	0.01214	0.01187
	(!D * RESET_B * !SCE * Q)	0.01019	0.00992	0.01006
	(!D * RESET_B * !SCE * Q)	0.01328	0.01301	0.01316
	(!D * RESET_B * !SCD * SCE * Q)	0.01020	0.00993	0.01008
	(!D * RESET_B * !SCD * SCE * Q)	0.01330	0.01303	0.01318
	(!D * !SCE * !Q)	0.00481	0.00454	0.00440
	(!D * !SCE * !Q)	0.00778	0.00751	0.00738
	(!D * !SCD * SCE * !Q)	0.00481	0.00454	0.00440
	(!D * !SCD * SCE * !Q)	0.00778	0.00751	0.00738
	(!D * !RESET_B * SCD * SCE * !Q)	0.00481	0.00455	0.00439
	(!D * !RESET_B * SCD * SCE * !Q)	0.00778	0.00751	0.00736

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00510	0.00484	0.00470
	(D * RESET_B * SCD * SCE * Q)	0.00807	0.00780	0.00768
	(D * RESET_B * SCD * SCE * !Q)	0.00948	0.00918	0.00891
	(D * RESET_B * SCD * SCE * !Q)	0.01232	0.01202	0.01175
	(D * RESET_B * SCD * !SCE * Q)	0.00510	0.00484	0.00470
	(D * RESET_B * SCD * !SCE * Q)	0.00807	0.00780	0.00768
	(D * RESET_B * SCD * !SCE * !Q)	0.00944	0.00915	0.00886
	(D * RESET_B * SCD * !SCE * !Q)	0.01228	0.01198	0.01171
	(D * RESET_B * !SCD * SCE * Q)	0.00993	0.00966	0.00981
	(D * RESET_B * !SCD * SCE * Q)	0.01305	0.01276	0.01292
	(D * RESET_B * !SCD * !SCE * Q)	0.00510	0.00484	0.00470
	(D * RESET_B * !SCD * !SCE * Q)	0.00807	0.00780	0.00768
	(D * RESET_B * !SCD * !SCE * !Q)	0.00944	0.00915	0.00887
	(D * RESET_B * !SCD * !SCE * !Q)	0.01228	0.01198	0.01171
	(D * !SCD * SCE * !Q)	0.00475	0.00448	0.00434
	(D * !SCD * SCE * !Q)	0.00772	0.00745	0.00731
	(D * !RESET_B * SCD * SCE * !Q)	0.00475	0.00448	0.00433
	(D * !RESET_B * SCD * SCE * !Q)	0.00772	0.00745	0.00730
	(D * !RESET_B * SCD * !SCE * !Q)	0.00475	0.00448	0.00433
	(D * !RESET_B * SCD * !SCE * !Q)	0.00772	0.00745	0.00730
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00475	0.00448	0.00433
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00772	0.00745	0.00730
	(!D * RESET_B * SCD * SCE * Q)	0.00510	0.00484	0.00470
	(!D * RESET_B * SCD * SCE * Q)	0.00807	0.00780	0.00768
	(!D * RESET_B * SCD * SCE * !Q)	0.00950	0.00920	0.00893
	(!D * RESET_B * SCD * SCE * !Q)	0.01233	0.01203	0.01177
	(!D * RESET_B * !SCE * Q)	0.00991	0.00964	0.00979
	(!D * RESET_B * !SCE * Q)	0.01301	0.01273	0.01289
	(!D * RESET_B * !SCD * SCE * Q)	0.00992	0.00965	0.00980
	(!D * RESET_B * !SCD * SCE * Q)	0.01303	0.01275	0.01291
	(!D * !SCE * !Q)	0.00475	0.00448	0.00434
	(!D * !SCE * !Q)	0.00772	0.00745	0.00730
	(!D * !SCD * SCE * !Q)	0.00475	0.00448	0.00434
	(!D * !SCD * SCE * !Q)	0.00772	0.00745	0.00730
	(!D * !RESET_B * SCD * SCE * !Q)	0.00475	0.00448	0.00433
	(!D * !RESET_B * SCD * SCE * !Q)	0.00772	0.00745	0.00730

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT	
D	SCD	SCE	SET_B	CLK	Q	Q_N
0	0	x	1	R	0	1
0	1	0	1	R	0	1
x	1	1	1	R	1	0
1	x	0	1	R	1	0
1	0	1	1	R	0	1
x	x	x	0	x	1	0
x	x	x	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfsbp_1	47.95200
sky130_fd_sc_hs__sdfsbp_2	59.14080

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	SCD	SCE	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__sdfsbp_1	0.00176	0.00193	0.00373	0.00322	0.00281	0.34886	0.34248
sky130_fd_sc_hs__sdfsbp_2	0.00182	0.00186	0.00393	0.00332	0.00284	0.72312	0.72542

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.00104	0.00132
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.00126	0.00152

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)	0.85741	1.83250	9.20719
	SET_B->Q (FR)	0.89782	2.19047	13.40650
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.85323	1.68661	9.45551
	SET_B->Q (FR)	1.23595	2.34452	14.07810

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.58413	1.06761	3.43767
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.68216	1.16796	3.73749

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)	0.49300	1.53930	9.08923
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.51234	1.40507	9.23046

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)	0.66924	1.31845	3.71009
	SET_B->Q_N (FF)	0.70144	1.67912	8.01011
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.62272	1.23009	3.86757
	SET_B->Q_N (FF)	0.90512	1.91995	8.60634

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)	-0.13029	-0.25830	-1.30537
	setup	CLK (R)	0.26914	0.35374	1.41034
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16512	-0.28863	-1.38616
	setup	CLK (R)	0.33914	0.41872	1.51922

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)	-0.17620	-0.37384	-3.64921
	setup	CLK (R)	1.09150	1.14576	4.45921
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19984	-0.38911	-3.62594
	setup	CLK (R)	1.31961	1.37087	4.67412

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)	-0.13029	-0.25830	-1.30537
	setup	CLK (R)	0.26914	0.35374	1.41034
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.16512	-0.28863	-1.38616
	setup	CLK (R)	0.33914	0.41872	1.51922

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)	-0.17620	-0.37384	-3.64921
	setup	CLK (R)	1.09150	1.14576	4.45921
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.19984	-0.38911	-3.62594
	setup	CLK (R)	1.31961	1.37087	4.67412

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)	-0.15053	-0.26887	-1.46528
	setup	CLK (R)	0.29481	0.36647	1.54998
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18219	-0.29923	-1.50704
	setup	CLK (R)	0.36129	0.42294	1.63214

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)	-0.23327	-0.47076	-4.38879
	setup	CLK (R)	1.25783	1.35060	5.03284
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.25076	-0.47750	-4.36809
	setup	CLK (R)	1.49437	1.58295	5.21757

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)	-0.15053	-0.26887	-1.46528
	hold	CLK (R)	-0.15178	-0.26995	-1.46926
	setup	CLK (R)	0.29481	0.36630	1.54785
	setup	CLK (R)	0.29368	0.36647	1.54998
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.18219	-0.29923	-1.50704
	hold	CLK (R)	-0.18516	-0.30092	-1.51173
	setup	CLK (R)	0.36129	0.42050	1.62453
	setup	CLK (R)	0.35984	0.42294	1.63214

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)	-0.24988	-0.48482	-4.43825
	hold	CLK (R)	-0.23327	-0.47076	-4.38879
	setup	CLK (R)	1.24278	1.33519	5.03284
	setup	CLK (R)	1.25783	1.35060	5.03276
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.26713	-0.50314	-4.41163
	hold	CLK (R)	-0.25076	-0.47750	-4.36809
	setup	CLK (R)	1.48240	1.56414	5.21483
	setup	CLK (R)	1.49437	1.58295	5.21757

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)	-0.13751	-0.26743	-0.57044
	setup	CLK (R)	1.21091	1.15470	1.45998
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.17220	-0.30196	-0.48028
	setup	CLK (R)	1.44614	1.38754	1.57520

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)	-0.20789	-0.43093	-3.71174
	setup	CLK (R)	1.12334	1.20605	4.80511
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.22844	-0.44923	-3.67251
	setup	CLK (R)	1.35131	1.43184	5.00277

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)	-0.21720	-0.31200	-0.57044
	hold	CLK (R)	-0.13751	-0.26743	-1.35748
	setup	CLK (R)	1.21091	1.15470	0.98680
	setup	CLK (R)	0.27673	0.36349	1.45998
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.23349	-0.32715	-0.48028
	hold	CLK (R)	-0.17220	-0.30196	-1.43590
	setup	CLK (R)	1.44614	1.38754	1.09421
	setup	CLK (R)	0.34631	0.42672	1.57520

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)	-0.31027	-0.55313	-3.71174
	hold	CLK (R)	-0.20789	-0.43093	-4.16977
	setup	CLK (R)	0.45405	0.64179	3.75198
	setup	CLK (R)	1.12334	1.20605	4.80511
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.34334	-0.57771	-3.67251
	hold	CLK (R)	-0.22844	-0.44923	-4.17680
	setup	CLK (R)	0.51845	0.69743	3.73315
	setup	CLK (R)	1.35131	1.43184	5.00277

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)	-0.25038	-0.32416	-0.85190
	removal	CLK (R)	0.28493	0.35045	0.87090
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.33146	-0.41870	-1.11856
	removal	CLK (R)	0.35899	0.44052	1.16321

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)	-0.25039	-0.32416	-0.85190
	recovery	CLK (R)	-0.25038	-0.32416	-0.85190
	recovery	CLK (R)	-0.25200	-0.32416	-0.85190
	removal	CLK (R)	0.28493	0.35045	0.86690
	removal	CLK (R)	0.28493	0.35045	0.86690
	removal	CLK (R)	0.28493	0.35045	0.87090
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.33270	-0.41870	-1.12083
	recovery	CLK (R)	-0.33271	-0.41870	-1.12083
	recovery	CLK (R)	-0.33146	-0.42025	-1.11856
	removal	CLK (R)	0.35899	0.44052	1.16266
	removal	CLK (R)	0.35899	0.44052	1.16266
	removal	CLK (R)	0.35778	0.43883	1.16321

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 ()	0.65736	1.39254	16.50020
	min_pulse_width	SET_B ()	0.72969	1.50455	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.72299	1.41571	16.50020
	min_pulse_width	SET_B ()	1.03404	1.79809	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 ()	0.58659	1.04492	16.50020
	min_pulse_width	CLK ()	0.21610	1.04492	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.56749	1.04492	16.50020
	min_pulse_width	CLK ()	0.26575	1.04492	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 ()	0.49110	1.04492	16.50020
	min_pulse_width	CLK ()	1.07919	1.21100	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.60926	1.10672	16.50020
	min_pulse_width	CLK ()	1.38193	1.48137	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	0.00985	0.00978	0.00971
	CLK	0.00845	0.00839	0.00833
	SET_B	0.00897	0.00910	0.00935
	SET_B	0.01044	0.01057	0.01037
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01381	0.01387	0.01377
	CLK	0.01236	0.01243	0.01234
	SET_B	0.01246	0.01273	0.01351
	SET_B	0.01399	0.01425	0.01405

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01039	0.01035	0.01011
	CLK	0.00890	0.00887	0.00863
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01385	0.01401	0.01380
	CLK	0.01239	0.01255	0.01235

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01041	0.01037	0.01039
	CLK	0.00893	0.00889	0.00891
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01388	0.01404	0.01411
	CLK	0.01243	0.01258	0.01265

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.00984	0.00977	0.00949
	CLK	0.00844	0.00838	0.00809
	SET_B	0.00895	0.00908	0.00899
	SET_B	0.01042	0.01055	0.01015
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01379	0.01385	0.01348
	CLK	0.01234	0.01241	0.01203
	SET_B	0.01243	0.01270	0.01274
	SET_B	0.01396	0.01422	0.01372

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00077	0.00078	0.00077
	(CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCE)	0.00273	0.00260	0.00254
	(CLK * !SCE)	0.00072	0.00058	0.00053
	(CLK * !SCD * SCE)	0.00044	0.00045	0.00043
	(CLK * !SCD * SCE)	-0.00081	-0.00083	-0.00083
	(!CLK * SCD * SCE)	0.00077	0.00078	0.00077
	(!CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00723	0.00712	0.00699
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00497	0.00487	0.00474
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00572	0.00563	0.00554
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00339	0.00331	0.00322
	(!CLK * !SCD * SCE)	0.00044	0.00045	0.00043
	(!CLK * !SCD * SCE)	-0.00081	-0.00083	-0.00083

	(CLK * SCD * SCE)	0.00082	0.00084	0.00083
	(CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !SCE)	0.00286	0.00273	0.00266
	(CLK * !SCE)	0.00081	0.00067	0.00061
	(CLK * !SCD * SCE)	0.00046	0.00047	0.00046
	(CLK * !SCD * SCE)	-0.00082	-0.00084	-0.00084
	(!CLK * SCD * SCE)	0.00082	0.00083	0.00083
	(!CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
sky130_fd_sc_hs__sdfsbp_2	**(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)**	0.00809	0.00799	0.00785
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00590	0.00580	0.00566
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00663	0.00655	0.00645
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00435	0.00428	0.00418
	(!CLK * !SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCD * SCE)	-0.00082	-0.00084	-0.00084

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00075	-0.00076	-0.00077
	(CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCE)	0.00061	0.00051	0.00049
	(CLK * !SCE)	0.00262	0.00253	0.00250
	(CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * !SCD * SCE)	0.00084	0.00083	0.00083
	(!CLK * SCD * SCE)	-0.00075	-0.00076	-0.00077
	(!CLK * SCD * SCE)	0.00047	0.00048	0.00046
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00481	0.00467	0.00461
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00706	0.00693	0.00686
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00292	0.00279	0.00276
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00524	0.00511	0.00508
	(!CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * !SCD * SCE)	0.00084	0.00083	0.00083

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00080	-0.00081	-0.00083
	(CLK * SCD * SCE)	0.00046	0.00046	0.00044
	(CLK * !SCE)	0.00074	0.00062	0.00060
	(CLK * !SCE)	0.00279	0.00268	0.00265
	(CLK * !SCD * SCE)	-0.00046	-0.00045	-0.00045
	(CLK * !SCD * SCE)	0.00085	0.00085	0.00084
	(!CLK * SCD * SCE)	-0.00080	-0.00081	-0.00083
	(!CLK * SCD * SCE)	0.00046	0.00046	0.00044
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00622	0.00608	0.00601
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00840	0.00827	0.00819
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00422	0.00409	0.00405
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00649	0.00636	0.00632
	(!CLK * !SCD * SCE)	-0.00046	-0.00045	-0.00045
	(!CLK * !SCD * SCE)	0.00085	0.00085	0.00084

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00368	0.00357	0.00350
	(CLK * D * SCE)	0.00098	0.00086	0.00080
	(CLK * !D * SCE)	0.00403	0.00394	0.00384
	(CLK * !D * SCE)	0.00128	0.00119	0.00110
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00807	0.00798	0.00785
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00513	0.00504	0.00491
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00657	0.00649	0.00640
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00355	0.00348	0.00339
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00842	0.00834	0.00818
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00543	0.00535	0.00521
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00691	0.00684	0.00674
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00386	0.00379	0.00369
	!SCE	0.00085	0.00085	0.00085
	!SCE	-0.00078	-0.00079	-0.00079

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00370	0.00361	0.00354
	(CLK * D * SCE)	0.00104	0.00095	0.00088
	(CLK * !D * SCE)	0.00405	0.00397	0.00387
	(CLK * !D * SCE)	0.00135	0.00127	0.00118
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00885	0.00877	0.00865
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00606	0.00598	0.00586
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00739	0.00732	0.00724
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00451	0.00445	0.00437
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00920	0.00912	0.00898
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00636	0.00629	0.00615
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00773	0.00768	0.00757
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00482	0.00476	0.00466
	!SCE	0.00079	0.00079	0.00079
	!SCE	-0.00079	-0.00080	-0.00080

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00118	0.00106	0.00103
	(CLK * D * SCE)	0.00389	0.00377	0.00372
	(CLK * !D * SCE)	0.00093	0.00082	0.00081
	(CLK * !D * SCE)	0.00367	0.00356	0.00355
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00544	0.00533	0.00525
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00839	0.00829	0.00819
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00356	0.00345	0.00340
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00658	0.00647	0.00640
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00521	0.00509	0.00504
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00819	0.00809	0.00800
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00332	0.00321	0.00318
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00637	0.00627	0.00623
	!SCE	-0.00084	-0.00085	-0.00085
	!SCE	0.00080	0.00079	0.00079

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00134	0.00124	0.00121
	(CLK * D * SCE)	0.00400	0.00390	0.00385
	(CLK * !D * SCE)	0.00109	0.00100	0.00098
	(CLK * !D * SCE)	0.00379	0.00370	0.00367
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00687	0.00677	0.00669
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00967	0.00958	0.00947
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00488	0.00479	0.00473
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00777	0.00768	0.00760
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00663	0.00654	0.00646
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00946	0.00938	0.00927
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00464	0.00455	0.00451
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00756	0.00747	0.00741
	!SCE	-0.00078	-0.00079	-0.00079
	!SCE	0.00081	0.00081	0.00080

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)**	0.00333	0.00316	0.00308
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00029	-0.00050	-0.00056
	(CLK * D * !SCD)	0.00523	0.00497	0.00481
	(CLK * D * !SCD)	0.00258	0.00231	0.00212
	(CLK * !D * SCD)	0.00586	0.00557	0.00540
	(CLK * !D * SCD)	0.00140	0.00110	0.00095
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00333	0.00316	0.00308
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00029	-0.00050	-0.00056
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00928	0.00913	0.00898
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00687	0.00670	0.00653
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00740	0.00724	0.00709
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00506	0.00488	0.00472
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01036	0.01007	0.00985
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00566	0.00537	0.00516
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00885	0.00858	0.00840
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00408	0.00381	0.00365
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00334	0.00316	0.00308
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00011	-0.00030	-0.00037

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00350	0.00332	0.00324
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00026	-0.00047	-0.00054
	(CLK * D * !SCD)	0.00551	0.00526	0.00509
	(CLK * D * !SCD)	0.00272	0.00246	0.00227
	(CLK * !D * SCD)	0.00611	0.00580	0.00563
	(CLK * !D * SCD)	0.00151	0.00120	0.00104
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00350	0.00332	0.00324
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00026	-0.00048	-0.00054
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01082	0.01069	0.01055
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00819	0.00801	0.00786
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00884	0.00869	0.00856
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00628	0.00611	0.00595
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01134	0.01105	0.01082
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00660	0.00631	0.00609
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00987	0.00961	0.00942
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00505	0.00478	0.00461
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00346	0.00327	0.00319
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00014	-0.00033	-0.00041

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)**	-0.00013	-0.00024	-0.00027
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00351	0.00340	0.00337
	(CLK * D * !SCD)	0.00260	0.00244	0.00231
	(CLK * D * !SCD)	0.00527	0.00510	0.00498
	(CLK * !D * SCD)	0.00089	0.00067	0.00063
	(CLK * !D * SCD)	0.00534	0.00514	0.00508
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00013	-0.00024	-0.00027
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00351	0.00340	0.00337
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00706	0.00694	0.00682
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00949	0.00937	0.00925
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00556	0.00543	0.00533
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00791	0.00779	0.00769
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00509	0.00484	0.00476
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00978	0.00954	0.00946
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00320	0.00296	0.00290
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00796	0.00774	0.00766
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00007	-0.00006	-0.00008
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00352	0.00340	0.00337

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00025	-0.00037	-0.00040
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00352	0.00341	0.00337
	(CLK * D * !SCD)	0.00253	0.00237	0.00224
	(CLK * D * !SCD)	0.00533	0.00516	0.00504
	(CLK * !D * SCD)	0.00101	0.00078	0.00072
	(CLK * !D * SCD)	0.00560	0.00537	0.00532
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00024	-0.00038	-0.00040
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00352	0.00340	0.00337
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00772	0.00760	0.00748
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01039	0.01025	0.01016
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00626	0.00614	0.00604
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00885	0.00871	0.00863
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00649	0.00623	0.00614
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01122	0.01097	0.01087
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00450	0.00425	0.00418
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00931	0.00906	0.00899
	(!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	-0.00014	-0.00017
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00359	0.00346	0.00343

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)	0.00166	0.00168	0.00166
	(CLK * Q * !Q_N)	-0.00141	-0.00142	-0.00141
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00177	0.00179	0.00178
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00129	-0.00130	-0.00129
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00321	0.00317	0.00312
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00003	-0.00004	-0.00005
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00170	0.00171	0.00170
	(CLK * Q * !Q_N)	-0.00146	-0.00147	-0.00146
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00177	0.00179	0.00177
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00139	-0.00139	-0.00138
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00340	0.00334	0.00332
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00012	0.00006	0.00003

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)	-0.00165	-0.00167	-0.00166
	(CLK * Q * !Q_N)	0.00141	0.00142	0.00141
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00176	-0.00178	-0.00178
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00130	0.00131	0.00130
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00000	-0.00007	-0.00009
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00317	0.00312	0.00308
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00168	-0.00170	-0.00170
	(CLK * Q * !Q_N)	0.00146	0.00147	0.00147
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00176	-0.00178	-0.00177
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00139	0.00140	0.00139
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00014	-0.00022	-0.00025
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00312	0.00306	0.00304

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)	0.00959	0.00923	0.00908
	(D * SCD * SCE * Q * !Q_N)	0.00669	0.00635	0.00620
	(D * !SCE * Q * !Q_N)	0.00959	0.00923	0.00908
	(D * !SCE * Q * !Q_N)	0.00669	0.00635	0.00620
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00956	0.00920	0.00904
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00669	0.00631	0.00615
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01614	0.01586	0.01597
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01293	0.01266	0.01277
	(!D * SCD * SCE * Q * !Q_N)	0.00959	0.00923	0.00908
	(!D * SCD * SCE * Q * !Q_N)	0.00669	0.00635	0.00620
	(!D * !SCE * SET_B * !Q * Q_N)	0.00956	0.00920	0.00904
	(!D * !SCE * SET_B * !Q * Q_N)	0.00669	0.00631	0.00615
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01614	0.01586	0.01592
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01293	0.01266	0.01272
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00956	0.00920	0.00903
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00669	0.00631	0.00615
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01618	0.01590	0.01593
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01298	0.01270	0.01273

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01249	0.01209	0.01184
	(D * SCD * SCE * Q * !Q_N)	0.00959	0.00918	0.00893
	(D * !SCE * Q * !Q_N)	0.01249	0.01209	0.01184
	(D * !SCE * Q * !Q_N)	0.00959	0.00917	0.00893
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01241	0.01199	0.01174
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00949	0.00908	0.00883
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02433	0.02406	0.02431
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02121	0.02094	0.02119
	(!D * SCD * SCE * Q * !Q_N)	0.01249	0.01209	0.01184
	(!D * SCD * SCE * Q * !Q_N)	0.00959	0.00918	0.00893
	(!D * !SCE * SET_B * !Q * Q_N)	0.01241	0.01199	0.01174
	(!D * !SCE * SET_B * !Q * Q_N)	0.00949	0.00908	0.00883
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02433	0.02406	0.02432
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02121	0.02094	0.02119
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01241	0.01199	0.01174
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00949	0.00908	0.00883
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02440	0.02410	0.02432
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02128	0.02097	0.02119

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.00987	0.00959	0.00930
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01252	0.01223	0.01196
	(D * SCD * SCE * Q * !Q_N)	0.00554	0.00529	0.00515
	(D * SCD * SCE * Q * !Q_N)	0.00842	0.00817	0.00803
	(D * !SCE * SET_B * !Q * Q_N)	0.00985	0.00957	0.00928
	(D * !SCE * SET_B * !Q * Q_N)	0.01250	0.01221	0.01193
	(D * !SCE * Q * !Q_N)	0.00554	0.00529	0.00515
	(D * !SCE * Q * !Q_N)	0.00842	0.00817	0.00803
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01080	0.01055	0.01067
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01393	0.01368	0.01381
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00563	0.00537	0.00521
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00851	0.00825	0.00810
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00891	0.00868	0.00875
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01210	0.01187	0.01195
sky130_fd_sc_hs__sdfsbp_1	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.00990	0.00961	0.00933
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01253	0.01225	0.01197
	(!D * SCD * SCE * Q * !Q_N)	0.00554	0.00529	0.00515
	(!D * SCD * SCE * Q * !Q_N)	0.00842	0.00817	0.00803
	(!D * !SCE * SET_B * Q * !Q_N)	0.01078	0.01054	0.01066
	(!D * !SCE * SET_B * Q * !Q_N)	0.01390	0.01365	0.01378
	(!D * !SCE * SET_B * !Q * Q_N)	0.00563	0.00537	0.00521
	(!D * !SCE * SET_B * !Q * Q_N)	0.00851	0.00825	0.00810
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00891	0.00868	0.00875
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01210	0.01187	0.01195
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01080	0.01055	0.01068
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01392	0.01367	0.01382
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00563	0.00537	0.00521
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00851	0.00825	0.00809
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00891	0.00869	0.00877
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01210	0.01188	0.01197

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01180	0.01148	0.01117
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01458	0.01426	0.01396
	(D * SCD * SCE * Q * !Q_N)	0.00662	0.00634	0.00617
	(D * SCD * SCE * Q * !Q_N)	0.00953	0.00925	0.00909
	(D * !SCE * SET_B * !Q * Q_N)	0.01177	0.01146	0.01114
	(D * !SCE * SET_B * !Q * Q_N)	0.01455	0.01424	0.01394
	(D * !SCE * Q * !Q_N)	0.00662	0.00634	0.00617
	(D * !SCE * Q * !Q_N)	0.00953	0.00925	0.00909
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01354	0.01326	0.01332
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01660	0.01632	0.01639
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00683	0.00654	0.00634
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00974	0.00945	0.00926
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01148	0.01121	0.01130
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01461	0.01433	0.01443
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01182	0.01151	0.01119
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01459	0.01428	0.01397
	(!D * SCD * SCE * Q * !Q_N)	0.00662	0.00634	0.00617
	(!D * SCD * SCE * Q * !Q_N)	0.00953	0.00925	0.00909
	(!D * !SCE * SET_B * Q * !Q_N)	0.01353	0.01324	0.01331
	(!D * !SCE * SET_B * Q * !Q_N)	0.01657	0.01629	0.01636
	(!D * !SCE * SET_B * !Q * Q_N)	0.00683	0.00654	0.00634
	(!D * !SCE * SET_B * !Q * Q_N)	0.00974	0.00945	0.00926
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01149	0.01121	0.01130
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01462	0.01435	0.01443
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01354	0.01326	0.01332
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01659	0.01631	0.01637
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00683	0.00654	0.00634
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00974	0.00945	0.00926
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01149	0.01122	0.01130
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01462	0.01435	0.01443

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	SET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	1
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfstp_1	46.35360
sky130_fd_sc_hs__sdfstp_2	49.55040
sky130_fd_sc_hs__sdfstp_4	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	SET_B	CLK	Q
sky130_fd_sc_hs__sdfstp_1	0.00175	0.00193	0.00372	0.00308	0.00280	0.35703
sky130_fd_sc_hs__sdfstp_2	0.00175	0.00189	0.00371	0.00318	0.00280	0.71766
sky130_fd_sc_hs__sdfstp_4	0.00175	0.00193	0.00377	0.00319	0.00279	1.38599

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.00096	0.00128
sky130_fd_sc_hs__sdfstp_2	0.00000	0.00110	0.00143
sky130_fd_sc_hs__sdfstp_4	0.00000	0.00123	0.00163

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)	0.68098	1.69111	9.20645
	SET_B->Q (FR)	0.74944	2.07789	13.29930
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.56181	1.42218	9.12935
	SET_B->Q (FR)	0.86366	2.03514	13.52360
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.63244	1.37874	9.19728
	SET_B->Q (FR)	0.96403	2.02124	13.68130

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.56872	1.05351	3.45228
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.62714	1.10890	3.61009
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.63589	1.10216	3.66461

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)	-0.13642	-0.26299	-1.30885
	setup	CLK (R)	0.27790	0.35680	1.40018
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16007	-0.28650	-1.38686
	setup	CLK (R)	0.34780	0.41381	1.52549
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15721	-0.28826	-1.40179
	setup	CLK (R)	0.33277	0.40880	1.52903

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)	-0.14614	-0.34242	-3.49130
	setup	CLK (R)	1.05555	1.10896	4.42745
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13782	-0.32976	-3.34008
	setup	CLK (R)	1.23613	1.28597	4.61273
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15418	-0.34372	-3.44868
	setup	CLK (R)	1.24626	1.29994	4.64926

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)	-0.13642	-0.26299	-1.30885
	setup	CLK (R)	0.27790	0.35680	1.40018
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16007	-0.28650	-1.38686
	setup	CLK (R)	0.34780	0.41381	1.52549
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15721	-0.28826	-1.40179
	setup	CLK (R)	0.33277	0.40880	1.52903

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)	-0.14614	-0.34242	-3.49130
	setup	CLK (R)	1.05555	1.10896	4.42745
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.13782	-0.32976	-3.34008
	setup	CLK (R)	1.23613	1.28597	4.61273
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.15418	-0.34372	-3.44868
	setup	CLK (R)	1.24626	1.29994	4.64926

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)	-0.15699	-0.27398	-1.47034
	setup	CLK (R)	0.30307	0.36822	1.54861
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18239	-0.29613	-1.52073
	setup	CLK (R)	0.37424	0.42408	1.64375
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.17960	-0.29666	-1.53433
	setup	CLK (R)	0.35858	0.41743	1.64571

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)	-0.20199	-0.43411	-4.31747
	setup	CLK (R)	1.22543	1.31494	5.00708
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18751	-0.41237	-4.24241
	setup	CLK (R)	1.40558	1.49366	5.17650
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.20644	-0.43827	-4.31397
	setup	CLK (R)	1.41306	1.50391	5.20028

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)	-0.15699	-0.27398	-1.47034
	hold	CLK (R)	-0.15790	-0.27596	-1.47507
	setup	CLK (R)	0.30307	0.36822	1.54527
	setup	CLK (R)	0.29881	0.36653	1.54861
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.18239	-0.29613	-1.52073
	hold	CLK (R)	-0.18265	-0.29782	-1.52483
	setup	CLK (R)	0.37424	0.42408	1.63713
	setup	CLK (R)	0.37258	0.42337	1.64375
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.18084	-0.29666	-1.53433
	hold	CLK (R)	-0.17960	-0.29912	-1.53527
	setup	CLK (R)	0.35858	0.41676	1.64384
	setup	CLK (R)	0.35598	0.41743	1.64571

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)	-0.21765	-0.44932	-4.37901
	hold	CLK (R)	-0.20199	-0.43411	-4.31747
	setup	CLK (R)	1.20953	1.29940	5.00267
	setup	CLK (R)	1.22543	1.31494	5.00708
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.20010	-0.42998	-4.29181
	hold	CLK (R)	-0.18751	-0.41237	-4.24241
	setup	CLK (R)	1.39231	1.47760	5.17216
	setup	CLK (R)	1.40558	1.49366	5.17650
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.22013	-0.45314	-4.36455
	hold	CLK (R)	-0.20644	-0.43827	-4.31397
	setup	CLK (R)	1.40249	1.48671	5.19415
	setup	CLK (R)	1.41306	1.50391	5.20028

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)	-0.14211	-0.27142	-0.53855
	setup	CLK (R)	1.17668	1.11881	1.45814
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16317	-0.25519	-0.46092
	setup	CLK (R)	1.35868	1.29607	1.57799
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.16461	-0.28002	-0.49536
	setup	CLK (R)	1.36510	1.31084	1.58373

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)	-0.17666	-0.39984	-3.72595
	setup	CLK (R)	1.08774	1.17040	4.77228
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16524	-0.38591	-3.72088
	setup	CLK (R)	1.26567	1.34667	4.95130
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.18230	-0.40298	-3.72550
	setup	CLK (R)	1.27544	1.36106	4.97529

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)	-0.18062	-0.27142	-0.53855
	hold	CLK (R)	-0.14211	-0.27185	-1.36466
	setup	CLK (R)	1.17668	1.11881	0.97559
	setup	CLK (R)	0.28596	0.36740	1.45814
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.16615	-0.25519	-0.46092
	hold	CLK (R)	-0.16317	-0.29473	-1.43295
	setup	CLK (R)	1.35868	1.29607	1.07615
	setup	CLK (R)	0.35389	0.42307	1.57799
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.18560	-0.28002	-0.49536
	hold	CLK (R)	-0.16461	-0.29853	-1.44927
	setup	CLK (R)	1.36510	1.31084	1.08769
	setup	CLK (R)	0.33939	0.41703	1.58373

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)	-0.31870	-0.55709	-3.72595
	hold	CLK (R)	-0.17666	-0.39984	-4.10744
	setup	CLK (R)	0.45861	0.64669	3.76235
	setup	CLK (R)	1.08774	1.17040	4.77228
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.34081	-0.57849	-3.72088
	hold	CLK (R)	-0.16524	-0.38591	-4.03395
	setup	CLK (R)	0.53143	0.70142	3.78075
	setup	CLK (R)	1.26567	1.34667	4.95130
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.34318	-0.57855	-3.72550
	hold	CLK (R)	-0.18230	-0.40298	-4.11874
	setup	CLK (R)	0.51659	0.69344	3.78359
	setup	CLK (R)	1.27544	1.36106	4.97529

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)	-0.25907	-0.33531	-0.89481
	removal	CLK (R)	0.28656	0.35639	0.92610
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.33560	-0.40741	-0.99201
	removal	CLK (R)	0.35492	0.42150	1.13548
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.32346	-0.40280	-1.00422
	removal	CLK (R)	0.34170	0.41618	1.10774

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)	-0.25909	-0.33686	-0.89481
	recovery	CLK (R)	-0.25907	-0.33685	-0.89482
	recovery	CLK (R)	-0.26156	-0.33531	-0.89531
	removal	CLK (R)	0.28656	0.35639	0.92511
	removal	CLK (R)	0.28656	0.35639	0.92511
	removal	CLK (R)	0.28656	0.35639	0.92610
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.33561	-0.40741	-0.99201
	recovery	CLK (R)	-0.33560	-0.40741	-0.99201
	recovery	CLK (R)	-0.33697	-0.40741	-0.99250
	removal	CLK (R)	0.35225	0.42150	1.13548
	removal	CLK (R)	0.35225	0.42150	1.13548
	removal	CLK (R)	0.35492	0.42150	1.13450
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.32346	-0.40280	-1.00422
	recovery	CLK (R)	-0.32346	-0.40280	-1.00422
	recovery	CLK (R)	-0.32387	-0.40280	-1.00422
	removal	CLK (R)	0.34170	0.41618	1.10774
	removal	CLK (R)	0.34170	0.41618	1.10774
	removal	CLK (R)	0.34170	0.41618	1.10677

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 ()	0.57432	1.30370	16.50020
	min_pulse_width	SET_B ()	0.58797	1.36164	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.58213	1.27666	16.50020
	min_pulse_width	SET_B ()	0.69649	1.46206	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.59589	1.29211	16.50020
	min_pulse_width	SET_B ()	0.75384	1.51999	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 ()	0.42617	1.04492	16.50020
	min_pulse_width	CLK ()	0.20846	1.04492	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.32304	1.04492	16.50020
	min_pulse_width	CLK ()	0.24283	1.04492	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.37270	1.04492	16.50020
	min_pulse_width	CLK ()	0.23902	1.04492	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 ()	0.49110	1.04492	16.50020
	min_pulse_width	CLK ()	1.05552	1.19169	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.60505	1.07968	16.50020
	min_pulse_width	CLK ()	1.27929	1.38481	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.58525	1.07196	16.50020
	min_pulse_width	CLK ()	1.26098	1.37322	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	0.01761	0.01729	0.01707
	CLK	0.01490	0.01457	0.01439
	SET_B	0.01555	0.01558	0.01512
	SET_B	0.01844	0.01847	0.01801
sky130_fd_sc_hs__sdfstp_2	CLK	0.02180	0.02158	0.02136
	CLK	0.01909	0.01889	0.01872
	SET_B	0.02013	0.02043	0.01986
	SET_B	0.02308	0.02337	0.02286
sky130_fd_sc_hs__sdfstp_4	CLK	0.02591	0.02601	0.02598
	CLK	0.02325	0.02329	0.02349
	SET_B	0.02429	0.02485	0.02448
	SET_B	0.02730	0.02785	0.02752

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.01892	0.01867	0.01853
	CLK	0.01596	0.01572	0.01558
sky130_fd_sc_hs__sdfstp_2	CLK	0.02311	0.02308	0.02305
	CLK	0.02020	0.02020	0.02013
sky130_fd_sc_hs__sdfstp_4	CLK	0.02756	0.02794	0.02794
	CLK	0.02459	0.02501	0.02496

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00076	0.00078	0.00077
	(CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCE)	0.00276	0.00263	0.00257
	(CLK * !SCE)	0.00077	0.00063	0.00058
	(CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(CLK * !SCD * SCE)	-0.00080	-0.00082	-0.00082
	(!CLK * SCD * SCE)	0.00076	0.00077	0.00077
	(!CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK * !SCE * SET_B)	0.00700	0.00689	0.00676
	(!CLK * !SCE * SET_B)	0.00480	0.00470	0.00457
	(!CLK * !SCE * !SET_B * Q)	0.00558	0.00549	0.00541
	(!CLK * !SCE * !SET_B * Q)	0.00333	0.00325	0.00316
	(!CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00080	-0.00082	-0.00082
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00076	0.00077	0.00077
	(CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCE)	0.00273	0.00260	0.00254
	(CLK * !SCE)	0.00074	0.00060	0.00055
	(CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(CLK * !SCD * SCE)	-0.00080	-0.00083	-0.00083
	(!CLK * SCD * SCE)	0.00076	0.00077	0.00076
	(!CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK * !SCE * SET_B)	0.00798	0.00788	0.00774
	(!CLK * !SCE * SET_B)	0.00569	0.00559	0.00547
	(!CLK * !SCE * !SET_B * Q)	0.00647	0.00640	0.00630
	(!CLK * !SCE * !SET_B * Q)	0.00412	0.00405	0.00396
	(!CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00080	-0.00083	-0.00082

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00076	0.00077	0.00076
	(CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCE)	0.00283	0.00271	0.00265
	(CLK * !SCE)	0.00084	0.00070	0.00065
	(CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(CLK * !SCD * SCE)	-0.00080	-0.00082	-0.00082
	(!CLK * SCD * SCE)	0.00076	0.00077	0.00076
	(!CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK * !SCE * SET_B)	0.00791	0.00781	0.00768
	(!CLK * !SCE * SET_B)	0.00568	0.00559	0.00546
	(!CLK * !SCE * !SET_B * Q)	0.00643	0.00635	0.00626
	(!CLK * !SCE * !SET_B * Q)	0.00414	0.00407	0.00398
	(!CLK * !SCD * SCE)	0.00044	0.00044	0.00043
	(!CLK * !SCD * SCE)	-0.00080	-0.00082	-0.00082

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00074	-0.00075	-0.00077
	(CLK * SCD * SCE)	0.00047	0.00047	0.00046
	(CLK * !SCE)	0.00053	0.00043	0.00041
	(CLK * !SCE)	0.00253	0.00243	0.00241
	(CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * !SCD * SCE)	0.00083	0.00083	0.00082
	(!CLK * SCD * SCE)	-0.00074	-0.00075	-0.00077
	(!CLK * SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCE * SET_B)	0.00476	0.00462	0.00456
	(!CLK * !SCE * SET_B)	0.00695	0.00682	0.00676
	(!CLK * !SCE * !SET_B * Q)	0.00299	0.00287	0.00284
	(!CLK * !SCE * !SET_B * Q)	0.00524	0.00512	0.00509
	(!CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * !SCD * SCE)	0.00083	0.00083	0.00082
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00074	-0.00075	-0.00077
	(CLK * SCD * SCE)	0.00048	0.00047	0.00046
	(CLK * !SCE)	0.00056	0.00046	0.00044
	(CLK * !SCE)	0.00256	0.00247	0.00244
	(CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00042
	(CLK * !SCD * SCE)	0.00083	0.00083	0.00083
	(!CLK * SCD * SCE)	-0.00074	-0.00075	-0.00076
	(!CLK * SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCE * SET_B)	0.00552	0.00540	0.00532
	(!CLK * !SCE * SET_B)	0.00781	0.00769	0.00761
	(!CLK * !SCE * !SET_B * Q)	0.00368	0.00356	0.00352
	(!CLK * !SCE * !SET_B * Q)	0.00602	0.00590	0.00587
	(!CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * !SCD * SCE)	0.00083	0.00083	0.00082

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00074	-0.00075	-0.00076
	(CLK * SCD * SCE)	0.00048	0.00047	0.00046
	(CLK * !SCE)	0.00066	0.00056	0.00054
	(CLK * !SCE)	0.00266	0.00256	0.00254
	(CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(CLK * !SCD * SCE)	0.00083	0.00082	0.00082
	(!CLK * SCD * SCE)	-0.00074	-0.00075	-0.00076
	(!CLK * SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCE * SET_B)	0.00560	0.00548	0.00540
	(!CLK * !SCE * SET_B)	0.00782	0.00770	0.00763
	(!CLK * !SCE * !SET_B * Q)	0.00378	0.00366	0.00362
	(!CLK * !SCE * !SET_B * Q)	0.00607	0.00595	0.00591
	(!CLK * !SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * !SCD * SCE)	0.00083	0.00082	0.00082

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00371	0.00360	0.00353
	(CLK * D * SCE)	0.00100	0.00089	0.00082
	(CLK * !D * SCE)	0.00405	0.00396	0.00386
	(CLK * !D * SCE)	0.00131	0.00121	0.00112
	(!CLK * D * SCE * SET_B)	0.00784	0.00775	0.00762
	(!CLK * D * SCE * SET_B)	0.00494	0.00485	0.00473
	(!CLK * D * SCE * !SET_B * Q)	0.00643	0.00635	0.00627
	(!CLK * D * SCE * !SET_B * Q)	0.00347	0.00339	0.00331
	(!CLK * !D * SCE * SET_B)	0.00819	0.00811	0.00795
	(!CLK * !D * SCE * SET_B)	0.00525	0.00517	0.00503
	(!CLK * !D * SCE * !SET_B * Q)	0.00678	0.00670	0.00660
	(!CLK * !D * SCE * !SET_B * Q)	0.00378	0.00371	0.00361
	!SCE	0.00084	0.00085	0.00084
	!SCE	-0.00079	-0.00080	-0.00080
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00365	0.00355	0.00347
	(CLK * D * SCE)	0.00097	0.00086	0.00080
	(CLK * !D * SCE)	0.00400	0.00391	0.00381
	(CLK * !D * SCE)	0.00128	0.00118	0.00110
	(!CLK * D * SCE * SET_B)	0.00880	0.00871	0.00859
	(!CLK * D * SCE * SET_B)	0.00584	0.00576	0.00563
	(!CLK * D * SCE * !SET_B * Q)	0.00729	0.00723	0.00714
	(!CLK * D * SCE * !SET_B * Q)	0.00428	0.00420	0.00412
	(!CLK * !D * SCE * SET_B)	0.00915	0.00907	0.00892
	(!CLK * !D * SCE * SET_B)	0.00615	0.00607	0.00593
	(!CLK * !D * SCE * !SET_B * Q)	0.00764	0.00758	0.00747
	(!CLK * !D * SCE * !SET_B * Q)	0.00459	0.00452	0.00441
	!SCE	0.00082	0.00083	0.00082
	!SCE	-0.00079	-0.00080	-0.00080

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00378	0.00368	0.00360
	(CLK * D * SCE)	0.00107	0.00096	0.00089
	(CLK * !D * SCE)	0.00412	0.00404	0.00393
	(CLK * !D * SCE)	0.00138	0.00129	0.00119
	(!CLK * D * SCE * SET_B)	0.00875	0.00866	0.00854
	(!CLK * D * SCE * SET_B)	0.00582	0.00574	0.00561
	(!CLK * D * SCE * !SET_B * Q)	0.00727	0.00721	0.00712
	(!CLK * D * SCE * !SET_B * Q)	0.00429	0.00421	0.00413
	(!CLK * !D * SCE * SET_B)	0.00910	0.00902	0.00887
	(!CLK * !D * SCE * SET_B)	0.00613	0.00605	0.00591
	(!CLK * !D * SCE * !SET_B * Q)	0.00762	0.00755	0.00745
	(!CLK * !D * SCE * !SET_B * Q)	0.00459	0.00452	0.00442
	!SCE	0.00084	0.00085	0.00084
	!SCE	-0.00079	-0.00081	-0.00080

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00110	0.00099	0.00095
	(CLK * D * SCE)	0.00381	0.00370	0.00365
	(CLK * !D * SCE)	0.00085	0.00075	0.00073
	(CLK * !D * SCE)	0.00360	0.00349	0.00347
	(!CLK * D * SCE * SET_B)	0.00540	0.00528	0.00521
	(!CLK * D * SCE * SET_B)	0.00830	0.00819	0.00809
	(!CLK * D * SCE * !SET_B * Q)	0.00364	0.00352	0.00348
	(!CLK * D * SCE * !SET_B * Q)	0.00660	0.00649	0.00642
	(!CLK * !D * SCE * SET_B)	0.00516	0.00504	0.00499
	(!CLK * !D * SCE * SET_B)	0.00809	0.00799	0.00792
	(!CLK * !D * SCE * !SET_B * Q)	0.00340	0.00329	0.00326
	(!CLK * !D * SCE * !SET_B * Q)	0.00640	0.00629	0.00625
	!SCE	-0.00083	-0.00084	-0.00084
	!SCE	0.00081	0.00080	0.00080
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00118	0.00107	0.00103
	(CLK * D * SCE)	0.00386	0.00375	0.00370
	(CLK * !D * SCE)	0.00094	0.00083	0.00082
	(CLK * !D * SCE)	0.00365	0.00354	0.00352
	(!CLK * D * SCE * SET_B)	0.00620	0.00609	0.00601
	(!CLK * D * SCE * SET_B)	0.00917	0.00907	0.00896
	(!CLK * D * SCE * !SET_B * Q)	0.00436	0.00425	0.00420
	(!CLK * D * SCE * !SET_B * Q)	0.00739	0.00729	0.00721
	(!CLK * !D * SCE * SET_B)	0.00596	0.00586	0.00580
	(!CLK * !D * SCE * SET_B)	0.00896	0.00887	0.00879
	(!CLK * !D * SCE * !SET_B * Q)	0.00412	0.00402	0.00398
	(!CLK * !D * SCE * !SET_B * Q)	0.00718	0.00709	0.00703
	!SCE	-0.00081	-0.00082	-0.00082
	!SCE	0.00081	0.00081	0.00080

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00123	0.00112	0.00109
	(CLK * D * SCE)	0.00394	0.00383	0.00378
	(CLK * !D * SCE)	0.00099	0.00088	0.00086
	(CLK * !D * SCE)	0.00373	0.00362	0.00360
	(!CLK * D * SCE * SET_B)	0.00625	0.00613	0.00605
	(!CLK * D * SCE * SET_B)	0.00918	0.00908	0.00896
	(!CLK * D * SCE * !SET_B * Q)	0.00443	0.00432	0.00427
	(!CLK * D * SCE * !SET_B * Q)	0.00743	0.00732	0.00724
	(!CLK * !D * SCE * SET_B)	0.00600	0.00589	0.00583
	(!CLK * !D * SCE * SET_B)	0.00897	0.00888	0.00879
	(!CLK * !D * SCE * !SET_B * Q)	0.00419	0.00408	0.00405
	(!CLK * !D * SCE * !SET_B * Q)	0.00722	0.00712	0.00706
	!SCE	-0.00083	-0.00084	-0.00084
	!SCE	0.00081	0.00081	0.00080

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)**	0.00334	0.00316	0.00309
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00048	-0.00054
	(CLK * D * !SCD)	0.00516	0.00491	0.00475
	(CLK * D * !SCD)	0.00253	0.00225	0.00207
	(CLK * !D * SCD)	0.00590	0.00561	0.00545
	(CLK * !D * SCD)	0.00146	0.00115	0.00101
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00334	0.00316	0.00309
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00028	-0.00048	-0.00054
	(!CLK * D * !SCD * SET_B)	0.00924	0.00909	0.00893
	(!CLK * D * !SCD * SET_B)	0.00680	0.00663	0.00645
	(!CLK * D * !SCD * !SET_B * Q)	0.00748	0.00733	0.00718
	(!CLK * D * !SCD * !SET_B * Q)	0.00511	0.00492	0.00476
	(!CLK * !D * SCD * SET_B)	0.01013	0.00985	0.00963
	(!CLK * !D * SCD * SET_B)	0.00549	0.00521	0.00500
	(!CLK * !D * SCD * !SET_B * Q)	0.00872	0.00845	0.00827
	(!CLK * !D * SCD * !SET_B * Q)	0.00402	0.00375	0.00359
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00335	0.00318	0.00310
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00008	-0.00027	-0.00035

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00335	0.00317	0.00309
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00027	-0.00048	-0.00054
	(CLK * D * !SCD)	0.00523	0.00498	0.00481
	(CLK * D * !SCD)	0.00258	0.00232	0.00212
	(CLK * !D * SCD)	0.00588	0.00558	0.00541
	(CLK * !D * SCD)	0.00143	0.00112	0.00098
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00335	0.00317	0.00309
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00027	-0.00048	-0.00054
	(!CLK * D * !SCD * SET_B)	0.01003	0.00990	0.00974
	(!CLK * D * !SCD * SET_B)	0.00766	0.00750	0.00734
	(!CLK * D * !SCD * !SET_B * Q)	0.00818	0.00804	0.00791
	(!CLK * D * !SCD * !SET_B * Q)	0.00589	0.00572	0.00556
	(!CLK * !D * SCD * SET_B)	0.01112	0.01083	0.01061
	(!CLK * !D * SCD * SET_B)	0.00638	0.00610	0.00589
	(!CLK * !D * SCD * !SET_B * Q)	0.00961	0.00935	0.00917
	(!CLK * !D * SCD * !SET_B * Q)	0.00482	0.00455	0.00438
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00337	0.00319	0.00311
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00008	-0.00027	-0.00034

	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00338	0.00320	0.00312
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00049	-0.00055
	(CLK * D * !SCD)	0.00532	0.00506	0.00491
	(CLK * D * !SCD)	0.00265	0.00238	0.00219
	(CLK * !D * SCD)	0.00601	0.00572	0.00555
	(CLK * !D * SCD)	0.00152	0.00122	0.00107
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00338	0.00320	0.00312
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00028	-0.00049	-0.00055
sky130_fd_sc_hs__sdfstp_4	**(!CLK * D * !SCD * SET_B)**	0.01011	0.00997	0.00982
	(!CLK * D * !SCD * SET_B)	0.00766	0.00748	0.00733
	(!CLK * D * !SCD * !SET_B * Q)	0.00830	0.00815	0.00801
	(!CLK * D * !SCD * !SET_B * Q)	0.00591	0.00573	0.00558
	(!CLK * !D * SCD * SET_B)	0.01109	0.01079	0.01058
	(!CLK * !D * SCD * SET_B)	0.00637	0.00608	0.00587
	(!CLK * !D * SCD * !SET_B * Q)	0.00961	0.00934	0.00916
	(!CLK * !D * SCD * !SET_B * Q)	0.00483	0.00456	0.00440
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00339	0.00321	0.00313
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00009	-0.00028	-0.00036

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)**	-0.00011	-0.00023	-0.00025
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00352	0.00340	0.00337
	(CLK * D * !SCD)	0.00265	0.00248	0.00236
	(CLK * D * !SCD)	0.00532	0.00514	0.00502
	(CLK * !D * SCD)	0.00081	0.00060	0.00055
	(CLK * !D * SCD)	0.00524	0.00505	0.00499
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00011	-0.00023	-0.00025
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00351	0.00340	0.00337
	(!CLK * D * !SCD * SET_B)	0.00685	0.00672	0.00660
	(!CLK * D * !SCD * SET_B)	0.00932	0.00919	0.00908
	(!CLK * D * !SCD * !SET_B * Q)	0.00544	0.00531	0.00521
	(!CLK * D * !SCD * !SET_B * Q)	0.00785	0.00772	0.00762
	(!CLK * !D * SCD * SET_B)	0.00504	0.00479	0.00472
	(!CLK * !D * SCD * SET_B)	0.00968	0.00943	0.00934
	(!CLK * !D * SCD * !SET_B * Q)	0.00328	0.00304	0.00298
	(!CLK * !D * SCD * !SET_B * Q)	0.00797	0.00775	0.00768
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00008	-0.00005	-0.00008
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00351	0.00339	0.00337

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00012	-0.00023	-0.00026
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00352	0.00340	0.00337
	(CLK * D * !SCD)	0.00261	0.00244	0.00231
	(CLK * D * !SCD)	0.00529	0.00510	0.00499
	(CLK * !D * SCD)	0.00085	0.00063	0.00058
	(CLK * !D * SCD)	0.00528	0.00508	0.00502
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00011	-0.00023	-0.00026
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00352	0.00340	0.00337
	(!CLK * D * !SCD * SET_B)	0.00782	0.00769	0.00758
	(!CLK * D * !SCD * SET_B)	0.01021	0.01008	0.00996
	(!CLK * D * !SCD * !SET_B * Q)	0.00632	0.00619	0.00610
	(!CLK * D * !SCD * !SET_B * Q)	0.00865	0.00852	0.00843
	(!CLK * !D * SCD * SET_B)	0.00580	0.00556	0.00547
	(!CLK * !D * SCD * SET_B)	0.01054	0.01030	0.01021
	(!CLK * !D * SCD * !SET_B * Q)	0.00396	0.00372	0.00366
	(!CLK * !D * SCD * !SET_B * Q)	0.00875	0.00852	0.00845
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00007	-0.00006	-0.00009
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00351	0.00338	0.00337

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00015	-0.00026	-0.00029
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00353	0.00341	0.00337
	(CLK * D * !SCD)	0.00269	0.00251	0.00238
	(CLK * D * !SCD)	0.00539	0.00520	0.00509
	(CLK * !D * SCD)	0.00092	0.00070	0.00065
	(CLK * !D * SCD)	0.00539	0.00517	0.00513
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00014	-0.00027	-0.00029
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00353	0.00340	0.00338
	(!CLK * D * !SCD * SET_B)	0.00772	0.00760	0.00749
	(!CLK * D * !SCD * SET_B)	0.01020	0.01007	0.00995
	(!CLK * D * !SCD * !SET_B * Q)	0.00625	0.00612	0.00602
	(!CLK * D * !SCD * !SET_B * Q)	0.00867	0.00853	0.00845
	(!CLK * !D * SCD * SET_B)	0.00586	0.00561	0.00552
	(!CLK * !D * SCD * SET_B)	0.01056	0.01033	0.01023
	(!CLK * !D * SCD * !SET_B * Q)	0.00404	0.00380	0.00374
	(!CLK * !D * SCD * !SET_B * Q)	0.00881	0.00858	0.00850
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00005	-0.00009	-0.00012
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00352	0.00339	0.00337

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00153	0.00153	0.00153
	(CLK * Q)	-0.00142	-0.00142	-0.00142
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00167	0.00168	0.00167
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00128	-0.00128	-0.00128
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00305	0.00301	0.00298
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00002	-0.00005	-0.00007
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00171	0.00173	0.00171
	(CLK * Q)	-0.00138	-0.00139	-0.00138
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00188	0.00189	0.00188
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00121	-0.00122	-0.00121
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00323	0.00318	0.00316
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00004	-0.00002	-0.00004

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00158	0.00159	0.00158
	(CLK * Q)	-0.00146	-0.00146	-0.00145
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00174	0.00176	0.00174
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00129	-0.00130	-0.00129
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00313	0.00309	0.00306
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00000	-0.00006	-0.00008

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00152	-0.00153	-0.00153
	(CLK * Q)	0.00142	0.00143	0.00143
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00166	-0.00168	-0.00167
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00128	0.00129	0.00128
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00003	-0.00009	-0.00011
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00302	0.00297	0.00294

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00170	-0.00172	-0.00171
	(CLK * Q)	0.00138	0.00139	0.00138
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00186	-0.00189	-0.00188
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00121	0.00123	0.00122
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00007	-0.00014	-0.00016
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00312	0.00306	0.00304
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00157	-0.00159	-0.00158
	(CLK * Q)	0.00146	0.00147	0.00146
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00173	-0.00175	-0.00174
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00129	0.00130	0.00129
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00001	-0.00008	-0.00010
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00312	0.00306	0.00303

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)**	0.00965	0.00930	0.00916
	(D * SCD * SCE * Q)	0.00681	0.00647	0.00632
	(D * !SCE * Q)	0.00965	0.00930	0.00916
	(D * !SCE * Q)	0.00681	0.00647	0.00632
	(D * !SCD * SCE * SET_B * !Q)	0.00955	0.00919	0.00903
	(D * !SCD * SCE * SET_B * !Q)	0.00670	0.00635	0.00619
	(D * !SCD * SCE * !SET_B * Q)	0.01610	0.01586	0.01596
	(D * !SCD * SCE * !SET_B * Q)	0.01300	0.01277	0.01287
	(!D * SCD * SCE * Q)	0.00965	0.00930	0.00916
	(!D * SCD * SCE * Q)	0.00681	0.00647	0.00632
	(!D * !SCE * SET_B * !Q)	0.00955	0.00919	0.00903
	(!D * !SCE * SET_B * !Q)	0.00670	0.00635	0.00619
	(!D * !SCE * !SET_B * Q)	0.01610	0.01590	0.01592
	(!D * !SCE * !SET_B * Q)	0.01300	0.01281	0.01283
	(!D * !SCD * SCE * SET_B * !Q)	0.00955	0.00919	0.00902
	(!D * !SCD * SCE * SET_B * !Q)	0.00671	0.00635	0.00620
	(!D * !SCD * SCE * !SET_B * Q)	0.01615	0.01590	0.01595
	(!D * !SCD * SCE * !SET_B * Q)	0.01305	0.01283	0.01286

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01108	0.01073	0.01049
	(D * SCD * SCE * Q)	0.00827	0.00793	0.00768
	(D * !SCE * Q)	0.01108	0.01073	0.01049
	(D * !SCE * Q)	0.00827	0.00793	0.00768
	(D * !SCD * SCE * SET_B * !Q)	0.01133	0.01097	0.01071
	(D * !SCD * SCE * SET_B * !Q)	0.00850	0.00815	0.00790
	(D * !SCD * SCE * !SET_B * Q)	0.02208	0.02182	0.02199
	(D * !SCD * SCE * !SET_B * Q)	0.01895	0.01870	0.01886
	(!D * SCD * SCE * Q)	0.01108	0.01073	0.01049
	(!D * SCD * SCE * Q)	0.00827	0.00793	0.00768
	(!D * !SCE * SET_B * !Q)	0.01133	0.01097	0.01071
	(!D * !SCE * SET_B * !Q)	0.00850	0.00815	0.00790
	(!D * !SCE * !SET_B * Q)	0.02208	0.02182	0.02202
	(!D * !SCE * !SET_B * Q)	0.01895	0.01870	0.01889
	(!D * !SCD * SCE * SET_B * !Q)	0.01133	0.01097	0.01071
	(!D * !SCD * SCE * SET_B * !Q)	0.00850	0.00815	0.00789
	(!D * !SCD * SCE * !SET_B * Q)	0.02212	0.02185	0.02202
	(!D * !SCD * SCE * !SET_B * Q)	0.01899	0.01873	0.01889

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01094	0.01060	0.01036
	(D * SCD * SCE * Q)	0.00812	0.00779	0.00755
	(D * !SCE * Q)	0.01094	0.01060	0.01036
	(D * !SCE * Q)	0.00812	0.00779	0.00755
	(D * !SCD * SCE * SET_B * !Q)	0.01123	0.01087	0.01063
	(D * !SCD * SCE * SET_B * !Q)	0.00840	0.00806	0.00781
	(D * !SCD * SCE * !SET_B * Q)	0.02153	0.02128	0.02150
	(D * !SCD * SCE * !SET_B * Q)	0.01845	0.01821	0.01842
	(!D * SCD * SCE * Q)	0.01094	0.01060	0.01036
	(!D * SCD * SCE * Q)	0.00812	0.00779	0.00755
	(!D * !SCE * SET_B * !Q)	0.01123	0.01088	0.01063
	(!D * !SCE * SET_B * !Q)	0.00840	0.00806	0.00781
	(!D * !SCE * !SET_B * Q)	0.02153	0.02128	0.02151
	(!D * !SCE * !SET_B * Q)	0.01845	0.01821	0.01842
	(!D * !SCD * SCE * SET_B * !Q)	0.01123	0.01087	0.01063
	(!D * !SCD * SCE * SET_B * !Q)	0.00840	0.00806	0.00781
	(!D * !SCD * SCE * !SET_B * Q)	0.02159	0.02131	0.02150
	(!D * !SCD * SCE * !SET_B * Q)	0.01851	0.01824	0.01841

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)**	0.00965	0.00936	0.00908
	(D * SCD * SCE * SET_B * !Q)	0.01229	0.01201	0.01173
	(D * SCD * SCE * Q)	0.00551	0.00526	0.00512
	(D * SCD * SCE * Q)	0.00834	0.00809	0.00796
	(D * !SCE * SET_B * !Q)	0.00963	0.00934	0.00906
	(D * !SCE * SET_B * !Q)	0.01227	0.01199	0.01171
	(D * !SCE * Q)	0.00551	0.00526	0.00512
	(D * !SCE * Q)	0.00834	0.00809	0.00796
	(D * !SCD * SCE * SET_B * Q)	0.01087	0.01061	0.01072
	(D * !SCD * SCE * SET_B * Q)	0.01391	0.01365	0.01376
	(D * !SCD * SCE * SET_B * !Q)	0.00569	0.00542	0.00526
	(D * !SCD * SCE * SET_B * !Q)	0.00851	0.00825	0.00810
	(D * !SCD * SCE * !SET_B * Q)	0.00911	0.00885	0.00892
	(D * !SCD * SCE * !SET_B * Q)	0.01220	0.01193	0.01201
	(!D * SCD * SCE * SET_B * !Q)	0.00967	0.00939	0.00911
	(!D * SCD * SCE * SET_B * !Q)	0.01231	0.01202	0.01175
	(!D * SCD * SCE * Q)	0.00551	0.00526	0.00512
	(!D * SCD * SCE * Q)	0.00834	0.00809	0.00796
	(!D * !SCE * SET_B * Q)	0.01085	0.01060	0.01070
	(!D * !SCE * SET_B * Q)	0.01387	0.01362	0.01373
	(!D * !SCE * SET_B * !Q)	0.00569	0.00542	0.00526
	(!D * !SCE * SET_B * !Q)	0.00851	0.00825	0.00810
	(!D * !SCE * !SET_B * Q)	0.00912	0.00885	0.00892
	(!D * !SCE * !SET_B * Q)	0.01220	0.01193	0.01201
	(!D * !SCD * SCE * SET_B * Q)	0.01086	0.01061	0.01073
	(!D * !SCD * SCE * SET_B * Q)	0.01389	0.01364	0.01377
	(!D * !SCD * SCE * SET_B * !Q)	0.00569	0.00542	0.00526
	(!D * !SCD * SCE * SET_B * !Q)	0.00852	0.00825	0.00809
	(!D * !SCD * SCE * !SET_B * Q)	0.00912	0.00886	0.00894
	(!D * !SCD * SCE * !SET_B * Q)	0.01220	0.01194	0.01203

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01136	0.01108	0.01081
	(D * SCD * SCE * SET_B * !Q)	0.01388	0.01360	0.01335
	(D * SCD * SCE * Q)	0.00639	0.00614	0.00599
	(D * SCD * SCE * Q)	0.00920	0.00894	0.00881
	(D * !SCE * SET_B * !Q)	0.01134	0.01105	0.01079
	(D * !SCE * SET_B * !Q)	0.01386	0.01358	0.01333
	(D * !SCE * Q)	0.00639	0.00614	0.00599
	(D * !SCE * Q)	0.00920	0.00894	0.00881
	(D * !SCD * SCE * SET_B * Q)	0.01270	0.01246	0.01260
	(D * !SCD * SCE * SET_B * Q)	0.01577	0.01553	0.01568
	(D * !SCD * SCE * SET_B * !Q)	0.00627	0.00601	0.00586
	(D * !SCD * SCE * SET_B * !Q)	0.00909	0.00883	0.00868
	(D * !SCD * SCE * !SET_B * Q)	0.01084	0.01058	0.01071
	(D * !SCD * SCE * !SET_B * Q)	0.01395	0.01370	0.01384
	(!D * SCD * SCE * SET_B * !Q)	0.01138	0.01110	0.01084
	(!D * SCD * SCE * SET_B * !Q)	0.01390	0.01362	0.01336
	(!D * SCD * SCE * Q)	0.00639	0.00614	0.00599
	(!D * SCD * SCE * Q)	0.00920	0.00894	0.00881
	(!D * !SCE * SET_B * Q)	0.01268	0.01244	0.01258
	(!D * !SCE * SET_B * Q)	0.01574	0.01550	0.01564
	(!D * !SCE * SET_B * !Q)	0.00627	0.00601	0.00586
	(!D * !SCE * SET_B * !Q)	0.00909	0.00883	0.00868
	(!D * !SCE * !SET_B * Q)	0.01086	0.01060	0.01071
	(!D * !SCE * !SET_B * Q)	0.01399	0.01372	0.01384
	(!D * !SCD * SCE * SET_B * Q)	0.01269	0.01246	0.01260
	(!D * !SCD * SCE * SET_B * Q)	0.01576	0.01552	0.01568
	(!D * !SCD * SCE * SET_B * !Q)	0.00627	0.00601	0.00586
	(!D * !SCD * SCE * SET_B * !Q)	0.00909	0.00883	0.00868
	(!D * !SCD * SCE * !SET_B * Q)	0.01087	0.01060	0.01071
	(!D * !SCD * SCE * !SET_B * Q)	0.01400	0.01373	0.01385

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01107	0.01079	0.01053
	(D * SCD * SCE * SET_B * !Q)	0.01366	0.01338	0.01313
	(D * SCD * SCE * Q)	0.00626	0.00601	0.00587
	(D * SCD * SCE * Q)	0.00907	0.00882	0.00869
	(D * !SCE * SET_B * !Q)	0.01105	0.01077	0.01051
	(D * !SCE * SET_B * !Q)	0.01364	0.01336	0.01311
	(D * !SCE * Q)	0.00626	0.00601	0.00587
	(D * !SCE * Q)	0.00907	0.00882	0.00869
	(D * !SCD * SCE * SET_B * Q)	0.01243	0.01220	0.01232
	(D * !SCD * SCE * SET_B * Q)	0.01546	0.01523	0.01536
	(D * !SCD * SCE * SET_B * !Q)	0.00610	0.00584	0.00568
	(D * !SCD * SCE * SET_B * !Q)	0.00892	0.00866	0.00850
	(D * !SCD * SCE * !SET_B * Q)	0.01057	0.01034	0.01045
	(D * !SCD * SCE * !SET_B * Q)	0.01365	0.01342	0.01353
	(!D * SCD * SCE * SET_B * !Q)	0.01110	0.01082	0.01056
	(!D * SCD * SCE * SET_B * !Q)	0.01368	0.01340	0.01315
	(!D * SCD * SCE * Q)	0.00626	0.00601	0.00587
	(!D * SCD * SCE * Q)	0.00907	0.00882	0.00869
	(!D * !SCE * SET_B * Q)	0.01241	0.01219	0.01230
	(!D * !SCE * SET_B * Q)	0.01543	0.01520	0.01533
	(!D * !SCE * SET_B * !Q)	0.00610	0.00584	0.00568
	(!D * !SCE * SET_B * !Q)	0.00892	0.00866	0.00850
	(!D * !SCE * !SET_B * Q)	0.01058	0.01035	0.01045
	(!D * !SCE * !SET_B * Q)	0.01366	0.01343	0.01353
	(!D * !SCD * SCE * SET_B * Q)	0.01244	0.01220	0.01232
	(!D * !SCD * SCE * SET_B * Q)	0.01546	0.01522	0.01534
	(!D * !SCD * SCE * SET_B * !Q)	0.00610	0.00584	0.00568
	(!D * !SCD * SCE * SET_B * !Q)	0.00892	0.00866	0.00850
	(!D * !SCD * SCE * !SET_B * Q)	0.01058	0.01036	0.01046
	(!D * !SCD * SCE * !SET_B * Q)	0.01366	0.01344	0.01355

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT	
D	SCD	SCE	CLK	Q	Q_N
0	0	x	R	0	1
0	1	0	R	0	1
x	1	1	R	1	0
1	x	0	R	1	0
1	0	1	R	0	1
x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxbp_1	41.55840
sky130_fd_sc_hs__sdfxbp_2	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sdfxbp_1	0.00176	0.00175	0.00378	0.00280	0.36484	0.35394
sky130_fd_sc_hs__sdfxbp_2	0.00174	0.00172	0.00383	0.00279	0.71981	0.71832

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	0.00095	0.00108
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.00112	0.00127

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)	0.56373	1.56325	9.06180
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.54610	1.39587	9.02558

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.60913	1.12447	3.51821
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.66642	1.17909	3.61491

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)	0.72872	1.72310	9.17520
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.83920	1.66388	9.33052

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)	0.65414	1.12941	3.47048
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.70946	1.16907	3.61200

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)	-0.10522	-0.22454	-1.09013
	setup	CLK (R)	0.31612	0.35567	1.27549
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10751	-0.22315	-1.08206
	setup	CLK (R)	0.31256	0.35406	1.27286

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)	-0.13761	-0.34773	-3.55525
	setup	CLK (R)	0.90576	0.98028	4.30875
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13939	-0.34331	-3.55588
	setup	CLK (R)	0.92239	0.99926	4.32913

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)	-0.10522	-0.22454	-1.09013
	setup	CLK (R)	0.31612	0.35567	1.27549
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10751	-0.22315	-1.08206
	setup	CLK (R)	0.31256	0.35406	1.27286

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)	-0.13761	-0.34773	-3.55525
	setup	CLK (R)	0.90576	0.98028	4.30875
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.13939	-0.34331	-3.55588
	setup	CLK (R)	0.92239	0.99926	4.32913

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)	-0.12828	-0.23653	-1.30570
	setup	CLK (R)	0.34492	0.37440	1.45968
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12579	-0.23475	-1.28937
	setup	CLK (R)	0.33799	0.36919	1.45050

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)	-0.20486	-0.44036	-4.30633
	setup	CLK (R)	1.07998	1.19760	4.88658
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.20034	-0.43704	-4.30981
	setup	CLK (R)	1.09558	1.21056	4.89735

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)	-0.12828	-0.23653	-1.30570
	hold	CLK (R)	-0.13079	-0.23820	-1.30863
	setup	CLK (R)	0.34492	0.37378	1.45853
	setup	CLK (R)	0.34252	0.37440	1.45968
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.12579	-0.23475	-1.28937
	hold	CLK (R)	-0.12705	-0.23706	-1.29311
	setup	CLK (R)	0.33799	0.36898	1.44690
	setup	CLK (R)	0.33721	0.36919	1.45050

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)	-0.22236	-0.45321	-4.38065
	hold	CLK (R)	-0.20486	-0.44036	-4.30633
	setup	CLK (R)	1.07046	1.18276	4.88658
	setup	CLK (R)	1.07998	1.19760	4.88451
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.21803	-0.45495	-4.38444
	hold	CLK (R)	-0.20034	-0.43704	-4.30981
	setup	CLK (R)	1.08321	1.19827	4.89459
	setup	CLK (R)	1.09558	1.21056	4.89735

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)	-0.11234	-0.23191	-0.52802
	setup	CLK (R)	1.02987	0.99869	1.34403
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.11461	-0.23334	-0.54148
	setup	CLK (R)	1.04989	1.01932	1.33823

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)	-0.17900	-0.40753	-3.62964
	setup	CLK (R)	0.94352	1.04956	4.64804
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.18173	-0.40830	-3.64212
	setup	CLK (R)	0.96304	1.07030	4.66689

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)	-0.17322	-0.27634	-0.52802
	hold	CLK (R)	-0.11234	-0.23191	-1.16406
	setup	CLK (R)	1.02987	0.99869	0.88673
	setup	CLK (R)	0.32865	0.37150	1.34403
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.17776	-0.27893	-0.54148
	hold	CLK (R)	-0.11461	-0.23334	-1.15107
	setup	CLK (R)	1.04989	1.01932	0.90671
	setup	CLK (R)	0.32461	0.36733	1.33823

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)	-0.28650	-0.52407	-3.62964
	hold	CLK (R)	-0.17900	-0.40753	-4.11192
	setup	CLK (R)	0.49603	0.64449	3.71871
	setup	CLK (R)	0.94352	1.04956	4.64804
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.29236	-0.52697	-3.64212
	hold	CLK (R)	-0.18173	-0.40830	-4.12297
	setup	CLK (R)	0.49945	0.64923	3.73277
	setup	CLK (R)	0.96304	1.07030	4.66689

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 ()	0.29249	1.04492	16.50020
	min_pulse_width	CLK ()	0.18936	1.04492	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.29631	1.04492	16.50020
	min_pulse_width	CLK ()	0.19700	1.04492	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 ()	0.52548	1.04492	16.50020
	min_pulse_width	CLK ()	0.85819	1.07968	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.53311	1.04492	16.50020
	min_pulse_width	CLK ()	0.87524	1.09127	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	0.00977	0.00966	0.00958
	CLK	0.00835	0.00827	0.00817
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01175	0.01186	0.01181
	CLK	0.01032	0.01044	0.01040

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00997	0.00994	0.00978
	CLK	0.00855	0.00852	0.00836
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01187	0.01204	0.01185
	CLK	0.01045	0.01062	0.01044

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00998	0.00994	0.01000
	CLK	0.00856	0.00852	0.00859
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01188	0.01204	0.01213
	CLK	0.01046	0.01063	0.01074

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.00976	0.00967	0.00936
	CLK	0.00834	0.00826	0.00794
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01174	0.01186	0.01154
	CLK	0.01032	0.01044	0.01012

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00083	0.00084	0.00083
	(CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCE)	0.00280	0.00268	0.00262
	(CLK * !SCE)	0.00071	0.00058	0.00052
	(CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(CLK * !SCD * SCE)	-0.00079	-0.00081	-0.00081
	(!CLK * SCD * SCE)	0.00083	0.00084	0.00083
	(!CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00653	0.00642	0.00629
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00443	0.00432	0.00419
	(!CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(!CLK * !SCD * SCE)	-0.00079	-0.00081	-0.00081
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00083	0.00085	0.00084
	(CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCE)	0.00275	0.00263	0.00257
	(CLK * !SCE)	0.00068	0.00054	0.00049
	(CLK * !SCD * SCE)	0.00053	0.00053	0.00052
	(CLK * !SCD * SCE)	-0.00077	-0.00079	-0.00080
	(!CLK * SCD * SCE)	0.00083	0.00085	0.00084
	(!CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00657	0.00645	0.00633
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00448	0.00438	0.00425
	(!CLK * !SCD * SCE)	0.00053	0.00053	0.00052
	(!CLK * !SCD * SCE)	-0.00077	-0.00079	-0.00080

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00080	-0.00081	-0.00083
	(CLK * SCD * SCE)	0.00047	0.00047	0.00046
	(CLK * !SCE)	0.00069	0.00059	0.00057
	(CLK * !SCE)	0.00279	0.00270	0.00267
	(CLK * !SCD * SCE)	-0.00050	-0.00050	-0.00049
	(CLK * !SCD * SCE)	0.00082	0.00082	0.00081
	(!CLK * SCD * SCE)	-0.00080	-0.00081	-0.00083
	(!CLK * SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00474	0.00461	0.00453
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00685	0.00671	0.00663
	(!CLK * !SCD * SCE)	-0.00050	-0.00050	-0.00050
	(!CLK * !SCD * SCE)	0.00082	0.00082	0.00081
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00081	-0.00082	-0.00084
	(CLK * SCD * SCE)	0.00046	0.00046	0.00045
	(CLK * !SCE)	0.00078	0.00068	0.00066
	(CLK * !SCE)	0.00285	0.00276	0.00273
	(CLK * !SCD * SCE)	-0.00052	-0.00052	-0.00051
	(CLK * !SCD * SCE)	0.00080	0.00080	0.00080
	(!CLK * SCD * SCE)	-0.00081	-0.00082	-0.00084
	(!CLK * SCD * SCE)	0.00046	0.00046	0.00045
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00475	0.00462	0.00454
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00683	0.00670	0.00662
	(!CLK * !SCD * SCE)	-0.00052	-0.00052	-0.00051
	(!CLK * !SCD * SCE)	0.00080	0.00080	0.00080

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00367	0.00358	0.00350
	(CLK * D * SCE)	0.00110	0.00100	0.00094
	(CLK * !D * SCE)	0.00402	0.00394	0.00384
	(CLK * !D * SCE)	0.00141	0.00132	0.00124
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00739	0.00730	0.00717
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00482	0.00473	0.00461
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00774	0.00765	0.00751
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00513	0.00505	0.00490
	!SCE	0.00067	0.00067	0.00066
	!SCE	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00360	0.00351	0.00344
	(CLK * D * SCE)	0.00107	0.00098	0.00091
	(CLK * !D * SCE)	0.00395	0.00387	0.00377
	(CLK * !D * SCE)	0.00138	0.00130	0.00121
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00741	0.00733	0.00720
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00489	0.00480	0.00467
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00776	0.00768	0.00754
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00520	0.00511	0.00497
	!SCE	0.00064	0.00064	0.00064
	!SCE	-0.00080	-0.00082	-0.00081

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00134	0.00123	0.00120
	(CLK * D * SCE)	0.00391	0.00381	0.00376
	(CLK * !D * SCE)	0.00110	0.00100	0.00099
	(CLK * !D * SCE)	0.00370	0.00360	0.00358
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00536	0.00525	0.00518
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00794	0.00784	0.00774
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00512	0.00502	0.00496
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00773	0.00764	0.00756
	!SCE	-0.00066	-0.00067	-0.00066
	!SCE	0.00081	0.00081	0.00080
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00141	0.00131	0.00128
	(CLK * D * SCE)	0.00395	0.00385	0.00380
	(CLK * !D * SCE)	0.00117	0.00107	0.00106
	(CLK * !D * SCE)	0.00374	0.00364	0.00362
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00536	0.00525	0.00518
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00789	0.00780	0.00770
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00512	0.00502	0.00496
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00769	0.00760	0.00752
	!SCE	-0.00063	-0.00064	-0.00064
	!SCE	0.00082	0.00082	0.00081

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)**	0.00354	0.00336	0.00328
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00024	-0.00045	-0.00052
	(CLK * D * !SCD)	0.00538	0.00515	0.00500
	(CLK * D * !SCD)	0.00262	0.00237	0.00219
	(CLK * !D * SCD)	0.00621	0.00591	0.00575
	(CLK * !D * SCD)	0.00156	0.00124	0.00110
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00354	0.00336	0.00328
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00024	-0.00045	-0.00052
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00931	0.00916	0.00901
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00655	0.00636	0.00620
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00993	0.00963	0.00941
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00528	0.00497	0.00476
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00346	0.00328	0.00320
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00014	-0.00034	-0.00041

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00369	0.00351	0.00342
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00018	-0.00039	-0.00047
	(CLK * D * !SCD)	0.00560	0.00537	0.00520
	(CLK * D * !SCD)	0.00273	0.00247	0.00229
	(CLK * !D * SCD)	0.00631	0.00602	0.00585
	(CLK * !D * SCD)	0.00160	0.00128	0.00113
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00369	0.00351	0.00342
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00018	-0.00039	-0.00047
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00944	0.00930	0.00914
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00657	0.00639	0.00622
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01013	0.00983	0.00961
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00541	0.00510	0.00489
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00361	0.00342	0.00333
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00010	-0.00029	-0.00036

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)**	-0.00025	-0.00037	-0.00041
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00353	0.00342	0.00338
	(CLK * D * !SCD)	0.00255	0.00239	0.00226
	(CLK * D * !SCD)	0.00533	0.00516	0.00506
	(CLK * !D * SCD)	0.00094	0.00071	0.00065
	(CLK * !D * SCD)	0.00558	0.00537	0.00531
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00025	-0.00037	-0.00041
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00354	0.00342	0.00339
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00625	0.00612	0.00599
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00903	0.00891	0.00878
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00499	0.00473	0.00461
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00964	0.00939	0.00928
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00002	-0.00011	-0.00015
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00363	0.00350	0.00347

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00028	-0.00041	-0.00045
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00359	0.00348	0.00344
	(CLK * D * !SCD)	0.00248	0.00232	0.00219
	(CLK * D * !SCD)	0.00537	0.00521	0.00509
	(CLK * !D * SCD)	0.00100	0.00076	0.00070
	(CLK * !D * SCD)	0.00571	0.00548	0.00543
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00028	-0.00041	-0.00045
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00360	0.00347	0.00344
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00626	0.00614	0.00600
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00915	0.00903	0.00891
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00497	0.00472	0.00461
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00969	0.00943	0.00931
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00001	-0.00013	-0.00017
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00370	0.00357	0.00353

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)	0.00901	0.00864	0.00849
	(D * SCD * SCE * Q * !Q_N)	0.00616	0.00579	0.00565
	(D * !SCE * Q * !Q_N)	0.00900	0.00864	0.00849
	(D * !SCE * Q * !Q_N)	0.00616	0.00579	0.00565
	(D * !SCD * SCE * !Q * Q_N)	0.00891	0.00854	0.00839
	(D * !SCD * SCE * !Q * Q_N)	0.00607	0.00569	0.00554
	(!D * SCD * SCE * Q * !Q_N)	0.00901	0.00864	0.00849
	(!D * SCD * SCE * Q * !Q_N)	0.00616	0.00579	0.00565
	(!D * !SCE * !Q * Q_N)	0.00891	0.00854	0.00839
	(!D * !SCE * !Q * Q_N)	0.00607	0.00569	0.00554
	(!D * !SCD * SCE * !Q * Q_N)	0.00891	0.00854	0.00839
	(!D * !SCD * SCE * !Q * Q_N)	0.00607	0.00569	0.00554
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.00921	0.00885	0.00869
	(D * SCD * SCE * Q * !Q_N)	0.00636	0.00600	0.00584
	(D * !SCE * Q * !Q_N)	0.00920	0.00885	0.00868
	(D * !SCE * Q * !Q_N)	0.00636	0.00600	0.00584
	(D * !SCD * SCE * !Q * Q_N)	0.00913	0.00876	0.00860
	(D * !SCD * SCE * !Q * Q_N)	0.00628	0.00592	0.00575
	(!D * SCD * SCE * Q * !Q_N)	0.00921	0.00885	0.00868
	(!D * SCD * SCE * Q * !Q_N)	0.00636	0.00600	0.00584
	(!D * !SCE * !Q * Q_N)	0.00913	0.00876	0.00860
	(!D * !SCE * !Q * Q_N)	0.00628	0.00591	0.00576
	(!D * !SCD * SCE * !Q * Q_N)	0.00913	0.00876	0.00860
	(!D * !SCD * SCE * !Q * Q_N)	0.00628	0.00592	0.00576

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)**	0.00512	0.00484	0.00469
	(D * SCD * SCE * Q * !Q_N)	0.00798	0.00768	0.00753
	(D * SCD * SCE * !Q * Q_N)	0.00876	0.00844	0.00812
	(D * SCD * SCE * !Q * Q_N)	0.01162	0.01128	0.01098
	(D * !SCE * Q * !Q_N)	0.00512	0.00484	0.00469
	(D * !SCE * Q * !Q_N)	0.00798	0.00768	0.00754
	(D * !SCE * !Q * Q_N)	0.00874	0.00841	0.00810
	(D * !SCE * !Q * Q_N)	0.01159	0.01126	0.01095
	(D * !SCD * SCE * Q * !Q_N)	0.01000	0.00972	0.00982
	(D * !SCD * SCE * Q * !Q_N)	0.01287	0.01257	0.01267
	(D * !SCD * SCE * !Q * Q_N)	0.00518	0.00489	0.00473
	(D * !SCD * SCE * !Q * Q_N)	0.00801	0.00773	0.00758
	(!D * SCD * SCE * Q * !Q_N)	0.00512	0.00484	0.00469
	(!D * SCD * SCE * Q * !Q_N)	0.00798	0.00768	0.00754
	(!D * SCD * SCE * !Q * Q_N)	0.00879	0.00847	0.00815
	(!D * SCD * SCE * !Q * Q_N)	0.01163	0.01130	0.01099
	(!D * !SCE * Q * !Q_N)	0.01001	0.00970	0.00981
	(!D * !SCE * Q * !Q_N)	0.01287	0.01254	0.01264
	(!D * !SCE * !Q * Q_N)	0.00517	0.00489	0.00473
	(!D * !SCE * !Q * Q_N)	0.00803	0.00773	0.00757
	(!D * !SCD * SCE * Q * !Q_N)	0.01001	0.00971	0.00983
	(!D * !SCD * SCE * Q * !Q_N)	0.01287	0.01256	0.01269
	(!D * !SCD * SCE * !Q * Q_N)	0.00517	0.00489	0.00473
	(!D * !SCD * SCE * !Q * Q_N)	0.00803	0.00773	0.00758

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00520	0.00492	0.00477
	(D * SCD * SCE * Q * !Q_N)	0.00804	0.00776	0.00762
	(D * SCD * SCE * !Q * Q_N)	0.00893	0.00860	0.00828
	(D * SCD * SCE * !Q * Q_N)	0.01176	0.01144	0.01113
	(D * !SCE * Q * !Q_N)	0.00520	0.00492	0.00477
	(D * !SCE * Q * !Q_N)	0.00804	0.00776	0.00762
	(D * !SCE * !Q * Q_N)	0.00890	0.00858	0.00826
	(D * !SCE * !Q * Q_N)	0.01174	0.01142	0.01111
	(D * !SCD * SCE * Q * !Q_N)	0.01003	0.00972	0.00979
	(D * !SCD * SCE * Q * !Q_N)	0.01288	0.01257	0.01265
	(D * !SCD * SCE * !Q * Q_N)	0.00524	0.00495	0.00480
	(D * !SCD * SCE * !Q * Q_N)	0.00808	0.00779	0.00765
	(!D * SCD * SCE * Q * !Q_N)	0.00520	0.00492	0.00477
	(!D * SCD * SCE * Q * !Q_N)	0.00804	0.00776	0.00762
	(!D * SCD * SCE * !Q * Q_N)	0.00895	0.00863	0.00831
	(!D * SCD * SCE * !Q * Q_N)	0.01178	0.01146	0.01115
	(!D * !SCE * Q * !Q_N)	0.00999	0.00970	0.00977
	(!D * !SCE * Q * !Q_N)	0.01282	0.01254	0.01262
	(!D * !SCE * !Q * Q_N)	0.00524	0.00495	0.00480
	(!D * !SCE * !Q * Q_N)	0.00807	0.00779	0.00765
	(!D * !SCD * SCE * Q * !Q_N)	0.01004	0.00971	0.00983
	(!D * !SCD * SCE * Q * !Q_N)	0.01288	0.01256	0.01268
	(!D * !SCD * SCE * !Q * Q_N)	0.00524	0.00495	0.00480
	(!D * !SCD * SCE * !Q * Q_N)	0.00808	0.00779	0.00765

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT				OUTPUT
D	SCD	SCE	CLK	Q
0	0	x	R	0
0	1	0	R	0
x	1	1	R	1
1	x	0	R	1
1	0	1	R	0
x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxtp_1	36.76320
sky130_fd_sc_hs__sdfxtp_2	39.96000
sky130_fd_sc_hs__sdfxtp_4	41.55840

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	D	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sdfxtp_1	0.00178	0.00185	0.00393	0.00277	0.36178
sky130_fd_sc_hs__sdfxtp_2	0.00181	0.00181	0.00379	0.00280	0.71803
sky130_fd_sc_hs__sdfxtp_4	0.00178	0.00179	0.00392	0.00278	1.38058

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.00081	0.00098
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.00090	0.00108
sky130_fd_sc_hs__sdfxtp_4	0.00000	0.00104	0.00127

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)**	0.52971	1.53026	9.00379
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.53085	1.38278	9.02488
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.64159	1.37461	9.14737

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.57441	1.06884	3.44279
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.60710	1.09512	3.53396
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.60252	1.06061	3.53763

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)	-0.10507	-0.22761	-1.10430
	setup	CLK (R)	0.31105	0.35879	1.30416
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10979	-0.23095	-1.12058
	setup	CLK (R)	0.33288	0.37146	1.32610
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10335	-0.22373	-1.09227
	setup	CLK (R)	0.31644	0.35952	1.27119

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)	-0.14322	-0.34966	-3.58695
	setup	CLK (R)	0.93661	1.01440	4.35950
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14906	-0.35725	-3.65041
	setup	CLK (R)	0.99290	1.06922	4.42495
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14980	-0.35841	-3.63681
	setup	CLK (R)	0.92530	1.00201	4.33278

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)	-0.10507	-0.22761	-1.10430
	setup	CLK (R)	0.31105	0.35879	1.30416
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10979	-0.23095	-1.12058
	setup	CLK (R)	0.33288	0.37146	1.32610
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10335	-0.22373	-1.09227
	setup	CLK (R)	0.31644	0.35952	1.27119

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)	-0.14322	-0.34966	-3.58695
	setup	CLK (R)	0.93661	1.01440	4.35950
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.14906	-0.35725	-3.65041
	setup	CLK (R)	0.99290	1.06922	4.42495
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.14980	-0.35841	-3.63681
	setup	CLK (R)	0.92530	1.00201	4.33278

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)	-0.12960	-0.23872	-1.31951
	setup	CLK (R)	0.34466	0.37717	1.48476
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13277	-0.24259	-1.33030
	setup	CLK (R)	0.36492	0.39084	1.49484
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12694	-0.23478	-1.30572
	setup	CLK (R)	0.34906	0.37810	1.45346

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)	-0.21301	-0.45099	-4.33660
	setup	CLK (R)	1.11943	1.23196	4.93098
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.21390	-0.45445	-4.37298
	setup	CLK (R)	1.16864	1.28335	4.97404
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.21914	-0.45401	-4.34176
	setup	CLK (R)	1.10470	1.21962	4.90437

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)	-0.13061	-0.23872	-1.31951
	hold	CLK (R)	-0.12960	-0.24027	-1.32252
	setup	CLK (R)	0.34466	0.37717	1.47984
	setup	CLK (R)	0.34048	0.37460	1.48476
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.13277	-0.24259	-1.33030
	hold	CLK (R)	-0.13557	-0.24259	-1.33252
	setup	CLK (R)	0.36427	0.39084	1.49179
	setup	CLK (R)	0.36492	0.38882	1.49484
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.12694	-0.23478	-1.30572
	hold	CLK (R)	-0.13059	-0.23716	-1.30726
	setup	CLK (R)	0.34676	0.37791	1.44966
	setup	CLK (R)	0.34906	0.37810	1.45346

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)	-0.22612	-0.46535	-4.40848
	hold	CLK (R)	-0.21301	-0.45099	-4.33660
	setup	CLK (R)	1.10437	1.21540	4.92570
	setup	CLK (R)	1.11943	1.23196	4.93098
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.23542	-0.47261	-4.41567
	hold	CLK (R)	-0.21390	-0.45445	-4.37298
	setup	CLK (R)	1.15714	1.26845	4.97266
	setup	CLK (R)	1.16864	1.28335	4.97404
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.23806	-0.47637	-4.41343
	hold	CLK (R)	-0.21914	-0.45401	-4.34176
	setup	CLK (R)	1.09174	1.20299	4.90437
	setup	CLK (R)	1.10470	1.21962	4.90424

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)	-0.11724	-0.23330	-0.57702
	setup	CLK (R)	1.06645	1.03512	1.37351
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11914	-0.23859	-0.54940
	setup	CLK (R)	1.11925	1.08511	1.38458
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11548	-0.23119	-0.57817
	setup	CLK (R)	1.05632	1.02461	1.34001

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)	-0.18611	-0.41419	-3.68525
	setup	CLK (R)	0.97517	1.08199	4.69183
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.18524	-0.41653	-3.65615
	setup	CLK (R)	1.02376	1.12976	4.73941
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.19422	-0.42258	-3.67284
	setup	CLK (R)	0.96394	1.06963	4.66760

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)	-0.18249	-0.29601	-0.57702
	hold	CLK (R)	-0.11724	-0.23330	-1.18058
	setup	CLK (R)	1.06645	1.03512	0.94238
	setup	CLK (R)	0.32588	0.37242	1.37351
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.19032	-0.29478	-0.54940
	hold	CLK (R)	-0.11914	-0.23859	-1.19103
	setup	CLK (R)	1.11925	1.08511	0.94049
	setup	CLK (R)	0.34731	0.38816	1.38458
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.19616	-0.31029	-0.57817
	hold	CLK (R)	-0.11548	-0.23119	-1.16298
	setup	CLK (R)	1.05632	1.02461	0.93158
	setup	CLK (R)	0.33195	0.37585	1.34001

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)	-0.29491	-0.53416	-3.68525
	hold	CLK (R)	-0.18611	-0.41419	-4.14223
	setup	CLK (R)	0.50244	0.65345	3.77884
	setup	CLK (R)	0.97517	1.08199	4.69183
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.29339	-0.53073	-3.65615
	hold	CLK (R)	-0.18524	-0.41653	-4.17582
	setup	CLK (R)	0.51701	0.66300	3.74688
	setup	CLK (R)	1.02376	1.12976	4.73941
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.29474	-0.53024	-3.67284
	hold	CLK (R)	-0.19422	-0.42258	-4.14435
	setup	CLK (R)	0.50740	0.65560	3.75941
	setup	CLK (R)	0.96394	1.06963	4.66760

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 ()	0.27721	1.04492	16.50020
	min_pulse_width	CLK ()	0.18936	1.04492	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.29631	1.04492	16.50020
	min_pulse_width	CLK ()	0.19318	1.04492	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.38033	1.04492	16.50020
	min_pulse_width	CLK ()	0.19700	1.04492	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 ()	0.52548	1.04492	16.50020
	min_pulse_width	CLK ()	0.87312	1.08355	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.55603	1.04492	16.50020
	min_pulse_width	CLK ()	0.90368	1.10672	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.52929	1.04492	16.50020
	min_pulse_width	CLK ()	0.87312	1.08355	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	0.01507	0.01481	0.01463
	CLK	0.01226	0.01200	0.01185
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01727	0.01715	0.01705
	CLK	0.01442	0.01431	0.01424
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02158	0.02170	0.02178
	CLK	0.01875	0.01887	0.01912

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.01573	0.01548	0.01558
	CLK	0.01292	0.01271	0.01276
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01779	0.01782	0.01792
	CLK	0.01496	0.01499	0.01506
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02217	0.02256	0.02272
	CLK	0.01935	0.01975	0.01988

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00085	0.00086	0.00085
	(CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCE)	0.00282	0.00269	0.00263
	(CLK * !SCE)	0.00067	0.00053	0.00047
	(CLK * !SCD * SCE)	0.00053	0.00054	0.00052
	(CLK * !SCD * SCE)	-0.00079	-0.00081	-0.00081
	(!CLK * SCD * SCE)	0.00085	0.00086	0.00085
	(!CLK * SCD * SCE)	-0.00044	-0.00045	-0.00045
	(!CLK * !SCE)	0.00668	0.00656	0.00643
	(!CLK * !SCE)	0.00452	0.00441	0.00427
	(!CLK * !SCD * SCE)	0.00053	0.00054	0.00052
	(!CLK * !SCD * SCE)	-0.00079	-0.00081	-0.00081
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00088	0.00089	0.00088
	(CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK * !SCE)	0.00306	0.00293	0.00287
	(CLK * !SCE)	0.00086	0.00073	0.00067
	(CLK * !SCD * SCE)	0.00055	0.00055	0.00054
	(CLK * !SCD * SCE)	-0.00080	-0.00082	-0.00082
	(!CLK * SCD * SCE)	0.00088	0.00089	0.00088
	(!CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * !SCE)	0.00728	0.00716	0.00703
	(!CLK * !SCE)	0.00507	0.00496	0.00483
	(!CLK * !SCD * SCE)	0.00055	0.00055	0.00054
	(!CLK * !SCD * SCE)	-0.00080	-0.00082	-0.00082

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00086	0.00088	0.00087
	(CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCE)	0.00282	0.00270	0.00264
	(CLK * !SCE)	0.00068	0.00054	0.00049
	(CLK * !SCD * SCE)	0.00055	0.00055	0.00054
	(CLK * !SCD * SCE)	-0.00079	-0.00081	-0.00081
	(!CLK * SCD * SCE)	0.00086	0.00088	0.00087
	(!CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(!CLK * !SCE)	0.00672	0.00660	0.00647
	(!CLK * !SCE)	0.00456	0.00445	0.00432
	(!CLK * !SCD * SCE)	0.00055	0.00055	0.00054
	(!CLK * !SCD * SCE)	-0.00079	-0.00081	-0.00081

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00083	-0.00084	-0.00085
	(CLK * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * !SCE)	0.00076	0.00065	0.00063
	(CLK * !SCE)	0.00291	0.00282	0.00279
	(CLK * !SCD * SCE)	-0.00052	-0.00052	-0.00052
	(CLK * !SCD * SCE)	0.00082	0.00081	0.00081
	(!CLK * SCD * SCE)	-0.00082	-0.00084	-0.00085
	(!CLK * SCD * SCE)	0.00046	0.00047	0.00045
	(!CLK * !SCE)	0.00459	0.00447	0.00438
	(!CLK * !SCE)	0.00676	0.00662	0.00654
	(!CLK * !SCD * SCE)	-0.00052	-0.00052	-0.00052
	(!CLK * !SCD * SCE)	0.00082	0.00082	0.00081

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00085	-0.00087	-0.00088
	(CLK * SCD * SCE)	0.00046	0.00047	0.00045
	(CLK * !SCE)	0.00079	0.00069	0.00067
	(CLK * !SCE)	0.00300	0.00288	0.00287
	(CLK * !SCD * SCE)	-0.00054	-0.00054	-0.00054
	(CLK * !SCD * SCE)	0.00083	0.00082	0.00082
	(!CLK * SCD * SCE)	-0.00085	-0.00087	-0.00088
	(!CLK * SCD * SCE)	0.00046	0.00047	0.00045
	(!CLK * !SCE)	0.00473	0.00460	0.00452
	(!CLK * !SCE)	0.00694	0.00680	0.00672
	(!CLK * !SCD * SCE)	-0.00054	-0.00054	-0.00054
	(!CLK * !SCD * SCE)	0.00083	0.00082	0.00082
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00084	-0.00085	-0.00087
	(CLK * SCD * SCE)	0.00047	0.00046	0.00045
	(CLK * !SCE)	0.00073	0.00063	0.00061
	(CLK * !SCE)	0.00288	0.00279	0.00276
	(CLK * !SCD * SCE)	-0.00054	-0.00054	-0.00053
	(CLK * !SCD * SCE)	0.00081	0.00081	0.00081
	(!CLK * SCD * SCE)	-0.00084	-0.00085	-0.00087
	(!CLK * SCD * SCE)	0.00046	0.00046	0.00045
	(!CLK * !SCE)	0.00488	0.00476	0.00467
	(!CLK * !SCE)	0.00704	0.00691	0.00682
	(!CLK * !SCD * SCE)	-0.00054	-0.00054	-0.00054
	(!CLK * !SCD * SCE)	0.00081	0.00081	0.00081

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00375	0.00366	0.00358
	(CLK * D * SCE)	0.00109	0.00098	0.00091
	(CLK * !D * SCE)	0.00410	0.00402	0.00391
	(CLK * !D * SCE)	0.00139	0.00130	0.00121
	(!CLK * D * SCE)	0.00760	0.00751	0.00738
	(!CLK * D * SCE)	0.00494	0.00484	0.00471
	(!CLK * !D * SCE)	0.00795	0.00787	0.00772
	(!CLK * !D * SCE)	0.00525	0.00516	0.00501
	!SCE	0.00068	0.00069	0.00068
	!SCE	-0.00085	-0.00085	-0.00085
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00389	0.00379	0.00372
	(CLK * D * SCE)	0.00124	0.00114	0.00107
	(CLK * !D * SCE)	0.00424	0.00415	0.00405
	(CLK * !D * SCE)	0.00155	0.00146	0.00137
	(!CLK * D * SCE)	0.00810	0.00801	0.00788
	(!CLK * D * SCE)	0.00546	0.00537	0.00524
	(!CLK * !D * SCE)	0.00845	0.00836	0.00822
	(!CLK * !D * SCE)	0.00576	0.00568	0.00554
	!SCE	0.00069	0.00069	0.00069
	!SCE	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00372	0.00363	0.00355
	(CLK * D * SCE)	0.00112	0.00101	0.00094
	(CLK * !D * SCE)	0.00407	0.00399	0.00389
	(CLK * !D * SCE)	0.00142	0.00133	0.00124
	(!CLK * D * SCE)	0.00761	0.00752	0.00738
	(!CLK * D * SCE)	0.00500	0.00491	0.00478
	(!CLK * !D * SCE)	0.00796	0.00787	0.00772
	(!CLK * !D * SCE)	0.00531	0.00522	0.00508
	!SCE	0.00066	0.00067	0.00066
	!SCE	-0.00082	-0.00083	-0.00083

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00136	0.00124	0.00121
	(CLK * D * SCE)	0.00403	0.00392	0.00387
	(CLK * !D * SCE)	0.00111	0.00100	0.00099
	(CLK * !D * SCE)	0.00382	0.00371	0.00369
	(!CLK * D * SCE)	0.00517	0.00505	0.00497
	(!CLK * D * SCE)	0.00784	0.00774	0.00763
	(!CLK * !D * SCE)	0.00493	0.00482	0.00475
	(!CLK * !D * SCE)	0.00764	0.00753	0.00745
	!SCE	-0.00067	-0.00068	-0.00068
	!SCE	0.00086	0.00086	0.00085
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00146	0.00134	0.00131
	(CLK * D * SCE)	0.00411	0.00400	0.00394
	(CLK * !D * SCE)	0.00122	0.00110	0.00109
	(CLK * !D * SCE)	0.00389	0.00379	0.00376
	(!CLK * D * SCE)	0.00537	0.00525	0.00518
	(!CLK * D * SCE)	0.00801	0.00791	0.00781
	(!CLK * !D * SCE)	0.00513	0.00502	0.00495
	(!CLK * !D * SCE)	0.00781	0.00771	0.00762
	!SCE	-0.00068	-0.00069	-0.00069
	!SCE	0.00081	0.00081	0.00080

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00135	0.00124	0.00121
	(CLK * D * SCE)	0.00396	0.00386	0.00381
	(CLK * !D * SCE)	0.00111	0.00100	0.00099
	(CLK * !D * SCE)	0.00375	0.00365	0.00363
	(!CLK * D * SCE)	0.00548	0.00537	0.00528
	(!CLK * D * SCE)	0.00809	0.00799	0.00788
	(!CLK * !D * SCE)	0.00524	0.00513	0.00507
	(!CLK * !D * SCE)	0.00789	0.00779	0.00771
	!SCE	-0.00065	-0.00067	-0.00066
	!SCE	0.00083	0.00084	0.00083

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)**	0.00375	0.00357	0.00348
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00024	-0.00046	-0.00054
	(CLK * D * !SCD)	0.00566	0.00542	0.00525
	(CLK * D * !SCD)	0.00272	0.00245	0.00226
	(CLK * !D * SCD)	0.00643	0.00612	0.00595
	(CLK * !D * SCD)	0.00153	0.00120	0.00105
	(!CLK * D * SCD)	0.00375	0.00357	0.00348
	(!CLK * D * SCD)	-0.00024	-0.00046	-0.00054
	(!CLK * D * !SCD)	0.00938	0.00922	0.00905
	(!CLK * D * !SCD)	0.00643	0.00624	0.00607
	(!CLK * !D * SCD)	0.01028	0.00998	0.00974
	(!CLK * !D * SCD)	0.00538	0.00506	0.00485
	(!CLK * !D * !SCD)	0.00368	0.00348	0.00339
	(!CLK * !D * !SCD)	-0.00016	-0.00035	-0.00043

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00360	0.00342	0.00333
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00025	-0.00046	-0.00053
	(CLK * D * !SCD)	0.00559	0.00536	0.00519
	(CLK * D * !SCD)	0.00282	0.00256	0.00238
	(CLK * !D * SCD)	0.00647	0.00618	0.00601
	(CLK * !D * SCD)	0.00170	0.00139	0.00125
	(!CLK * D * SCD)	0.00360	0.00342	0.00333
	(!CLK * D * SCD)	-0.00025	-0.00046	-0.00053
	(!CLK * D * !SCD)	0.00941	0.00926	0.00910
	(!CLK * D * !SCD)	0.00663	0.00645	0.00629
	(!CLK * !D * SCD)	0.01069	0.01039	0.01017
	(!CLK * !D * SCD)	0.00592	0.00562	0.00541
	(!CLK * !D * !SCD)	0.00355	0.00336	0.00328
	(!CLK * !D * !SCD)	-0.00012	-0.00032	-0.00039
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00375	0.00356	0.00347
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00024	-0.00046	-0.00054
	(CLK * D * !SCD)	0.00563	0.00538	0.00521
	(CLK * D * !SCD)	0.00268	0.00240	0.00221
	(CLK * !D * SCD)	0.00644	0.00614	0.00596
	(CLK * !D * SCD)	0.00157	0.00123	0.00109
	(!CLK * D * SCD)	0.00375	0.00356	0.00347
	(!CLK * D * SCD)	-0.00024	-0.00046	-0.00054
	(!CLK * D * !SCD)	0.00965	0.00949	0.00934
	(!CLK * D * !SCD)	0.00670	0.00651	0.00634
	(!CLK * !D * SCD)	0.01033	0.01002	0.00978
	(!CLK * !D * SCD)	0.00546	0.00513	0.00492
	(!CLK * !D * !SCD)	0.00367	0.00347	0.00338
	(!CLK * !D * !SCD)	-0.00016	-0.00036	-0.00043

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)	-0.00026	-0.00040	-0.00044
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00374	0.00362	0.00357
	(CLK * D * !SCD)	0.00257	0.00240	0.00227
	(CLK * D * !SCD)	0.00554	0.00536	0.00524
	(CLK * !D * SCD)	0.00098	0.00073	0.00067
	(CLK * !D * SCD)	0.00588	0.00564	0.00559
	(!CLK * D * SCD)	-0.00026	-0.00040	-0.00044
	(!CLK * D * SCD)	0.00374	0.00360	0.00357
	(!CLK * D * !SCD)	0.00639	0.00626	0.00612
	(!CLK * D * !SCD)	0.00936	0.00922	0.00909
	(!CLK * !D * SCD)	0.00482	0.00456	0.00443
	(!CLK * !D * SCD)	0.00973	0.00947	0.00935
	(!CLK * !D * !SCD)	0.00001	-0.00013	-0.00017
	(!CLK * !D * !SCD)	0.00384	0.00370	0.00366

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00025	-0.00038	-0.00041
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00359	0.00348	0.00343
	(CLK * D * !SCD)	0.00279	0.00262	0.00249
	(CLK * D * !SCD)	0.00557	0.00541	0.00529
	(CLK * !D * SCD)	0.00103	0.00079	0.00073
	(CLK * !D * SCD)	0.00578	0.00556	0.00550
	(!CLK * D * SCD)	-0.00025	-0.00038	-0.00041
	(!CLK * D * SCD)	0.00360	0.00348	0.00344
	(!CLK * D * !SCD)	0.00697	0.00684	0.00671
	(!CLK * D * !SCD)	0.00975	0.00964	0.00950
	(!CLK * !D * SCD)	0.00496	0.00471	0.00460
	(!CLK * !D * SCD)	0.00973	0.00948	0.00936
	(!CLK * !D * !SCD)	0.00000	-0.00014	-0.00017
	(!CLK * !D * !SCD)	0.00367	0.00354	0.00350
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00025	-0.00038	-0.00042
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00374	0.00362	0.00358
	(CLK * D * !SCD)	0.00259	0.00242	0.00228
	(CLK * D * !SCD)	0.00556	0.00539	0.00526
	(CLK * !D * SCD)	0.00097	0.00073	0.00067
	(CLK * !D * SCD)	0.00585	0.00561	0.00555
	(!CLK * D * SCD)	-0.00025	-0.00038	-0.00042
	(!CLK * D * SCD)	0.00375	0.00362	0.00358
	(!CLK * D * !SCD)	0.00645	0.00631	0.00618
	(!CLK * D * !SCD)	0.00942	0.00928	0.00916
	(!CLK * !D * SCD)	0.00514	0.00487	0.00475
	(!CLK * !D * SCD)	0.01001	0.00974	0.00964
	(!CLK * !D * !SCD)	0.00003	-0.00011	-0.00015
	(!CLK * !D * !SCD)	0.00386	0.00371	0.00367

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)	0.00891	0.00856	0.00840
	(D * SCD * SCE * Q)	0.00610	0.00573	0.00559
	(D * !SCE * Q)	0.00890	0.00855	0.00840
	(D * !SCE * Q)	0.00609	0.00573	0.00559
	(D * !SCD * SCE * !Q)	0.00890	0.00855	0.00839
	(D * !SCD * SCE * !Q)	0.00609	0.00572	0.00558
	(!D * SCD * SCE * Q)	0.00891	0.00856	0.00840
	(!D * SCD * SCE * Q)	0.00609	0.00573	0.00559
	(!D * !SCE * !Q)	0.00891	0.00854	0.00839
	(!D * !SCE * !Q)	0.00609	0.00572	0.00558
	(!D * !SCD * SCE * !Q)	0.00890	0.00855	0.00839
	(!D * !SCD * SCE * !Q)	0.00609	0.00573	0.00558
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.00908	0.00873	0.00857
	(D * SCD * SCE * Q)	0.00624	0.00588	0.00572
	(D * !SCE * Q)	0.00907	0.00873	0.00857
	(D * !SCE * Q)	0.00623	0.00588	0.00572
	(D * !SCD * SCE * !Q)	0.00917	0.00881	0.00864
	(D * !SCD * SCE * !Q)	0.00632	0.00596	0.00579
	(!D * SCD * SCE * Q)	0.00908	0.00873	0.00857
	(!D * SCD * SCE * Q)	0.00624	0.00588	0.00572
	(!D * !SCE * !Q)	0.00917	0.00881	0.00863
	(!D * !SCE * !Q)	0.00632	0.00596	0.00579
	(!D * !SCD * SCE * !Q)	0.00917	0.00881	0.00864
	(!D * !SCD * SCE * !Q)	0.00632	0.00597	0.00580

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00902	0.00866	0.00850
	(D * SCD * SCE * Q)	0.00619	0.00582	0.00568
	(D * !SCE * Q)	0.00901	0.00865	0.00850
	(D * !SCE * Q)	0.00618	0.00582	0.00568
	(D * !SCD * SCE * !Q)	0.00898	0.00861	0.00846
	(D * !SCD * SCE * !Q)	0.00615	0.00578	0.00563
	(!D * SCD * SCE * Q)	0.00902	0.00866	0.00850
	(!D * SCD * SCE * Q)	0.00619	0.00582	0.00568
	(!D * !SCE * !Q)	0.00898	0.00861	0.00846
	(!D * !SCE * !Q)	0.00615	0.00578	0.00563
	(!D * !SCD * SCE * !Q)	0.00898	0.00861	0.00846
	(!D * !SCD * SCE * !Q)	0.00615	0.00578	0.00563

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)**	0.00521	0.00493	0.00479
	(D * SCD * SCE * Q)	0.00804	0.00775	0.00761
	(D * SCD * SCE * !Q)	0.00890	0.00857	0.00826
	(D * SCD * SCE * !Q)	0.01172	0.01138	0.01107
	(D * !SCE * Q)	0.00521	0.00493	0.00479
	(D * !SCE * Q)	0.00804	0.00775	0.00760
	(D * !SCE * !Q)	0.00887	0.00854	0.00824
	(D * !SCE * !Q)	0.01170	0.01135	0.01105
	(D * !SCD * SCE * Q)	0.00987	0.00959	0.00969
	(D * !SCD * SCE * Q)	0.01271	0.01241	0.01253
	(D * !SCD * SCE * !Q)	0.00517	0.00488	0.00473
	(D * !SCD * SCE * !Q)	0.00799	0.00769	0.00755
	(!D * SCD * SCE * Q)	0.00521	0.00493	0.00479
	(!D * SCD * SCE * Q)	0.00804	0.00775	0.00760
	(!D * SCD * SCE * !Q)	0.00892	0.00860	0.00829
	(!D * SCD * SCE * !Q)	0.01174	0.01140	0.01109
	(!D * !SCE * Q)	0.00988	0.00957	0.00967
	(!D * !SCE * Q)	0.01271	0.01238	0.01248
	(!D * !SCE * !Q)	0.00516	0.00488	0.00473
	(!D * !SCE * !Q)	0.00799	0.00769	0.00755
	(!D * !SCD * SCE * Q)	0.00987	0.00958	0.00969
	(!D * !SCD * SCE * Q)	0.01271	0.01240	0.01252
	(!D * !SCD * SCE * !Q)	0.00517	0.00488	0.00473
	(!D * !SCD * SCE * !Q)	0.00799	0.00769	0.00755

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00544	0.00516	0.00501
	(D * SCD * SCE * Q)	0.00828	0.00800	0.00786
	(D * SCD * SCE * !Q)	0.00946	0.00913	0.00879
	(D * SCD * SCE * !Q)	0.01230	0.01197	0.01163
	(D * !SCE * Q)	0.00544	0.00516	0.00501
	(D * !SCE * Q)	0.00828	0.00800	0.00786
	(D * !SCE * !Q)	0.00944	0.00911	0.00877
	(D * !SCE * !Q)	0.01228	0.01195	0.01162
	(D * !SCD * SCE * Q)	0.01019	0.00989	0.01001
	(D * !SCD * SCE * Q)	0.01305	0.01274	0.01286
	(D * !SCD * SCE * !Q)	0.00531	0.00502	0.00485
	(D * !SCD * SCE * !Q)	0.00815	0.00786	0.00770
	(!D * SCD * SCE * Q)	0.00544	0.00516	0.00501
	(!D * SCD * SCE * Q)	0.00828	0.00800	0.00786
	(!D * SCD * SCE * !Q)	0.00949	0.00916	0.00882
	(!D * SCD * SCE * !Q)	0.01231	0.01198	0.01166
	(!D * !SCE * Q)	0.01016	0.00987	0.00999
	(!D * !SCE * Q)	0.01300	0.01271	0.01283
	(!D * !SCE * !Q)	0.00531	0.00502	0.00486
	(!D * !SCE * !Q)	0.00815	0.00786	0.00769
	(!D * !SCD * SCE * Q)	0.01019	0.00988	0.01001
	(!D * !SCD * SCE * Q)	0.01304	0.01273	0.01287
	(!D * !SCD * SCE * !Q)	0.00531	0.00502	0.00485
	(!D * !SCD * SCE * !Q)	0.00815	0.00786	0.00770

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00517	0.00490	0.00475
	(D * SCD * SCE * Q)	0.00801	0.00772	0.00758
	(D * SCD * SCE * !Q)	0.00895	0.00862	0.00830
	(D * SCD * SCE * !Q)	0.01178	0.01144	0.01113
	(D * !SCE * Q)	0.00517	0.00490	0.00475
	(D * !SCE * Q)	0.00801	0.00772	0.00758
	(D * !SCE * !Q)	0.00892	0.00860	0.00828
	(D * !SCE * !Q)	0.01176	0.01142	0.01111
	(D * !SCD * SCE * Q)	0.01019	0.00987	0.00999
	(D * !SCD * SCE * Q)	0.01302	0.01270	0.01283
	(D * !SCD * SCE * !Q)	0.00518	0.00488	0.00473
	(D * !SCD * SCE * !Q)	0.00799	0.00771	0.00756
	(!D * SCD * SCE * Q)	0.00517	0.00490	0.00475
	(!D * SCD * SCE * Q)	0.00801	0.00772	0.00758
	(!D * SCD * SCE * !Q)	0.00897	0.00865	0.00833
	(!D * SCD * SCE * !Q)	0.01179	0.01146	0.01115
	(!D * !SCE * Q)	0.01015	0.00985	0.00994
	(!D * !SCE * Q)	0.01299	0.01267	0.01277
	(!D * !SCE * !Q)	0.00518	0.00488	0.00473
	(!D * !SCE * !Q)	0.00799	0.00771	0.00757
	(!D * !SCD * SCE * Q)	0.01019	0.00986	0.01000
	(!D * !SCD * SCE * Q)	0.01300	0.01269	0.01284
	(!D * !SCD * SCE * !Q)	0.00518	0.00488	0.00473
	(!D * !SCD * SCE * !Q)	0.00799	0.00771	0.00755

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
GATE	SCE	CLK	GCLK
x	x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdlclkp_1	25.57440
sky130_fd_sc_hs__sdlclkp_2	27.17280
sky130_fd_sc_hs__sdlclkp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	GATE	SCE	CLK	GCLK
sky130_fd_sc_hs__sdlclkp_1	0.00222	0.00200	0.00435	0.35605
sky130_fd_sc_hs__sdlclkp_2	0.00221	0.00199	0.00462	0.71473
sky130_fd_sc_hs__sdlclkp_4	0.00209	0.00188	0.00471	1.38561

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	0.00051	0.00056
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.00063	0.00069
sky130_fd_sc_hs__sdlclkp_4	0.00000	0.00078	0.00085

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)	0.16592	1.15628	8.62582
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.16326	1.01857	8.77807
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.20798	0.98966	9.11717

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.24060	1.00850	5.90866
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.28762	1.06580	6.39883
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.40538	1.19508	7.07495

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)	-0.09184	-0.21717	-1.29185
	setup	CLK (R)	0.35098	0.38671	1.53595
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09073	-0.21558	-1.28834
	setup	CLK (R)	0.34654	0.36690	1.45216
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09246	-0.22123	-1.30877
	setup	CLK (R)	0.34379	0.35334	1.42562

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)	-0.65555	-0.74011	-4.04397
	setup	CLK (R)	0.75787	0.88024	4.29492
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.64363	-0.73179	-4.04552
	setup	CLK (R)	0.73660	0.85049	4.19729
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.66322	-0.75240	-4.09779
	setup	CLK (R)	0.74907	0.83872	4.21400

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)	-0.09184	-0.21717	-1.29185
	setup	CLK (R)	0.35098	0.38671	1.53595
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09073	-0.21558	-1.28834
	setup	CLK (R)	0.34654	0.36690	1.45216
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09246	-0.22123	-1.30877
	setup	CLK (R)	0.34379	0.35334	1.42562

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)	-0.65555	-0.74011	-4.04397
	setup	CLK (R)	0.75787	0.88024	4.29492
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.64363	-0.73179	-4.04552
	setup	CLK (R)	0.73660	0.85049	4.19729
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.66322	-0.75240	-4.09779
	setup	CLK (R)	0.74907	0.83872	4.21400

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)	-0.09351	-0.22689	-1.34722
	setup	CLK (R)	0.35362	0.39340	1.59143
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09413	-0.22523	-1.34076
	setup	CLK (R)	0.34632	0.37386	1.50053
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09587	-0.23091	-1.36216
	setup	CLK (R)	0.34645	0.36018	1.47275

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)	-0.67732	-0.81676	-4.58851
	setup	CLK (R)	0.77856	0.94944	4.78960
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.66690	-0.80514	-4.58518
	setup	CLK (R)	0.76209	0.92280	4.68944
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.68577	-0.82677	-4.62359
	setup	CLK (R)	0.77330	0.91091	4.69449

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)	-0.09351	-0.22689	-1.34722
	setup	CLK (R)	0.35362	0.39340	1.59143
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09413	-0.22523	-1.34076
	setup	CLK (R)	0.34632	0.37386	1.50053
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09587	-0.23091	-1.36216
	setup	CLK (R)	0.34645	0.36018	1.47275

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)	-0.67732	-0.81676	-4.58851
	setup	CLK (R)	0.77856	0.94944	4.78960
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.66690	-0.80514	-4.58518
	setup	CLK (R)	0.76209	0.92280	4.68944
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.68577	-0.82677	-4.62359
	setup	CLK (R)	0.77330	0.91091	4.69449

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 ()	0.11679	1.04492	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.12825	1.04492	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.17408	1.04492	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 ()	0.57513	1.04492	16.50020
	min_pulse_width	CLK ()	0.67825	1.04492	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.56367	1.04492	16.50020
	min_pulse_width	CLK ()	0.66297	1.04492	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.56749	1.04492	16.50020
	min_pulse_width	CLK ()	0.65878	1.13376	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	0.01103	0.01076	0.01061
	CLK	0.00661	0.00633	0.00618
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01325	0.01311	0.01302
	CLK	0.00855	0.00840	0.00833
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01727	0.01736	0.01746
	CLK	0.01246	0.01254	0.01274

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01311	0.01285	0.01295
	CLK	0.01727	0.01700	0.01693
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01458	0.01452	0.01480
	CLK	0.01900	0.01892	0.01892
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01889	0.01918	0.02041
	CLK	0.02344	0.02370	0.02389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00094	0.00094	0.00094
	(CLK * SCE)	-0.00058	-0.00057	-0.00057
	(CLK * !SCE)	0.00307	0.00288	0.00280
	(CLK * !SCE)	0.00076	0.00057	0.00049
	(!CLK * SCE * !GCLK)	0.00091	0.00091	0.00091
	(!CLK * SCE * !GCLK)	-0.00060	-0.00060	-0.00060
	(!CLK * !SCE * !GCLK)	0.00780	0.00762	0.00742
	(!CLK * !SCE * !GCLK)	0.00576	0.00558	0.00538
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00094	0.00094	0.00094
	(CLK * SCE)	-0.00058	-0.00057	-0.00057
	(CLK * !SCE)	0.00304	0.00285	0.00276
	(CLK * !SCE)	0.00074	0.00055	0.00047
	(!CLK * SCE * !GCLK)	0.00091	0.00091	0.00091
	(!CLK * SCE * !GCLK)	-0.00060	-0.00060	-0.00060
	(!CLK * !SCE * !GCLK)	0.00768	0.00750	0.00730
	(!CLK * !SCE * !GCLK)	0.00566	0.00548	0.00528
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00090	0.00090	0.00090
	(CLK * SCE)	-0.00056	-0.00055	-0.00055
	(CLK * !SCE)	0.00294	0.00276	0.00268
	(CLK * !SCE)	0.00076	0.00057	0.00049
	(!CLK * SCE * !GCLK)	0.00089	0.00088	0.00088
	(!CLK * SCE * !GCLK)	-0.00058	-0.00057	-0.00057
	(!CLK * !SCE * !GCLK)	0.00771	0.00754	0.00733
	(!CLK * !SCE * !GCLK)	0.00579	0.00561	0.00541

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00092	-0.00092	-0.00094
	(CLK * SCE)	0.00060	0.00060	0.00058
	(CLK * !SCE)	0.00066	0.00053	0.00050
	(CLK * !SCE)	0.00296	0.00283	0.00281
	(!CLK * SCE * !GCLK)	-0.00089	-0.00089	-0.00091
	(!CLK * SCE * !GCLK)	0.00063	0.00062	0.00061
	(!CLK * !SCE * !GCLK)	0.00668	0.00651	0.00639
	(!CLK * !SCE * !GCLK)	0.00873	0.00855	0.00844
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00091	-0.00091	-0.00094
	(CLK * SCE)	0.00060	0.00060	0.00058
	(CLK * !SCE)	0.00069	0.00055	0.00053
	(CLK * !SCE)	0.00297	0.00285	0.00283
	(!CLK * SCE * !GCLK)	-0.00089	-0.00089	-0.00091
	(!CLK * SCE * !GCLK)	0.00063	0.00062	0.00061
	(!CLK * !SCE * !GCLK)	0.00673	0.00655	0.00644
	(!CLK * !SCE * !GCLK)	0.00875	0.00857	0.00846
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00087	-0.00087	-0.00090
	(CLK * SCE)	0.00058	0.00058	0.00056
	(CLK * !SCE)	0.00088	0.00075	0.00073
	(CLK * !SCE)	0.00307	0.00294	0.00292
	(!CLK * SCE * !GCLK)	-0.00085	-0.00086	-0.00088
	(!CLK * SCE * !GCLK)	0.00060	0.00059	0.00058
	(!CLK * !SCE * !GCLK)	0.00695	0.00678	0.00667
	(!CLK * !SCE * !GCLK)	0.00887	0.00871	0.00859

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00078	0.00078	0.00078
	(CLK * GATE)	-0.00094	-0.00096	-0.00096
	(CLK * !GATE)	0.00364	0.00352	0.00342
	(CLK * !GATE)	0.00107	0.00093	0.00085
	(!CLK * GATE * !GCLK)	0.00078	0.00078	0.00078
	(!CLK * GATE * !GCLK)	-0.00094	-0.00096	-0.00096
	(!CLK * !GATE * !GCLK)	0.00839	0.00824	0.00805
	(!CLK * !GATE * !GCLK)	0.00606	0.00593	0.00575
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00077	0.00078	0.00077
	(CLK * GATE)	-0.00094	-0.00096	-0.00096
	(CLK * !GATE)	0.00361	0.00348	0.00339
	(CLK * !GATE)	0.00105	0.00091	0.00083
	(!CLK * GATE * !GCLK)	0.00077	0.00078	0.00077
	(!CLK * GATE * !GCLK)	-0.00094	-0.00096	-0.00096
	(!CLK * !GATE * !GCLK)	0.00826	0.00811	0.00793
	(!CLK * !GATE * !GCLK)	0.00597	0.00584	0.00565
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00073	0.00074	0.00073
	(CLK * GATE)	-0.00092	-0.00094	-0.00094
	(CLK * !GATE)	0.00352	0.00340	0.00331
	(CLK * !GATE)	0.00107	0.00094	0.00086
	(!CLK * GATE * !GCLK)	0.00073	0.00074	0.00073
	(!CLK * GATE * !GCLK)	-0.00092	-0.00094	-0.00094
	(!CLK * !GATE * !GCLK)	0.00829	0.00816	0.00797
	(!CLK * !GATE * !GCLK)	0.00610	0.00596	0.00578

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00078	-0.00077	-0.00077
	(CLK * GATE)	0.00096	0.00096	0.00096
	(CLK * !GATE)	0.00067	0.00058	0.00058
	(CLK * !GATE)	0.00325	0.00316	0.00315
	(!CLK * GATE * !GCLK)	-0.00078	-0.00077	-0.00077
	(!CLK * GATE * !GCLK)	0.00096	0.00096	0.00096
	(!CLK * !GATE * !GCLK)	0.00665	0.00655	0.00647
	(!CLK * !GATE * !GCLK)	0.00897	0.00887	0.00879
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00077	-0.00077	-0.00077
	(CLK * GATE)	0.00096	0.00096	0.00096
	(CLK * !GATE)	0.00070	0.00061	0.00061
	(CLK * !GATE)	0.00326	0.00317	0.00317
	(!CLK * GATE * !GCLK)	-0.00077	-0.00077	-0.00077
	(!CLK * GATE * !GCLK)	0.00096	0.00096	0.00096
	(!CLK * !GATE * !GCLK)	0.00670	0.00660	0.00650
	(!CLK * !GATE * !GCLK)	0.00898	0.00889	0.00879
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00073	-0.00073	-0.00073
	(CLK * GATE)	0.00094	0.00094	0.00094
	(CLK * !GATE)	0.00090	0.00081	0.00081
	(CLK * !GATE)	0.00335	0.00327	0.00326
	(!CLK * GATE * !GCLK)	-0.00073	-0.00073	-0.00073
	(!CLK * GATE * !GCLK)	0.00094	0.00094	0.00094
	(!CLK * !GATE * !GCLK)	0.00693	0.00683	0.00675
	(!CLK * !GATE * !GCLK)	0.00912	0.00903	0.00894

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.00692	0.00663	0.00650
	(!GATE * !SCE * !GCLK)	0.00271	0.00239	0.00230
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.00701	0.00675	0.00661
	(!GATE * !SCE * !GCLK)	0.00254	0.00225	0.00214
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.00712	0.00685	0.00672
	(!GATE * !SCE * !GCLK)	0.00255	0.00225	0.00215

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.00792	0.00759	0.00733
	(GATE * SCE * !GCLK)	0.01247	0.01212	0.01188
	(GATE * !SCE * !GCLK)	0.00791	0.00758	0.00732
	(GATE * !SCE * !GCLK)	0.01245	0.01211	0.01187
	(!GATE * SCE * !GCLK)	0.00794	0.00761	0.00735
	(!GATE * SCE * !GCLK)	0.01248	0.01214	0.01189
	(!GATE * !SCE * !GCLK)	0.00314	0.00290	0.00280
	(!GATE * !SCE * !GCLK)	0.00734	0.00710	0.00703
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.00767	0.00733	0.00708
	(GATE * SCE * !GCLK)	0.01250	0.01215	0.01189
	(GATE * !SCE * !GCLK)	0.00765	0.00732	0.00707
	(GATE * !SCE * !GCLK)	0.01248	0.01214	0.01191
	(!GATE * SCE * !GCLK)	0.00769	0.00736	0.00710
	(!GATE * SCE * !GCLK)	0.01251	0.01217	0.01193
	(!GATE * !SCE * !GCLK)	0.00297	0.00273	0.00263
	(!GATE * !SCE * !GCLK)	0.00743	0.00719	0.00712
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.00797	0.00763	0.00736
	(GATE * SCE * !GCLK)	0.01288	0.01253	0.01228
	(GATE * !SCE * !GCLK)	0.00795	0.00761	0.00735
	(GATE * !SCE * !GCLK)	0.01286	0.01251	0.01227
	(!GATE * SCE * !GCLK)	0.00799	0.00765	0.00739
	(!GATE * SCE * !GCLK)	0.01289	0.01254	0.01230
	(!GATE * !SCE * !GCLK)	0.00313	0.00289	0.00278
	(!GATE * !SCE * !GCLK)	0.00769	0.00745	0.00737

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT	
D	DE	SCD	SCE	CLK	Q	Q_N
x	0	x	0	R	IQ	IQ_N
x	x	0	1	R	0	1
x	x	1	1	R	1	0
0	1	0	x	R	0	1
0	1	1	0	R	0	1
1	1	x	0	R	1	0
x	x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxbp_1	54.34560
sky130_fd_sc_hs__sedfxbp_2	57.54240

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	DE	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sedfxbp_1	0.00185	0.00352	0.00160	0.00357	0.00264	0.36082	0.36084
sky130_fd_sc_hs__sedfxbp_2	0.00195	0.00356	0.00163	0.00365	0.00265	0.67130	0.68750

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	0.00116	0.00148
sky130_fd_sc_hs__sedfxbp_2	0.00000	0.00130	0.00162

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)	0.48070	1.49280	8.97794
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.48810	1.36789	9.02115

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.54506	1.15128	3.60166
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.66417	1.26604	3.68287

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)	0.79737	1.76486	9.22828
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.98597	1.78512	9.41044

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)	0.70529	1.23502	3.65474
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.79006	1.29664	3.71974

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)	-0.28182	-0.42141	-1.77687
	setup	CLK (R)	0.37892	0.47417	1.86524
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.28582	-0.42177	-1.78317
	setup	CLK (R)	0.38043	0.47770	1.86884

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)	-1.61937	-1.72653	-5.40563
	setup	CLK (R)	1.89746	1.98548	5.52714
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-1.61395	-1.72847	-5.40607
	setup	CLK (R)	1.88169	1.97091	5.53068

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)	-0.28182	-0.42141	-1.77687
	setup	CLK (R)	0.37892	0.47417	1.86524
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.28582	-0.42177	-1.78317
	setup	CLK (R)	0.38043	0.47770	1.86884

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)	-1.61937	-1.72653	-5.40563
	setup	CLK (R)	1.89746	1.98548	5.52714
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-1.61395	-1.72847	-5.40607
	setup	CLK (R)	1.88169	1.97091	5.53068

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)	-0.08187	-0.08780	-0.22993
	setup	CLK (R)	1.96314	1.95366	1.83699
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07985	-0.08886	-0.23644
	setup	CLK (R)	1.94716	1.93570	1.83798

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)	-0.46698	-0.70866	-3.89328
	setup	CLK (R)	1.66366	1.79561	5.66322
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.46962	-0.70805	-3.88710
	setup	CLK (R)	1.65758	1.79590	5.65339

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)	-0.08187	-0.08780	-0.22993
	hold	CLK (R)	-0.44420	-0.53267	-1.03512
	setup	CLK (R)	0.37872	0.45307	1.83699
	setup	CLK (R)	1.96314	1.95366	1.77967
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07985	-0.08886	-0.23644
	hold	CLK (R)	-0.44065	-0.52922	-1.01906
	setup	CLK (R)	0.37904	0.45661	1.83798
	setup	CLK (R)	1.94716	1.93570	1.77123

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)	-1.60080	-1.74810	-5.63956
	hold	CLK (R)	-0.46698	-0.70866	-3.89328
	setup	CLK (R)	1.66366	1.79561	5.66322
	setup	CLK (R)	0.50969	0.73148	3.92648
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-1.59066	-1.74491	-5.63798
	hold	CLK (R)	-0.46962	-0.70805	-3.88710
	setup	CLK (R)	1.65758	1.79590	5.65339
	setup	CLK (R)	0.50847	0.72940	3.91859

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)	-0.15633	-0.27050	-1.39094
	setup	CLK (R)	0.22290	0.31128	1.48495
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15870	-0.27328	-1.39624
	setup	CLK (R)	0.22553	0.31413	1.49043

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)	-0.97478	-1.10957	-4.87101
	setup	CLK (R)	1.22814	1.34928	5.00323
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.96926	-1.10653	-4.86488
	setup	CLK (R)	1.21396	1.33683	4.99787

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)	-0.15633	-0.27050	-1.39094
	setup	CLK (R)	0.22290	0.31128	1.48495
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15870	-0.27328	-1.39624
	setup	CLK (R)	0.22553	0.31413	1.49043

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)	-0.97478	-1.10957	-4.87101
	setup	CLK (R)	1.22814	1.34928	5.00323
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.96926	-1.10653	-4.86488
	setup	CLK (R)	1.21396	1.33683	4.99787

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)	-0.01236	0.03301	0.56742
	setup	CLK (R)	1.24843	1.22232	1.34044
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.01058	0.02957	0.56383
	setup	CLK (R)	1.23975	1.21575	1.34062

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)	-0.36075	-0.60367	-3.86515
	setup	CLK (R)	1.42054	1.51637	4.85265
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.37246	-0.61420	-3.90934
	setup	CLK (R)	1.40970	1.50475	4.84956

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)	-0.99037	-0.98350	-0.93663
	hold	CLK (R)	-0.01236	0.03301	0.56742
	hold	CLK (R)	-0.13950	-0.26457	-1.23389
	hold	CLK (R)	-0.31990	-0.39756	-0.56849
	setup	CLK (R)	1.24843	1.22216	1.05958
	setup	CLK (R)	0.20293	0.30910	1.33794
	setup	CLK (R)	0.20368	0.30776	1.34044
	setup	CLK (R)	1.24829	1.22232	1.05964
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.99313	-0.98533	-0.96636
	hold	CLK (R)	-0.01058	0.02957	0.56383
	hold	CLK (R)	-0.14295	-0.26633	-1.23579
	hold	CLK (R)	-0.32478	-0.40282	-0.60920
	setup	CLK (R)	1.23936	1.21575	1.07379
	setup	CLK (R)	0.20587	0.30825	1.33762
	setup	CLK (R)	0.20485	0.31016	1.34062
	setup	CLK (R)	1.23975	1.21222	1.07383

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)	-0.36978	-0.61569	-3.88414
	hold	CLK (R)	-1.11314	-1.22449	-4.64311
	hold	CLK (R)	-1.12032	-1.23033	-4.65426
	hold	CLK (R)	-0.36075	-0.60367	-3.86515
	setup	CLK (R)	0.46585	0.66787	3.96498
	setup	CLK (R)	1.17692	1.27703	4.66450
	setup	CLK (R)	1.42054	1.51637	4.85265
	setup	CLK (R)	0.40506	0.62659	3.89809
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.38192	-0.62504	-3.92950
	hold	CLK (R)	-1.11671	-1.22677	-4.64846
	hold	CLK (R)	-1.12171	-1.23542	-4.67177
	hold	CLK (R)	-0.37246	-0.61420	-3.90934
	setup	CLK (R)	0.47732	0.67741	4.00482
	setup	CLK (R)	1.17755	1.27785	4.68371
	setup	CLK (R)	1.40970	1.50475	4.84956
	setup	CLK (R)	0.41180	0.63858	3.94342

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 ()	0.21228	1.04492	16.50020
	min_pulse_width	CLK ()	0.21228	1.04492	16.50020
	min_pulse_width	CLK ()	0.44909	1.04492	16.50020
	min_pulse_width	CLK ()	0.21228	1.04492	16.50020
	min_pulse_width	CLK ()	0.44909	1.04492	16.50020
	min_pulse_width	CLK ()	0.21228	1.04492	16.50020
	min_pulse_width	CLK ()	0.44527	1.04492	16.50020
	min_pulse_width	CLK ()	0.44527	1.04492	16.50020
	min_pulse_width	CLK ()	0.21228	1.04492	16.50020
	min_pulse_width	CLK ()	0.44909	1.04492	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.21992	1.04492	16.50020
	min_pulse_width	CLK ()	0.21992	1.04492	16.50020
	min_pulse_width	CLK ()	0.62478	1.04492	16.50020
	min_pulse_width	CLK ()	0.21992	1.04492	16.50020
	min_pulse_width	CLK ()	0.62478	1.04492	16.50020
	min_pulse_width	CLK ()	0.21992	1.04492	16.50020
	min_pulse_width	CLK ()	0.62478	1.04492	16.50020
	min_pulse_width	CLK ()	0.62478	1.04492	16.50020
	min_pulse_width	CLK ()	0.21992	1.04492	16.50020
	min_pulse_width	CLK ()	0.62478	1.04492	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 ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	0.45291	1.04492	16.50020
	min_pulse_width	CLK ()	0.94723	1.12989	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	0.94723	1.12989	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	1.14070	1.28053	16.50020
	min_pulse_width	CLK ()	0.94723	1.12989	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	0.94723	1.12989	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.42235	1.04492	16.50020
	min_pulse_width	CLK ()	0.45291	1.04492	16.50020
	min_pulse_width	CLK ()	0.92737	1.11831	16.50020
	min_pulse_width	CLK ()	0.42235	1.04492	16.50020
	min_pulse_width	CLK ()	0.92737	1.11831	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	1.11446	1.25349	16.50020
	min_pulse_width	CLK ()	0.92737	1.11831	16.50020
	min_pulse_width	CLK ()	0.42235	1.04492	16.50020
	min_pulse_width	CLK ()	0.92737	1.11831	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	0.01183	0.01179	0.01178
	CLK	0.01018	0.01014	0.01014
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01352	0.01363	0.01368
	CLK	0.01189	0.01200	0.01205

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01092	0.01078	0.01044
	CLK	0.00985	0.00972	0.00938
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01258	0.01263	0.01228
	CLK	0.01150	0.01158	0.01121

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01093	0.01079	0.01067
	CLK	0.00987	0.00974	0.00962
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01260	0.01264	0.01263
	CLK	0.01152	0.01159	0.01160

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01180	0.01176	0.01158
	CLK	0.01016	0.01011	0.00994
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01349	0.01360	0.01334
	CLK	0.01186	0.01197	0.01171

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00323	0.00307	0.00300
	(DE * SCE)	0.00122	0.00107	0.00100
	(CLK * DE * !SCE)	0.00663	0.00652	0.00642
	(CLK * DE * !SCE)	0.00408	0.00398	0.00388
	(CLK * !DE * !SCE)	0.00073	0.00073	0.00073
	(CLK * !DE * !SCE)	-0.00060	-0.00060	-0.00060
	(!DE * SCE)	0.00073	0.00073	0.00073
	(!DE * SCE)	-0.00061	-0.00061	-0.00060
	(!CLK * DE * !SCE * Q * !Q_N)	0.01147	0.01138	0.01123
	(!CLK * DE * !SCE * Q * !Q_N)	0.00892	0.00883	0.00868
	(!CLK * DE * !SCE * !Q * Q_N)	0.01114	0.01106	0.01089
	(!CLK * DE * !SCE * !Q * Q_N)	0.00858	0.00850	0.00833
	(!CLK * !DE * !SCE)	0.00073	0.00073	0.00073
	(!CLK * !DE * !SCE)	-0.00060	-0.00061	-0.00060
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00327	0.00312	0.00305
	(DE * SCE)	0.00119	0.00103	0.00096
	(CLK * DE * !SCE)	0.00675	0.00665	0.00654
	(CLK * DE * !SCE)	0.00411	0.00400	0.00390
	(CLK * !DE * !SCE)	0.00077	0.00077	0.00076
	(CLK * !DE * !SCE)	-0.00063	-0.00064	-0.00063
	(!DE * SCE)	0.00077	0.00077	0.00077
	(!DE * SCE)	-0.00063	-0.00064	-0.00063
	(!CLK * DE * !SCE * Q * !Q_N)	0.01152	0.01143	0.01128
	(!CLK * DE * !SCE * Q * !Q_N)	0.00888	0.00878	0.00864
	(!CLK * DE * !SCE * !Q * Q_N)	0.01119	0.01110	0.01092
	(!CLK * DE * !SCE * !Q * Q_N)	0.00852	0.00844	0.00825
	(!CLK * !DE * !SCE)	0.00077	0.00077	0.00076
	(!CLK * !DE * !SCE)	-0.00063	-0.00063	-0.00063

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00119	0.00105	0.00103
	(DE * SCE)	0.00321	0.00307	0.00305
	(CLK * DE * !SCE)	0.00226	0.00210	0.00208
	(CLK * DE * !SCE)	0.00482	0.00467	0.00464
	(CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(CLK * !DE * !SCE)	0.00112	0.00111	0.00111
	(!DE * SCE)	-0.00026	-0.00025	-0.00025
	(!DE * SCE)	0.00112	0.00111	0.00111
	(!CLK * DE * !SCE * Q * !Q_N)	0.00662	0.00647	0.00636
	(!CLK * DE * !SCE * Q * !Q_N)	0.00917	0.00901	0.00889
	(!CLK * DE * !SCE * !Q * Q_N)	0.00705	0.00689	0.00679
	(!CLK * DE * !SCE * !Q * Q_N)	0.00961	0.00946	0.00933
	(!CLK * !DE * !SCE)	-0.00025	-0.00025	-0.00025
	(!CLK * !DE * !SCE)	0.00112	0.00111	0.00111
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00102	0.00088	0.00086
	(DE * SCE)	0.00312	0.00299	0.00297
	(CLK * DE * !SCE)	0.00216	0.00200	0.00197
	(CLK * DE * !SCE)	0.00482	0.00467	0.00463
	(CLK * !DE * !SCE)	-0.00026	-0.00026	-0.00026
	(CLK * !DE * !SCE)	0.00116	0.00117	0.00116
	(!DE * SCE)	-0.00026	-0.00026	-0.00026
	(!DE * SCE)	0.00117	0.00117	0.00116
	(!CLK * DE * !SCE * Q * !Q_N)	0.00649	0.00633	0.00621
	(!CLK * DE * !SCE * Q * !Q_N)	0.00914	0.00897	0.00885
	(!CLK * DE * !SCE * !Q * Q_N)	0.00692	0.00676	0.00665
	(!CLK * DE * !SCE * !Q * Q_N)	0.00959	0.00943	0.00931
	(!CLK * !DE * !SCE)	-0.00026	-0.00026	-0.00026
	(!CLK * !DE * !SCE)	0.00116	0.00117	0.00116

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00532	0.00506	0.00495
	SCE	0.00240	0.00213	0.00201
	(CLK * !SCE)	0.00917	0.00891	0.00877
	(CLK * !SCE)	0.00431	0.00406	0.00391
	(!CLK * D * !SCE * Q * !Q_N)	0.00358	0.00340	0.00332
	(!CLK * D * !SCE * Q * !Q_N)	-0.00003	-0.00023	-0.00030
	(!CLK * D * !SCE * !Q * Q_N)	0.01402	0.01377	0.01358
	(!CLK * D * !SCE * !Q * Q_N)	0.00916	0.00891	0.00871
	(!CLK * !D * !SCE * Q * !Q_N)	0.01101	0.01081	0.01066
	(!CLK * !D * !SCE * Q * !Q_N)	0.00864	0.00841	0.00827
	(!CLK * !D * !SCE * !Q * Q_N)	0.00363	0.00345	0.00337
	(!CLK * !D * !SCE * !Q * Q_N)	0.00005	-0.00014	-0.00021
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00521	0.00495	0.00483
	SCE	0.00225	0.00198	0.00186
	(CLK * !SCE)	0.00927	0.00903	0.00888
	(CLK * !SCE)	0.00431	0.00405	0.00391
	(!CLK * D * !SCE * Q * !Q_N)	0.00357	0.00338	0.00331
	(!CLK * D * !SCE * Q * !Q_N)	-0.00011	-0.00030	-0.00037
	(!CLK * D * !SCE * !Q * Q_N)	0.01402	0.01377	0.01359
	(!CLK * D * !SCE * !Q * Q_N)	0.00905	0.00880	0.00862
	(!CLK * !D * !SCE * Q * !Q_N)	0.01089	0.01069	0.01055
	(!CLK * !D * !SCE * Q * !Q_N)	0.00850	0.00828	0.00814
	(!CLK * !D * !SCE * !Q * Q_N)	0.00363	0.00344	0.00338
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00000	-0.00020	-0.00026

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00318	0.00298	0.00285
	SCE	0.00609	0.00590	0.00579
	(CLK * !SCE)	0.00656	0.00639	0.00626
	(CLK * !SCE)	0.00893	0.00877	0.00866
	(!CLK * D * !SCE * Q * !Q_N)	-0.00003	-0.00018	-0.00021
	(!CLK * D * !SCE * Q * !Q_N)	0.00357	0.00344	0.00340
	(!CLK * D * !SCE * !Q * Q_N)	0.00757	0.00735	0.00724
	(!CLK * D * !SCE * !Q * Q_N)	0.01244	0.01222	0.01209
	(!CLK * !D * !SCE * Q * !Q_N)	0.01140	0.01123	0.01110
	(!CLK * !D * !SCE * Q * !Q_N)	0.01376	0.01360	0.01350
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00009	-0.00023	-0.00027
	(!CLK * !D * !SCE * !Q * Q_N)	0.00350	0.00335	0.00332
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00315	0.00296	0.00283
	SCE	0.00610	0.00592	0.00581
	(CLK * !SCE)	0.00661	0.00645	0.00631
	(CLK * !SCE)	0.00900	0.00884	0.00873
	(!CLK * D * !SCE * Q * !Q_N)	-0.00006	-0.00020	-0.00023
	(!CLK * D * !SCE * Q * !Q_N)	0.00361	0.00347	0.00344
	(!CLK * D * !SCE * !Q * Q_N)	0.00743	0.00722	0.00710
	(!CLK * D * !SCE * !Q * Q_N)	0.01240	0.01218	0.01205
	(!CLK * !D * !SCE * Q * !Q_N)	0.01138	0.01122	0.01109
	(!CLK * !D * !SCE * Q * !Q_N)	0.01377	0.01361	0.01351
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00013	-0.00028	-0.00032
	(!CLK * !D * !SCE * !Q * Q_N)	0.00351	0.00337	0.00334

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00357	0.00350	0.00343
	(CLK * SCE)	0.00154	0.00146	0.00140
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00843	0.00836	0.00824
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00641	0.00633	0.00621
	!SCE	0.00058	0.00058	0.00057
	!SCE	-0.00081	-0.00082	-0.00082
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00365	0.00358	0.00351
	(CLK * SCE)	0.00157	0.00150	0.00144
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00840	0.00833	0.00821
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00633	0.00626	0.00614
	!SCE	0.00057	0.00057	0.00057
	!SCE	-0.00084	-0.00085	-0.00085

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00189	0.00182	0.00180
	(CLK * SCE)	0.00392	0.00385	0.00382
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00671	0.00663	0.00657
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00874	0.00867	0.00859
	!SCE	-0.00057	-0.00058	-0.00057
	!SCE	0.00082	0.00082	0.00082
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00187	0.00180	0.00178
	(CLK * SCE)	0.00395	0.00388	0.00385
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00666	0.00658	0.00652
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00873	0.00867	0.00859
	!SCE	-0.00056	-0.00057	-0.00057
	!SCE	0.00085	0.00086	0.00085

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D)	0.00594	0.00571	0.00548
	(CLK * D)	0.00322	0.00298	0.00274
	(CLK * !D)	0.00596	0.00570	0.00548
	(CLK * !D)	0.00324	0.00298	0.00274
	(!CLK * D * SCD * Q * !Q_N)	0.00330	0.00316	0.00309
	(!CLK * D * SCD * Q * !Q_N)	0.00004	-0.00012	-0.00018
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00317	0.00304	0.00296
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00009	-0.00024	-0.00031
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01067	0.01053	0.01033
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00796	0.00781	0.00759
	(!CLK * D * !SCD * Q * !Q_N)	0.01069	0.01055	0.01034
	(!CLK * D * !SCD * Q * !Q_N)	0.00798	0.00782	0.00760
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01051	0.01027	0.01004
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00671	0.00647	0.00624
sky130_fd_sc_hs__sedfxbp_1	**(!CLK * D * !DE * !SCD * !Q * Q_N)**	0.00357	0.00342	0.00336
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00031	0.00014	0.00009
	(!CLK * !D * SCD * !Q * Q_N)	0.01052	0.01028	0.01006
	(!CLK * !D * SCD * !Q * Q_N)	0.00671	0.00647	0.00625
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01075	0.01051	0.01027
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00695	0.00671	0.00648
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00369	0.00354	0.00348
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00043	0.00027	0.00021
	(!CLK * !D * !SCD * !Q * Q_N)	0.00357	0.00341	0.00336
	(!CLK * !D * !SCD * !Q * Q_N)	0.00031	0.00015	0.00009
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00330	0.00316	0.00309
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00004	-0.00012	-0.00018
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01070	0.01055	0.01034
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00799	0.00782	0.00760

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00606	0.00582	0.00557
	(CLK * D)	0.00327	0.00301	0.00276
	(CLK * !D)	0.00608	0.00581	0.00557
	(CLK * !D)	0.00328	0.00300	0.00276
	(!CLK * D * SCD * Q * !Q_N)	0.00336	0.00322	0.00315
	(!CLK * D * SCD * Q * !Q_N)	0.00000	-0.00015	-0.00022
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00325	0.00310	0.00303
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00011	-0.00027	-0.00034
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01077	0.01062	0.01039
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00798	0.00781	0.00758
	(!CLK * D * !SCD * Q * !Q_N)	0.01074	0.01059	0.01036
	(!CLK * D * !SCD * Q * !Q_N)	0.00795	0.00778	0.00754
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01050	0.01024	0.01001
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00656	0.00632	0.00609
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00368	0.00352	0.00346
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00032	0.00015	0.00009
	(!CLK * !D * SCD * !Q * Q_N)	0.01050	0.01024	0.01001
	(!CLK * !D * SCD * !Q * Q_N)	0.00656	0.00632	0.00609
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01075	0.01051	0.01028
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00683	0.00658	0.00636
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00379	0.00364	0.00358
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00043	0.00026	0.00021
	(!CLK * !D * !SCD * !Q * Q_N)	0.00368	0.00352	0.00346
	(!CLK * !D * !SCD * !Q * Q_N)	0.00032	0.00015	0.00009
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00336	0.00322	0.00315
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00000	-0.00015	-0.00022
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01075	0.01058	0.01036
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00796	0.00777	0.00754

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D)	0.00355	0.00368	0.00389
	(CLK * D)	0.00627	0.00640	0.00662
	(CLK * !D)	0.00354	0.00367	0.00389
	(CLK * !D)	0.00626	0.00640	0.00662
	(!CLK * D * SCD * Q * !Q_N)	0.00010	-0.00000	-0.00003
	(!CLK * D * SCD * Q * !Q_N)	0.00335	0.00326	0.00324
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00022	0.00012	0.00010
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00348	0.00339	0.00336
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00835	0.00846	0.00866
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01108	0.01118	0.01138
	(!CLK * D * !SCD * Q * !Q_N)	0.00834	0.00845	0.00863
	(!CLK * D * !SCD * Q * !Q_N)	0.01106	0.01117	0.01137
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00584	0.00559	0.00545
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00964	0.00940	0.00926
sky130_fd_sc_hs__sedfxbp_1	**(!CLK * D * !DE * !SCD * !Q * Q_N)**	-0.00013	-0.00024	-0.00026
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00312	0.00303	0.00300
	(!CLK * !D * SCD * !Q * Q_N)	0.00584	0.00559	0.00545
	(!CLK * !D * SCD * !Q * Q_N)	0.00965	0.00940	0.00925
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00560	0.00535	0.00522
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00941	0.00916	0.00902
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00026	-0.00036	-0.00039
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00300	0.00291	0.00288
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00013	-0.00024	-0.00027
	(!CLK * !D * !SCD * !Q * Q_N)	0.00312	0.00303	0.00300
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00010	-0.00000	-0.00003
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00335	0.00326	0.00324
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00834	0.00845	0.00864
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01106	0.01117	0.01136

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00369	0.00383	0.00405
	(CLK * D)	0.00650	0.00663	0.00685
	(CLK * !D)	0.00369	0.00383	0.00405
	(CLK * !D)	0.00650	0.00662	0.00685
	(!CLK * D * SCD * Q * !Q_N)	0.00017	0.00006	0.00003
	(!CLK * D * SCD * Q * !Q_N)	0.00352	0.00342	0.00340
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00028	0.00017	0.00015
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00363	0.00353	0.00351
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00839	0.00851	0.00871
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01120	0.01130	0.01152
	(!CLK * D * !SCD * Q * !Q_N)	0.00842	0.00854	0.00874
	(!CLK * D * !SCD * Q * !Q_N)	0.01124	0.01133	0.01155
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00585	0.00559	0.00545
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00977	0.00951	0.00937
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00012	-0.00022	-0.00025
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00325	0.00314	0.00311
	(!CLK * !D * SCD * !Q * Q_N)	0.00585	0.00559	0.00544
	(!CLK * !D * SCD * !Q * Q_N)	0.00977	0.00950	0.00936
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00558	0.00532	0.00518
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00951	0.00925	0.00911
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00024	-0.00034	-0.00037
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00313	0.00303	0.00300
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00012	-0.00022	-0.00026
	(!CLK * !D * !SCD * !Q * Q_N)	0.00325	0.00314	0.00311
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00017	0.00006	0.00003
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00352	0.00342	0.00340
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00843	0.00854	0.00875
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01124	0.01134	0.01155

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)	0.00979	0.00942	0.00926
	(SCD * SCE * Q * !Q_N)	0.00706	0.00669	0.00652
	(D * !SCE * Q * !Q_N)	0.00979	0.00942	0.00926
	(D * !SCE * Q * !Q_N)	0.00706	0.00668	0.00652
	(D * !DE * !SCE * !Q * Q_N)	0.00970	0.00933	0.00915
	(D * !DE * !SCE * !Q * Q_N)	0.00696	0.00659	0.00642
	(!SCD * SCE * !Q * Q_N)	0.00970	0.00933	0.00916
	(!SCD * SCE * !Q * Q_N)	0.00697	0.00659	0.00642
	(!D * !SCE * !Q * Q_N)	0.00970	0.00933	0.00915
	(!D * !SCE * !Q * Q_N)	0.00696	0.00659	0.00642
	(!D * !DE * !SCE * Q * !Q_N)	0.00979	0.00942	0.00926
	(!D * !DE * !SCE * Q * !Q_N)	0.00706	0.00668	0.00652
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.00974	0.00935	0.00920
	(SCD * SCE * Q * !Q_N)	0.00701	0.00663	0.00647
	(D * !SCE * Q * !Q_N)	0.00973	0.00934	0.00919
	(D * !SCE * Q * !Q_N)	0.00700	0.00662	0.00646
	(D * !DE * !SCE * !Q * Q_N)	0.00972	0.00935	0.00917
	(D * !DE * !SCE * !Q * Q_N)	0.00699	0.00661	0.00644
	(!SCD * SCE * !Q * Q_N)	0.00973	0.00936	0.00918
	(!SCD * SCE * !Q * Q_N)	0.00700	0.00662	0.00645
	(!D * !SCE * !Q * Q_N)	0.00972	0.00935	0.00917
	(!D * !SCE * !Q * Q_N)	0.00699	0.00661	0.00644
	(!D * !DE * !SCE * Q * !Q_N)	0.00973	0.00935	0.00919
	(!D * !DE * !SCE * Q * !Q_N)	0.00700	0.00662	0.00646

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)	0.00536	0.00508	0.00491
	(SCD * SCE * Q * !Q_N)	0.00811	0.00781	0.00765
	(SCD * SCE * !Q * Q_N)	0.01023	0.00992	0.00960
	(SCD * SCE * !Q * Q_N)	0.01297	0.01264	0.01233
	(D * DE * !SCE * !Q * Q_N)	0.01019	0.00988	0.00957
	(D * DE * !SCE * !Q * Q_N)	0.01293	0.01261	0.01231
	(D * !SCE * Q * !Q_N)	0.00537	0.00509	0.00491
	(D * !SCE * Q * !Q_N)	0.00811	0.00782	0.00765
	(D * !DE * !SCE * !Q * Q_N)	0.00532	0.00504	0.00489
	(D * !DE * !SCE * !Q * Q_N)	0.00806	0.00777	0.00763
	(!SCD * SCE * Q * !Q_N)	0.01105	0.01074	0.01097
	(!SCD * SCE * Q * !Q_N)	0.01380	0.01347	0.01371
	(!SCD * SCE * !Q * Q_N)	0.00531	0.00504	0.00489
	(!SCD * SCE * !Q * Q_N)	0.00806	0.00776	0.00763
	(!D * DE * !SCE * Q * !Q_N)	0.01106	0.01075	0.01097
	(!D * DE * !SCE * Q * !Q_N)	0.01380	0.01347	0.01370
	(!D * !SCE * !Q * Q_N)	0.00532	0.00504	0.00489
	(!D * !SCE * !Q * Q_N)	0.00806	0.00777	0.00762
	(!D * !DE * !SCE * Q * !Q_N)	0.00537	0.00509	0.00491
	(!D * !DE * !SCE * Q * !Q_N)	0.00811	0.00782	0.00765

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00545	0.00518	0.00501
	(SCD * SCE * Q * !Q_N)	0.00819	0.00790	0.00774
	(SCD * SCE * !Q * Q_N)	0.01013	0.00983	0.00951
	(SCD * SCE * !Q * Q_N)	0.01287	0.01255	0.01225
	(D * DE * !SCE * !Q * Q_N)	0.01010	0.00980	0.00950
	(D * DE * !SCE * !Q * Q_N)	0.01284	0.01252	0.01223
	(D * !SCE * Q * !Q_N)	0.00546	0.00519	0.00503
	(D * !SCE * Q * !Q_N)	0.00820	0.00791	0.00776
	(D * !DE * !SCE * !Q * Q_N)	0.00533	0.00506	0.00491
	(D * !DE * !SCE * !Q * Q_N)	0.00807	0.00778	0.00763
	(!SCD * SCE * Q * !Q_N)	0.01111	0.01080	0.01101
	(!SCD * SCE * Q * !Q_N)	0.01385	0.01353	0.01375
	(!SCD * SCE * !Q * Q_N)	0.00532	0.00505	0.00490
	(!SCD * SCE * !Q * Q_N)	0.00806	0.00777	0.00764
	(!D * DE * !SCE * Q * !Q_N)	0.01112	0.01082	0.01103
	(!D * DE * !SCE * Q * !Q_N)	0.01386	0.01354	0.01376
	(!D * !SCE * !Q * Q_N)	0.00533	0.00506	0.00491
	(!D * !SCE * !Q * Q_N)	0.00807	0.00779	0.00763
	(!D * !DE * !SCE * Q * !Q_N)	0.00546	0.00519	0.00503
	(!D * !DE * !SCE * Q * !Q_N)	0.00820	0.00791	0.00776

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT					OUTPUT
D	DE	SCD	SCE	CLK	Q
x	0	x	0	R	IQ
x	x	0	1	R	0
x	x	1	1	R	1
0	1	0	x	R	0
0	1	1	0	R	0
1	1	x	0	R	1
x	x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxtp_1	51.14880
sky130_fd_sc_hs__sedfxtp_2	54.34560
sky130_fd_sc_hs__sedfxtp_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	DE	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sedfxtp_1	0.00187	0.00359	0.00164	0.00353	0.00263	0.36121
sky130_fd_sc_hs__sedfxtp_2	0.00196	0.00361	0.00167	0.00357	0.00265	0.71537
sky130_fd_sc_hs__sedfxtp_4	0.00197	0.00359	0.00167	0.00355	0.00275	1.38899

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	0.00110	0.00143
sky130_fd_sc_hs__sedfxtp_2	0.00000	0.00117	0.00152
sky130_fd_sc_hs__sedfxtp_4	0.00000	0.00131	0.00172

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)**	0.47123	1.47982	8.96741
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.47815	1.34781	8.99642
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.52637	1.28950	9.07428

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.50845	1.08496	3.49312
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.62279	1.21360	3.69296
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.86679	1.47569	4.09486

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)	-0.28312	-0.42210	-1.78511
	setup	CLK (R)	0.37950	0.47628	1.87552
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.28697	-0.42479	-1.78753
	setup	CLK (R)	0.38291	0.47878	1.87672
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.28905	-0.42627	-1.79909
	setup	CLK (R)	0.37982	0.47522	1.88433

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)	-1.61722	-1.72406	-5.40938
	setup	CLK (R)	1.88608	1.98172	5.53425
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-1.61995	-1.72326	-5.40640
	setup	CLK (R)	1.88488	1.97491	5.53159
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-1.62997	-1.74354	-5.43003
	setup	CLK (R)	1.88220	1.96916	5.54177

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)	-0.07536	-0.08694	-0.23549
	setup	CLK (R)	1.95423	1.94779	1.84784
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.08133	-0.08694	-0.23431
	setup	CLK (R)	1.94944	1.94031	1.84810
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07536	-0.08694	-0.24237
	setup	CLK (R)	1.94623	1.93361	1.85196

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)	-0.47288	-0.71224	-3.90765
	setup	CLK (R)	1.66547	1.79816	5.67340
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.47382	-0.71458	-3.90566
	setup	CLK (R)	1.66647	1.79896	5.65951
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.47483	-0.71470	-3.90537
	setup	CLK (R)	1.67903	1.80918	5.67789

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)	-0.07536	-0.08694	-0.23549
	hold	CLK (R)	-0.43963	-0.53817	-1.05316
	setup	CLK (R)	0.37744	0.45707	1.84784
	setup	CLK (R)	1.95423	1.94779	1.78544
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.08133	-0.08694	-0.23431
	hold	CLK (R)	-0.44017	-0.52770	-1.03078
	setup	CLK (R)	0.37971	0.45753	1.84810
	setup	CLK (R)	1.94944	1.94031	1.77832
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07536	-0.08694	-0.24237
	hold	CLK (R)	-0.44116	-0.54095	-1.04528
	setup	CLK (R)	0.37822	0.45753	1.85196
	setup	CLK (R)	1.94623	1.93361	1.78163

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)	-1.60011	-1.75479	-5.64409
	hold	CLK (R)	-0.47288	-0.71224	-3.90765
	setup	CLK (R)	1.66547	1.79816	5.67340
	setup	CLK (R)	0.51322	0.73386	3.94005
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-1.59971	-1.74696	-5.63327
	hold	CLK (R)	-0.47382	-0.71458	-3.90566
	setup	CLK (R)	1.66647	1.79896	5.65951
	setup	CLK (R)	0.51413	0.73873	3.93580
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-1.61171	-1.76680	-5.66112
	hold	CLK (R)	-0.47483	-0.71470	-3.90537
	setup	CLK (R)	1.67903	1.80918	5.67789
	setup	CLK (R)	0.51561	0.73522	3.93490

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)	-0.16024	-0.27305	-1.40469
	setup	CLK (R)	0.22270	0.31435	1.50272
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16012	-0.27534	-1.40148
	setup	CLK (R)	0.22391	0.31394	1.49605
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16091	-0.27536	-1.42056
	setup	CLK (R)	0.22005	0.31394	1.50895

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)	-0.97648	-1.11481	-4.87877
	setup	CLK (R)	1.23002	1.35321	5.01759
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.97374	-1.10747	-4.86336
	setup	CLK (R)	1.21926	1.33869	5.00414
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.98806	-1.12500	-4.90204
	setup	CLK (R)	1.21462	1.33285	5.02115

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)	-0.00880	0.03416	0.57672
	setup	CLK (R)	1.25793	1.23422	1.34684
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.01263	0.02730	0.60269
	setup	CLK (R)	1.24764	1.21537	1.34318
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.00738	0.03416	0.57479
	setup	CLK (R)	1.24287	1.21668	1.36091

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)	-0.36863	-0.61032	-3.91108
	setup	CLK (R)	1.41698	1.51516	4.85879
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.37123	-0.61320	-3.90774
	setup	CLK (R)	1.40734	1.50451	4.84605
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.37260	-0.61469	-3.91380
	setup	CLK (R)	1.41076	1.50330	4.87264

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)	-1.00429	-0.99667	-0.96893
	hold	CLK (R)	-0.00880	0.03416	0.57672
	hold	CLK (R)	-0.14019	-0.26469	-1.24022
	hold	CLK (R)	-0.32660	-0.41225	-0.61294
	setup	CLK (R)	1.25785	1.23422	1.08963
	setup	CLK (R)	0.20281	0.30776	1.34684
	setup	CLK (R)	0.20267	0.30776	1.34677
	setup	CLK (R)	1.25793	1.23351	1.09442
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.99844	-0.98387	-0.95658
	hold	CLK (R)	-0.01263	0.02730	0.60269
	hold	CLK (R)	-0.14263	-0.26490	-1.23848
	hold	CLK (R)	-0.32324	-0.40410	-0.59847
	setup	CLK (R)	1.24764	1.21491	1.07087
	setup	CLK (R)	0.20379	0.30836	1.34318
	setup	CLK (R)	0.20472	0.30833	1.34130
	setup	CLK (R)	1.24724	1.21537	1.07265
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-1.01494	-1.00335	-0.97507
	hold	CLK (R)	-0.00738	0.03416	0.57479
	hold	CLK (R)	-0.14193	-0.26798	-1.26171
	hold	CLK (R)	-0.32766	-0.40877	-0.61732
	setup	CLK (R)	1.24287	1.21668	1.07827
	setup	CLK (R)	0.20368	0.30836	1.36091
	setup	CLK (R)	0.20361	0.30836	1.36049
	setup	CLK (R)	1.24231	1.21659	1.07925

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)	-0.37535	-0.62162	-3.93256
	hold	CLK (R)	-1.12017	-1.23241	-4.66413
	hold	CLK (R)	-1.12341	-1.23534	-4.67016
	hold	CLK (R)	-0.36863	-0.61032	-3.91108
	setup	CLK (R)	0.47052	0.67506	4.01257
	setup	CLK (R)	1.18144	1.28112	4.68568
	setup	CLK (R)	1.41698	1.51516	4.85879
	setup	CLK (R)	0.40929	0.63499	3.94612
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.37967	-0.62197	-3.92749
	hold	CLK (R)	-1.11434	-1.22377	-4.65043
	hold	CLK (R)	-1.11742	-1.23032	-4.66284
	hold	CLK (R)	-0.37123	-0.61320	-3.90774
	setup	CLK (R)	0.47332	0.67351	4.00940
	setup	CLK (R)	1.17467	1.27287	4.67658
	setup	CLK (R)	1.40734	1.50451	4.84605
	setup	CLK (R)	0.40931	0.63735	3.94433
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.38059	-0.62628	-3.93202
	hold	CLK (R)	-1.13255	-1.24449	-4.68480
	hold	CLK (R)	-1.13739	-1.24551	-4.69986
	hold	CLK (R)	-0.37260	-0.61469	-3.91380
	setup	CLK (R)	0.47106	0.67218	4.01102
	setup	CLK (R)	1.19463	1.29332	4.71063
	setup	CLK (R)	1.41076	1.50330	4.87264
	setup	CLK (R)	0.41081	0.63594	3.94458

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 ()**	0.20846	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.20846	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.41089	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.20846	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.41089	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.20846	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.40707	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.40707	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.20846	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.41089	1.04492	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.21610	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.21610	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.57895	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.21610	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.57895	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.21610	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.57513	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.57513	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.21610	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.57895	1.04492	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.23519	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.23519	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.88450	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.23519	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.88450	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.23519	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.88069	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.88069	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.23519	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.88450	1.04492	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 ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	0.45291	1.04492	16.50020
	min_pulse_width	CLK ()	0.92956	1.12603	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	0.92956	1.12603	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	1.11534	1.26508	16.50020
	min_pulse_width	CLK ()	0.92956	1.12603	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	0.92956	1.12603	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	0.45291	1.04492	16.50020
	min_pulse_width	CLK ()	0.92942	1.11831	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	0.92327	1.11831	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	1.10751	1.25349	16.50020
	min_pulse_width	CLK ()	0.92942	1.11831	16.50020
	min_pulse_width	CLK ()	0.41853	1.04492	16.50020
	min_pulse_width	CLK ()	0.92327	1.11831	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.41089	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.44527	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.89343	1.09900	16.50020
	min_pulse_width	**CLK ()**	0.41089	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.89343	1.09900	16.50020
	min_pulse_width	**CLK ()**	0.41089	1.04492	16.50020
	min_pulse_width	**CLK ()**	1.07365	1.22259	16.50020
	min_pulse_width	**CLK ()**	0.89343	1.09900	16.50020
	min_pulse_width	**CLK ()**	0.41089	1.04492	16.50020
	min_pulse_width	**CLK ()**	0.89343	1.09900	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	0.02041	0.02023	0.02026
	CLK	0.01722	0.01704	0.01708
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02241	0.02240	0.02252
	CLK	0.01919	0.01917	0.01935
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02619	0.02646	0.02682
	CLK	0.02287	0.02315	0.02363

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.01880	0.01850	0.01825
	CLK	0.01663	0.01633	0.01606
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02067	0.02061	0.02044
	CLK	0.01850	0.01845	0.01824
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02362	0.02396	0.02410
	CLK	0.02135	0.02169	0.02176

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00318	0.00303	0.00295
	(DE * SCE)	0.00117	0.00102	0.00096
	(CLK * DE * !SCE)	0.00662	0.00651	0.00641
	(CLK * DE * !SCE)	0.00405	0.00396	0.00385
	(CLK * !DE * !SCE)	0.00073	0.00074	0.00073
	(CLK * !DE * !SCE)	-0.00061	-0.00062	-0.00061
	(!DE * SCE)	0.00074	0.00074	0.00073
	(!DE * SCE)	-0.00061	-0.00061	-0.00061
	(!CLK * DE * !SCE * Q)	0.01147	0.01138	0.01122
	(!CLK * DE * !SCE * Q)	0.00890	0.00882	0.00867
	(!CLK * DE * !SCE * !Q)	0.01114	0.01105	0.01087
	(!CLK * DE * !SCE * !Q)	0.00855	0.00847	0.00829
	(!CLK * !DE * !SCE)	0.00073	0.00074	0.00073
	(!CLK * !DE * !SCE)	-0.00061	-0.00062	-0.00061
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00329	0.00313	0.00306
	(DE * SCE)	0.00118	0.00102	0.00095
	(CLK * DE * !SCE)	0.00673	0.00662	0.00652
	(CLK * DE * !SCE)	0.00406	0.00395	0.00384
	(CLK * !DE * !SCE)	0.00077	0.00078	0.00077
	(CLK * !DE * !SCE)	-0.00064	-0.00065	-0.00064
	(!DE * SCE)	0.00077	0.00078	0.00077
	(!DE * SCE)	-0.00064	-0.00065	-0.00064
	(!CLK * DE * !SCE * Q)	0.01155	0.01146	0.01131
	(!CLK * DE * !SCE * Q)	0.00888	0.00879	0.00864
	(!CLK * DE * !SCE * !Q)	0.01126	0.01117	0.01099
	(!CLK * DE * !SCE * !Q)	0.00857	0.00848	0.00830
	(!CLK * !DE * !SCE)	0.00077	0.00078	0.00077
	(!CLK * !DE * !SCE)	-0.00064	-0.00065	-0.00064

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00330	0.00315	0.00307
	(DE * SCE)	0.00119	0.00103	0.00096
	(CLK * DE * !SCE)	0.00677	0.00667	0.00656
	(CLK * DE * !SCE)	0.00410	0.00400	0.00389
	(CLK * !DE * !SCE)	0.00077	0.00078	0.00077
	(CLK * !DE * !SCE)	-0.00065	-0.00065	-0.00064
	(!DE * SCE)	0.00077	0.00078	0.00077
	(!DE * SCE)	-0.00064	-0.00065	-0.00064
	(!CLK * DE * !SCE * Q)	0.01147	0.01138	0.01122
	(!CLK * DE * !SCE * Q)	0.00880	0.00871	0.00855
	(!CLK * DE * !SCE * !Q)	0.01114	0.01106	0.01088
	(!CLK * DE * !SCE * !Q)	0.00845	0.00837	0.00818
	(!CLK * !DE * !SCE)	0.00077	0.00078	0.00077
	(!CLK * !DE * !SCE)	-0.00065	-0.00065	-0.00064

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00111	0.00098	0.00096
	(DE * SCE)	0.00313	0.00300	0.00298
	(CLK * DE * !SCE)	0.00220	0.00204	0.00202
	(CLK * DE * !SCE)	0.00478	0.00463	0.00460
	(CLK * !DE * !SCE)	-0.00026	-0.00026	-0.00026
	(CLK * !DE * !SCE)	0.00112	0.00112	0.00111
	(!DE * SCE)	-0.00026	-0.00026	-0.00026
	(!DE * SCE)	0.00112	0.00112	0.00112
	(!CLK * DE * !SCE * Q)	0.00649	0.00634	0.00622
	(!CLK * DE * !SCE * Q)	0.00906	0.00890	0.00878
	(!CLK * DE * !SCE * !Q)	0.00692	0.00677	0.00666
	(!CLK * DE * !SCE * !Q)	0.00951	0.00935	0.00923
	(!CLK * !DE * !SCE)	-0.00026	-0.00026	-0.00026
	(!CLK * !DE * !SCE)	0.00112	0.00112	0.00111
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00107	0.00093	0.00091
	(DE * SCE)	0.00320	0.00306	0.00304
	(CLK * DE * !SCE)	0.00215	0.00198	0.00196
	(CLK * DE * !SCE)	0.00484	0.00468	0.00465
	(CLK * !DE * !SCE)	-0.00025	-0.00026	-0.00026
	(CLK * !DE * !SCE)	0.00118	0.00118	0.00118
	(!DE * SCE)	-0.00026	-0.00026	-0.00026
	(!DE * SCE)	0.00119	0.00119	0.00118
	(!CLK * DE * !SCE * Q)	0.00645	0.00629	0.00617
	(!CLK * DE * !SCE * Q)	0.00913	0.00896	0.00883
	(!CLK * DE * !SCE * !Q)	0.00684	0.00668	0.00657
	(!CLK * DE * !SCE * !Q)	0.00954	0.00937	0.00926
	(!CLK * !DE * !SCE)	-0.00025	-0.00026	-0.00026
	(!CLK * !DE * !SCE)	0.00117	0.00118	0.00118

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00102	0.00088	0.00086
	(DE * SCE)	0.00315	0.00301	0.00299
	(CLK * DE * !SCE)	0.00229	0.00213	0.00210
	(CLK * DE * !SCE)	0.00498	0.00482	0.00479
	(CLK * !DE * !SCE)	-0.00025	-0.00026	-0.00026
	(CLK * !DE * !SCE)	0.00118	0.00119	0.00118
	(!DE * SCE)	-0.00026	-0.00026	-0.00026
	(!DE * SCE)	0.00119	0.00119	0.00118
	(!CLK * DE * !SCE * Q)	0.00651	0.00635	0.00623
	(!CLK * DE * !SCE * Q)	0.00919	0.00902	0.00889
	(!CLK * DE * !SCE * !Q)	0.00694	0.00678	0.00667
	(!CLK * DE * !SCE * !Q)	0.00964	0.00947	0.00935
	(!CLK * !DE * !SCE)	-0.00026	-0.00026	-0.00026
	(!CLK * !DE * !SCE)	0.00118	0.00119	0.00118

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00531	0.00505	0.00492
	SCE	0.00231	0.00204	0.00193
	(CLK * !SCE)	0.00921	0.00896	0.00881
	(CLK * !SCE)	0.00427	0.00401	0.00386
	(!CLK * D * !SCE * Q)	0.00362	0.00343	0.00335
	(!CLK * D * !SCE * Q)	-0.00007	-0.00026	-0.00033
	(!CLK * D * !SCE * !Q)	0.01405	0.01379	0.01361
	(!CLK * D * !SCE * !Q)	0.00911	0.00886	0.00866
	(!CLK * !D * !SCE * Q)	0.01092	0.01071	0.01056
	(!CLK * !D * !SCE * Q)	0.00848	0.00825	0.00813
	(!CLK * !D * !SCE * !Q)	0.00366	0.00347	0.00340
	(!CLK * !D * !SCE * !Q)	0.00002	-0.00018	-0.00024

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00533	0.00507	0.00494
	SCE	0.00231	0.00204	0.00192
	(CLK * !SCE)	0.00934	0.00909	0.00894
	(CLK * !SCE)	0.00430	0.00404	0.00389
	(!CLK * D * !SCE * Q)	0.00363	0.00345	0.00337
	(!CLK * D * !SCE * Q)	-0.00008	-0.00029	-0.00036
	(!CLK * D * !SCE * !Q)	0.01415	0.01390	0.01370
	(!CLK * D * !SCE * !Q)	0.00911	0.00886	0.00865
	(!CLK * !D * !SCE * Q)	0.01092	0.01071	0.01057
	(!CLK * !D * !SCE * Q)	0.00847	0.00824	0.00811
	(!CLK * !D * !SCE * !Q)	0.00369	0.00349	0.00343
	(!CLK * !D * !SCE * !Q)	-0.00001	-0.00021	-0.00028
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00525	0.00499	0.00487
	SCE	0.00226	0.00199	0.00187
	(CLK * !SCE)	0.00935	0.00911	0.00895
	(CLK * !SCE)	0.00434	0.00408	0.00393
	(!CLK * D * !SCE * Q)	0.00362	0.00344	0.00336
	(!CLK * D * !SCE * Q)	-0.00007	-0.00029	-0.00036
	(!CLK * D * !SCE * !Q)	0.01401	0.01375	0.01356
	(!CLK * D * !SCE * !Q)	0.00900	0.00874	0.00856
	(!CLK * !D * !SCE * Q)	0.01097	0.01077	0.01064
	(!CLK * !D * !SCE * Q)	0.00854	0.00832	0.00819
	(!CLK * !D * !SCE * !Q)	0.00368	0.00348	0.00342
	(!CLK * !D * !SCE * !Q)	-0.00001	-0.00020	-0.00027

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00310	0.00291	0.00277
	SCE	0.00609	0.00590	0.00579
	(CLK * !SCE)	0.00652	0.00635	0.00623
	(CLK * !SCE)	0.00894	0.00878	0.00868
	(!CLK * D * !SCE * Q)	-0.00005	-0.00020	-0.00023
	(!CLK * D * !SCE * Q)	0.00362	0.00348	0.00345
	(!CLK * D * !SCE * !Q)	0.00745	0.00723	0.00711
	(!CLK * D * !SCE * !Q)	0.01239	0.01218	0.01204
	(!CLK * !D * !SCE * Q)	0.01137	0.01120	0.01108
	(!CLK * !D * !SCE * Q)	0.01380	0.01363	0.01353
	(!CLK * !D * !SCE * !Q)	-0.00010	-0.00025	-0.00029
	(!CLK * !D * !SCE * !Q)	0.00355	0.00341	0.00336
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00313	0.00294	0.00280
	SCE	0.00613	0.00594	0.00584
	(CLK * !SCE)	0.00654	0.00638	0.00626
	(CLK * !SCE)	0.00898	0.00882	0.00873
	(!CLK * D * !SCE * Q)	-0.00007	-0.00022	-0.00025
	(!CLK * D * !SCE * Q)	0.00366	0.00352	0.00349
	(!CLK * D * !SCE * !Q)	0.00740	0.00718	0.00705
	(!CLK * D * !SCE * !Q)	0.01244	0.01222	0.01207
	(!CLK * !D * !SCE * Q)	0.01137	0.01120	0.01109
	(!CLK * !D * !SCE * Q)	0.01381	0.01365	0.01356
	(!CLK * !D * !SCE * !Q)	-0.00012	-0.00027	-0.00031
	(!CLK * !D * !SCE * !Q)	0.00359	0.00345	0.00340

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00314	0.00295	0.00282
	SCE	0.00612	0.00594	0.00583
	(CLK * !SCE)	0.00659	0.00642	0.00631
	(CLK * !SCE)	0.00901	0.00885	0.00876
	(!CLK * D * !SCE * Q)	-0.00006	-0.00021	-0.00024
	(!CLK * D * !SCE * Q)	0.00364	0.00351	0.00347
	(!CLK * D * !SCE * !Q)	0.00750	0.00728	0.00717
	(!CLK * D * !SCE * !Q)	0.01252	0.01231	0.01217
	(!CLK * !D * !SCE * Q)	0.01129	0.01113	0.01101
	(!CLK * !D * !SCE * Q)	0.01372	0.01356	0.01347
	(!CLK * !D * !SCE * !Q)	-0.00012	-0.00027	-0.00031
	(!CLK * !D * !SCE * !Q)	0.00357	0.00343	0.00338

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00357	0.00351	0.00344
	(CLK * SCE)	0.00149	0.00142	0.00136
	(!CLK * SCE)	0.00843	0.00836	0.00824
	(!CLK * SCE)	0.00634	0.00627	0.00616
	!SCE	0.00056	0.00056	0.00056
	!SCE	-0.00085	-0.00087	-0.00087
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00365	0.00359	0.00352
	(CLK * SCE)	0.00154	0.00147	0.00141
	(!CLK * SCE)	0.00848	0.00841	0.00828
	(!CLK * SCE)	0.00637	0.00630	0.00616
	!SCE	0.00058	0.00059	0.00058
	!SCE	-0.00087	-0.00088	-0.00088
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00366	0.00359	0.00353
	(CLK * SCE)	0.00156	0.00149	0.00142
	(!CLK * SCE)	0.00834	0.00827	0.00813
	(!CLK * SCE)	0.00623	0.00617	0.00603
	!SCE	0.00057	0.00058	0.00057
	!SCE	-0.00086	-0.00088	-0.00087

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00191	0.00184	0.00182
	(CLK * SCE)	0.00399	0.00393	0.00390
	(!CLK * SCE)	0.00666	0.00658	0.00653
	(!CLK * SCE)	0.00875	0.00868	0.00861
	!SCE	-0.00055	-0.00056	-0.00056
	!SCE	0.00086	0.00087	0.00087
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00185	0.00178	0.00176
	(CLK * SCE)	0.00396	0.00389	0.00387
	(!CLK * SCE)	0.00657	0.00649	0.00644
	(!CLK * SCE)	0.00868	0.00862	0.00854
	!SCE	-0.00057	-0.00058	-0.00058
	!SCE	0.00088	0.00088	0.00088
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00208	0.00201	0.00199
	(CLK * SCE)	0.00418	0.00411	0.00409
	(!CLK * SCE)	0.00675	0.00668	0.00661
	(!CLK * SCE)	0.00886	0.00879	0.00870
	!SCE	-0.00056	-0.00058	-0.00057
	!SCE	0.00088	0.00088	0.00087

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00599	0.00575	0.00552
	(CLK * D)	0.00332	0.00306	0.00283
	(CLK * !D)	0.00598	0.00572	0.00550
	(CLK * !D)	0.00331	0.00303	0.00281
	(!CLK * D * SCD * Q)	0.00320	0.00307	0.00300
	(!CLK * D * SCD * Q)	-0.00004	-0.00018	-0.00024
	(!CLK * D * DE * SCD * !Q)	0.00310	0.00297	0.00290
	(!CLK * D * DE * SCD * !Q)	-0.00014	-0.00028	-0.00034
	(!CLK * D * DE * !SCD * !Q)	0.01067	0.01052	0.01027
	(!CLK * D * DE * !SCD * !Q)	0.00799	0.00783	0.00758
	(!CLK * D * !SCD * Q)	0.01063	0.01047	0.01024
	(!CLK * D * !SCD * Q)	0.00796	0.00779	0.00755
	(!CLK * D * !DE * SCD * !Q)	0.01041	0.01018	0.00994
	(!CLK * D * !DE * SCD * !Q)	0.00662	0.00638	0.00615
	(!CLK * D * !DE * !SCD * !Q)	0.00355	0.00341	0.00335
	(!CLK * D * !DE * !SCD * !Q)	0.00032	0.00016	0.00011
	(!CLK * !D * SCD * !Q)	0.01041	0.01017	0.00994
	(!CLK * !D * SCD * !Q)	0.00660	0.00638	0.00615
	(!CLK * !D * DE * SCD * Q)	0.01065	0.01041	0.01020
	(!CLK * !D * DE * SCD * Q)	0.00685	0.00662	0.00640
	(!CLK * !D * DE * !SCD * Q)	0.00365	0.00351	0.00345
	(!CLK * !D * DE * !SCD * Q)	0.00042	0.00027	0.00021
	(!CLK * !D * !SCD * !Q)	0.00355	0.00341	0.00335
	(!CLK * !D * !SCD * !Q)	0.00032	0.00016	0.00011
	(!CLK * !D * !DE * SCD * Q)	0.00320	0.00307	0.00300
	(!CLK * !D * !DE * SCD * Q)	-0.00004	-0.00019	-0.00024
	(!CLK * !D * !DE * !SCD * Q)	0.01064	0.01047	0.01024
	(!CLK * !D * !DE * !SCD * Q)	0.00796	0.00778	0.00755

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00599	0.00575	0.00553
	(CLK * D)	0.00327	0.00301	0.00278
	(CLK * !D)	0.00601	0.00576	0.00554
	(CLK * !D)	0.00330	0.00302	0.00279
	(!CLK * D * SCD * Q)	0.00325	0.00311	0.00304
	(!CLK * D * SCD * Q)	-0.00004	-0.00019	-0.00026
	(!CLK * D * DE * SCD * !Q)	0.00316	0.00301	0.00295
	(!CLK * D * DE * SCD * !Q)	-0.00014	-0.00029	-0.00035
	(!CLK * D * DE * !SCD * !Q)	0.01064	0.01048	0.01024
	(!CLK * D * DE * !SCD * !Q)	0.00791	0.00775	0.00750
	(!CLK * D * !SCD * Q)	0.01063	0.01047	0.01024
	(!CLK * D * !SCD * Q)	0.00790	0.00773	0.00749
	(!CLK * D * !DE * SCD * !Q)	0.01048	0.01023	0.01000
	(!CLK * D * !DE * SCD * !Q)	0.00662	0.00638	0.00615
	(!CLK * D * !DE * !SCD * !Q)	0.00359	0.00344	0.00339
	(!CLK * D * !DE * !SCD * !Q)	0.00031	0.00015	0.00009
	(!CLK * !D * SCD * !Q)	0.01048	0.01024	0.01000
	(!CLK * !D * SCD * !Q)	0.00661	0.00638	0.00615
	(!CLK * !D * DE * SCD * Q)	0.01068	0.01044	0.01022
	(!CLK * !D * DE * SCD * Q)	0.00682	0.00659	0.00636
	(!CLK * !D * DE * !SCD * Q)	0.00369	0.00354	0.00348
	(!CLK * !D * DE * !SCD * Q)	0.00040	0.00025	0.00018
	(!CLK * !D * !SCD * !Q)	0.00360	0.00344	0.00339
	(!CLK * !D * !SCD * !Q)	0.00031	0.00015	0.00009
	(!CLK * !D * !DE * SCD * Q)	0.00325	0.00311	0.00304
	(!CLK * !D * !DE * SCD * Q)	-0.00004	-0.00019	-0.00026
	(!CLK * !D * !DE * !SCD * Q)	0.01064	0.01047	0.01023
	(!CLK * !D * !DE * !SCD * Q)	0.00791	0.00773	0.00749

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00617	0.00595	0.00572
	(CLK * D)	0.00348	0.00323	0.00300
	(CLK * !D)	0.00619	0.00593	0.00573
	(CLK * !D)	0.00349	0.00324	0.00300
	(!CLK * D * SCD * Q)	0.00322	0.00308	0.00302
	(!CLK * D * SCD * Q)	-0.00004	-0.00019	-0.00025
	(!CLK * D * DE * SCD * !Q)	0.00313	0.00299	0.00292
	(!CLK * D * DE * SCD * !Q)	-0.00014	-0.00029	-0.00035
	(!CLK * D * DE * !SCD * !Q)	0.01079	0.01064	0.01040
	(!CLK * D * DE * !SCD * !Q)	0.00808	0.00792	0.00768
	(!CLK * D * !SCD * Q)	0.01075	0.01060	0.01037
	(!CLK * D * !SCD * Q)	0.00805	0.00788	0.00764
	(!CLK * D * !DE * SCD * !Q)	0.01034	0.01011	0.00989
	(!CLK * D * !DE * SCD * !Q)	0.00652	0.00628	0.00606
	(!CLK * D * !DE * !SCD * !Q)	0.00357	0.00343	0.00337
	(!CLK * D * !DE * !SCD * !Q)	0.00031	0.00016	0.00010
	(!CLK * !D * SCD * !Q)	0.01034	0.01010	0.00988
	(!CLK * !D * SCD * !Q)	0.00651	0.00628	0.00606
	(!CLK * !D * DE * SCD * Q)	0.01056	0.01034	0.01011
	(!CLK * !D * DE * SCD * Q)	0.00674	0.00651	0.00629
	(!CLK * !D * DE * !SCD * Q)	0.00367	0.00353	0.00347
	(!CLK * !D * DE * !SCD * Q)	0.00041	0.00025	0.00019
	(!CLK * !D * !SCD * !Q)	0.00357	0.00343	0.00337
	(!CLK * !D * !SCD * !Q)	0.00031	0.00016	0.00010
	(!CLK * !D * !DE * SCD * Q)	0.00322	0.00308	0.00302
	(!CLK * !D * !DE * SCD * Q)	-0.00004	-0.00019	-0.00025
	(!CLK * !D * !DE * !SCD * Q)	0.01076	0.01059	0.01035
	(!CLK * !D * !DE * !SCD * Q)	0.00805	0.00788	0.00764

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00370	0.00384	0.00406
	(CLK * D)	0.00637	0.00652	0.00674
	(CLK * !D)	0.00372	0.00386	0.00408
	(CLK * !D)	0.00640	0.00654	0.00677
	(!CLK * D * SCD * Q)	0.00024	0.00014	0.00012
	(!CLK * D * SCD * Q)	0.00346	0.00338	0.00336
	(!CLK * D * DE * SCD * !Q)	0.00034	0.00025	0.00022
	(!CLK * D * DE * SCD * !Q)	0.00357	0.00348	0.00346
	(!CLK * D * DE * !SCD * !Q)	0.00850	0.00861	0.00882
	(!CLK * D * DE * !SCD * !Q)	0.01117	0.01129	0.01150
	(!CLK * D * !SCD * Q)	0.00853	0.00865	0.00884
	(!CLK * D * !SCD * Q)	0.01121	0.01133	0.01153
	(!CLK * D * !DE * SCD * !Q)	0.00584	0.00559	0.00546
	(!CLK * D * !DE * SCD * !Q)	0.00963	0.00939	0.00925
	(!CLK * D * !DE * !SCD * !Q)	-0.00008	-0.00017	-0.00020
	(!CLK * D * !DE * !SCD * !Q)	0.00315	0.00307	0.00304
	(!CLK * !D * SCD * !Q)	0.00584	0.00559	0.00546
	(!CLK * !D * SCD * !Q)	0.00963	0.00938	0.00924
	(!CLK * !D * DE * SCD * Q)	0.00560	0.00535	0.00521
	(!CLK * !D * DE * SCD * Q)	0.00939	0.00915	0.00901
	(!CLK * !D * DE * !SCD * Q)	-0.00018	-0.00028	-0.00030
	(!CLK * !D * DE * !SCD * Q)	0.00305	0.00296	0.00294
	(!CLK * !D * !SCD * !Q)	-0.00008	-0.00017	-0.00020
	(!CLK * !D * !SCD * !Q)	0.00315	0.00307	0.00304
	(!CLK * !D * !DE * SCD * Q)	0.00024	0.00014	0.00012
	(!CLK * !D * !DE * SCD * Q)	0.00346	0.00338	0.00335
	(!CLK * !D * !DE * !SCD * Q)	0.00853	0.00865	0.00886
	(!CLK * !D * !DE * !SCD * Q)	0.01122	0.01133	0.01153

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00370	0.00384	0.00406
	(CLK * D)	0.00644	0.00657	0.00680
	(CLK * !D)	0.00369	0.00383	0.00405
	(CLK * !D)	0.00643	0.00656	0.00679
	(!CLK * D * SCD * Q)	0.00022	0.00012	0.00009
	(!CLK * D * SCD * Q)	0.00350	0.00341	0.00339
	(!CLK * D * DE * SCD * !Q)	0.00031	0.00021	0.00019
	(!CLK * D * DE * SCD * !Q)	0.00359	0.00350	0.00348
	(!CLK * D * DE * !SCD * !Q)	0.00848	0.00859	0.00879
	(!CLK * D * DE * !SCD * !Q)	0.01121	0.01132	0.01153
	(!CLK * D * !SCD * Q)	0.00849	0.00860	0.00880
	(!CLK * D * !SCD * Q)	0.01122	0.01133	0.01154
	(!CLK * D * !DE * SCD * !Q)	0.00577	0.00552	0.00538
	(!CLK * D * !DE * SCD * !Q)	0.00962	0.00937	0.00924
	(!CLK * D * !DE * !SCD * !Q)	-0.00010	-0.00020	-0.00023
	(!CLK * D * !DE * !SCD * !Q)	0.00319	0.00310	0.00307
	(!CLK * !D * SCD * !Q)	0.00577	0.00552	0.00538
	(!CLK * !D * SCD * !Q)	0.00963	0.00937	0.00923
	(!CLK * !D * DE * SCD * Q)	0.00557	0.00532	0.00518
	(!CLK * !D * DE * SCD * Q)	0.00942	0.00917	0.00903
	(!CLK * !D * DE * !SCD * Q)	-0.00019	-0.00029	-0.00032
	(!CLK * !D * DE * !SCD * Q)	0.00309	0.00300	0.00298
	(!CLK * !D * !SCD * !Q)	-0.00010	-0.00020	-0.00023
	(!CLK * !D * !SCD * !Q)	0.00319	0.00310	0.00307
	(!CLK * !D * !DE * SCD * Q)	0.00022	0.00012	0.00009
	(!CLK * !D * !DE * SCD * Q)	0.00350	0.00341	0.00339
	(!CLK * !D * !DE * !SCD * Q)	0.00849	0.00861	0.00881
	(!CLK * !D * !DE * !SCD * Q)	0.01122	0.01133	0.01155

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00374	0.00388	0.00411
	(CLK * D)	0.00644	0.00659	0.00681
	(CLK * !D)	0.00374	0.00388	0.00410
	(CLK * !D)	0.00644	0.00658	0.00681
	(!CLK * D * SCD * Q)	0.00024	0.00014	0.00011
	(!CLK * D * SCD * Q)	0.00349	0.00340	0.00338
	(!CLK * D * DE * SCD * !Q)	0.00033	0.00023	0.00021
	(!CLK * D * DE * SCD * !Q)	0.00358	0.00350	0.00348
	(!CLK * D * DE * !SCD * !Q)	0.00836	0.00848	0.00868
	(!CLK * D * DE * !SCD * !Q)	0.01107	0.01118	0.01140
	(!CLK * D * !SCD * Q)	0.00840	0.00852	0.00871
	(!CLK * D * !SCD * Q)	0.01110	0.01122	0.01143
	(!CLK * D * !DE * SCD * !Q)	0.00595	0.00570	0.00556
	(!CLK * D * !DE * SCD * !Q)	0.00977	0.00952	0.00939
	(!CLK * D * !DE * !SCD * !Q)	-0.00009	-0.00018	-0.00021
	(!CLK * D * !DE * !SCD * !Q)	0.00318	0.00309	0.00306
	(!CLK * !D * SCD * !Q)	0.00596	0.00570	0.00556
	(!CLK * !D * SCD * !Q)	0.00977	0.00952	0.00939
	(!CLK * !D * DE * SCD * Q)	0.00572	0.00547	0.00534
	(!CLK * !D * DE * SCD * Q)	0.00954	0.00930	0.00916
	(!CLK * !D * DE * !SCD * Q)	-0.00018	-0.00028	-0.00030
	(!CLK * !D * DE * !SCD * Q)	0.00308	0.00299	0.00297
	(!CLK * !D * !SCD * !Q)	-0.00009	-0.00018	-0.00021
	(!CLK * !D * !SCD * !Q)	0.00318	0.00309	0.00306
	(!CLK * !D * !DE * SCD * Q)	0.00024	0.00014	0.00011
	(!CLK * !D * !DE * SCD * Q)	0.00349	0.00340	0.00338
	(!CLK * !D * !DE * !SCD * Q)	0.00840	0.00852	0.00872
	(!CLK * !D * !DE * !SCD * Q)	0.01111	0.01122	0.01144

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.00955	0.00917	0.00902
	(SCD * SCE * Q)	0.00684	0.00647	0.00631
	(D * !SCE * Q)	0.00954	0.00916	0.00901
	(D * !SCE * Q)	0.00683	0.00646	0.00630
	(D * !DE * !SCE * !Q)	0.00962	0.00925	0.00907
	(D * !DE * !SCE * !Q)	0.00692	0.00654	0.00637
	(!SCD * SCE * !Q)	0.00963	0.00926	0.00908
	(!SCD * SCE * !Q)	0.00692	0.00655	0.00638
	(!D * !SCE * !Q)	0.00962	0.00925	0.00907
	(!D * !SCE * !Q)	0.00692	0.00654	0.00637
	(!D * !DE * !SCE * Q)	0.00954	0.00916	0.00901
	(!D * !DE * !SCE * Q)	0.00683	0.00646	0.00630
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.00966	0.00929	0.00913
	(SCD * SCE * Q)	0.00694	0.00657	0.00641
	(D * !SCE * Q)	0.00965	0.00929	0.00913
	(D * !SCE * Q)	0.00693	0.00656	0.00641
	(D * !DE * !SCE * !Q)	0.00973	0.00938	0.00920
	(D * !DE * !SCE * !Q)	0.00702	0.00665	0.00648
	(!SCD * SCE * !Q)	0.00974	0.00938	0.00921
	(!SCD * SCE * !Q)	0.00702	0.00665	0.00649
	(!D * !SCE * !Q)	0.00973	0.00938	0.00920
	(!D * !SCE * !Q)	0.00702	0.00665	0.00648
	(!D * !DE * !SCE * Q)	0.00965	0.00929	0.00913
	(!D * !DE * !SCE * Q)	0.00693	0.00656	0.00641

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00967	0.00928	0.00912
	(SCD * SCE * Q)	0.00684	0.00647	0.00630
	(D * !SCE * Q)	0.00966	0.00927	0.00911
	(D * !SCE * Q)	0.00683	0.00645	0.00629
	(D * !DE * !SCE * !Q)	0.00965	0.00925	0.00909
	(D * !DE * !SCE * !Q)	0.00683	0.00644	0.00627
	(!SCD * SCE * !Q)	0.00966	0.00927	0.00910
	(!SCD * SCE * !Q)	0.00684	0.00644	0.00628
	(!D * !SCE * !Q)	0.00965	0.00926	0.00909
	(!D * !SCE * !Q)	0.00683	0.00644	0.00627
	(!D * !DE * !SCE * Q)	0.00966	0.00927	0.00911
	(!D * !DE * !SCE * Q)	0.00683	0.00645	0.00629

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00541	0.00514	0.00498
	(SCD * SCE * Q)	0.00813	0.00784	0.00769
	(SCD * SCE * !Q)	0.01010	0.00979	0.00948
	(SCD * SCE * !Q)	0.01281	0.01249	0.01218
	(D * DE * !SCE * !Q)	0.01006	0.00976	0.00946
	(D * DE * !SCE * !Q)	0.01278	0.01246	0.01216
	(D * !SCE * Q)	0.00542	0.00515	0.00498
	(D * !SCE * Q)	0.00814	0.00785	0.00768
	(D * !DE * !SCE * !Q)	0.00520	0.00493	0.00478
	(D * !DE * !SCE * !Q)	0.00791	0.00763	0.00749
	(!SCD * SCE * Q)	0.01103	0.01072	0.01093
	(!SCD * SCE * Q)	0.01375	0.01343	0.01364
	(!SCD * SCE * !Q)	0.00519	0.00492	0.00477
	(!SCD * SCE * !Q)	0.00790	0.00762	0.00747
	(!D * DE * !SCE * Q)	0.01099	0.01073	0.01094
	(!D * DE * !SCE * Q)	0.01370	0.01343	0.01364
	(!D * !SCE * !Q)	0.00520	0.00493	0.00478
	(!D * !SCE * !Q)	0.00791	0.00763	0.00748
	(!D * !DE * !SCE * Q)	0.00542	0.00515	0.00498
	(!D * !DE * !SCE * Q)	0.00814	0.00785	0.00768

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00546	0.00518	0.00501
	(SCD * SCE * Q)	0.00819	0.00789	0.00774
	(SCD * SCE * !Q)	0.01009	0.00979	0.00949
	(SCD * SCE * !Q)	0.01282	0.01250	0.01220
	(D * DE * !SCE * !Q)	0.01006	0.00976	0.00946
	(D * DE * !SCE * !Q)	0.01279	0.01247	0.01218
	(D * !SCE * Q)	0.00546	0.00519	0.00502
	(D * !SCE * Q)	0.00819	0.00790	0.00774
	(D * !DE * !SCE * !Q)	0.00524	0.00497	0.00482
	(D * !DE * !SCE * !Q)	0.00797	0.00768	0.00754
	(!SCD * SCE * Q)	0.01107	0.01076	0.01096
	(!SCD * SCE * Q)	0.01381	0.01349	0.01369
	(!SCD * SCE * !Q)	0.00523	0.00496	0.00481
	(!SCD * SCE * !Q)	0.00796	0.00768	0.00753
	(!D * DE * !SCE * Q)	0.01108	0.01077	0.01097
	(!D * DE * !SCE * Q)	0.01381	0.01349	0.01369
	(!D * !SCE * !Q)	0.00524	0.00497	0.00482
	(!D * !SCE * !Q)	0.00797	0.00768	0.00754
	(!D * !DE * !SCE * Q)	0.00546	0.00519	0.00502
	(!D * !DE * !SCE * Q)	0.00819	0.00790	0.00774

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00530	0.00501	0.00485
	(SCD * SCE * Q)	0.00813	0.00782	0.00767
	(SCD * SCE * !Q)	0.00991	0.00960	0.00928
	(SCD * SCE * !Q)	0.01274	0.01241	0.01210
	(D * DE * !SCE * !Q)	0.00989	0.00958	0.00927
	(D * DE * !SCE * !Q)	0.01271	0.01238	0.01208
	(D * !SCE * Q)	0.00531	0.00503	0.00486
	(D * !SCE * Q)	0.00814	0.00784	0.00767
	(D * !DE * !SCE * !Q)	0.00518	0.00490	0.00474
	(D * !DE * !SCE * !Q)	0.00800	0.00771	0.00756
	(!SCD * SCE * Q)	0.01085	0.01053	0.01073
	(!SCD * SCE * Q)	0.01369	0.01335	0.01355
	(!SCD * SCE * !Q)	0.00517	0.00489	0.00473
	(!SCD * SCE * !Q)	0.00799	0.00770	0.00755
	(!D * DE * !SCE * Q)	0.01087	0.01055	0.01073
	(!D * DE * !SCE * Q)	0.01369	0.01335	0.01355
	(!D * !SCE * !Q)	0.00518	0.00490	0.00474
	(!D * !SCE * !Q)	0.00800	0.00771	0.00756
	(!D * !DE * !SCE * Q)	0.00531	0.00501	0.00486
	(!D * !DE * !SCE * Q)	0.00814	0.00782	0.00768

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor2_1	11.18880
sky130_fd_sc_hs__xnor2_2	17.58240
sky130_fd_sc_hs__xnor2_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__xnor2_1	0.00467	0.00486	0.16272
sky130_fd_sc_hs__xnor2_2	0.00779	0.00780	0.31839
sky130_fd_sc_hs__xnor2_4	0.01379	0.01425	0.57149

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	0.00019	0.00026
sky130_fd_sc_hs__xnor2_2	0.00000	0.00034	0.00046
sky130_fd_sc_hs__xnor2_4	0.00000	0.00053	0.00072

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	0.16966	0.90574	4.86354
	A->Y (FR)	!B	0.32020	1.92506	13.64100
	B->Y (RR)	A	0.16299	0.88897	4.67399
	B->Y (FR)	!A	0.28549	1.83876	13.28310
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.18189	0.84822	5.03123
	A->Y (FR)	!B	0.31392	1.70019	13.62390
	B->Y (RR)	A	0.17711	0.84164	4.86971
	B->Y (FR)	!A	0.27176	1.60699	13.25270
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.21946	1.05130	7.88794
	A->Y (FR)	!B	0.30159	1.53660	13.61040
	B->Y (RR)	A	0.21166	1.03271	7.67691
	B->Y (FR)	!A	0.25830	1.44462	13.28220

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	0.24753	1.00664	5.55958
	A->Y (RF)	!B	0.06331	0.59461	4.56975
	B->Y (FF)	A	0.23360	0.99134	5.52484
	B->Y (RF)	!A	0.05391	0.58029	4.53679
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.30680	1.07722	6.14513
	A->Y (RF)	!B	0.06101	0.54625	4.54395
	B->Y (FF)	A	0.27460	1.03009	5.92910
	B->Y (RF)	!A	0.05684	0.53746	4.54656
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.28236	1.02250	5.95720
	A->Y (RF)	!B	0.06135	0.50356	4.47523
	B->Y (FF)	A	0.25273	0.97764	5.71472
	B->Y (RF)	!A	0.05670	0.49310	4.48228

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	0.00653	0.00647	0.00644
	A	B	0.00134	0.00125	0.00133
	A	!B	-0.00056	-0.00065	-0.00067
	A	!B	0.00442	0.00437	0.00433
	B	A	0.00612	0.00592	0.00584
	B	A	0.00171	0.00151	0.00145
	B	!A	0.00008	0.00001	-0.00001
	B	!A	0.00435	0.00429	0.00426
sky130_fd_sc_hs__xnor2_2	A	B	0.01039	0.01036	0.01034
	A	B	0.00285	0.00276	0.00284
	A	!B	-0.00005	-0.00024	-0.00026
	A	!B	0.00870	0.00852	0.00850
	B	A	0.01008	0.00984	0.00980
	B	A	0.00352	0.00329	0.00349
	B	!A	0.00040	0.00021	0.00019
	B	!A	0.00810	0.00793	0.00788
sky130_fd_sc_hs__xnor2_4	A	B	0.01668	0.01662	0.01671
	A	B	0.00322	0.00307	0.00314
	A	!B	-0.00076	-0.00116	-0.00117
	A	!B	0.01587	0.01556	0.01553
	B	A	0.01633	0.01582	0.01578
	B	A	0.00478	0.00426	0.00423
	B	!A	-0.00004	-0.00045	-0.00046
	B	!A	0.01463	0.01426	0.01423

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	0.00175	0.00168	0.00166
	A	B	0.00695	0.00689	0.00684
	A	!B	0.00560	0.00554	0.00551
	A	!B	0.00048	0.00040	0.00037
	B	A	0.00243	0.00193	0.00179
	B	A	0.00680	0.00628	0.00613
	B	!A	0.00396	0.00395	0.00392
	B	!A	-0.00032	-0.00035	-0.00039
sky130_fd_sc_hs__xnor2_2	A	B	0.00356	0.00351	0.00350
	A	B	0.01121	0.01111	0.01107
	A	!B	0.01046	0.01030	0.01022
	A	!B	0.00157	0.00135	0.00130
	B	A	0.00482	0.00402	0.00377
	B	A	0.01128	0.01053	0.01017
	B	!A	0.00791	0.00786	0.00784
	B	!A	0.00016	0.00008	0.00007
sky130_fd_sc_hs__xnor2_4	A	B	0.00579	0.00547	0.00568
	A	B	0.01938	0.01914	0.01901
	A	!B	0.01909	0.01869	0.01870
	A	!B	0.00213	0.00168	0.00161
	B	A	0.00706	0.00598	0.00531
	B	A	0.01843	0.01732	0.01670
	B	!A	0.01454	0.01443	0.01455
	B	!A	-0.00020	-0.00038	-0.00033

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor3_1	27.17280
sky130_fd_sc_hs__xnor3_2	28.77120
sky130_fd_sc_hs__xnor3_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xnor3_1	0.00249	0.00680	0.00395	0.34891
sky130_fd_sc_hs__xnor3_2	0.00253	0.00682	0.00400	0.72366
sky130_fd_sc_hs__xnor3_4	0.00251	0.00681	0.00391	1.41038

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	0.00086	0.00096
sky130_fd_sc_hs__xnor3_2	0.00000	0.00093	0.00105
sky130_fd_sc_hs__xnor3_4	0.00000	0.00107	0.00125

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)	0.67285	1.98478	12.28540
	B->X (-R)	0.48127	1.78961	11.75750
	C->X (-R)	0.37944	1.67220	11.26130
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.70788	1.88679	12.57290
	B->X (-R)	0.50207	1.67970	12.03290
	C->X (-R)	0.39468	1.55817	11.53840
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.79276	1.87777	12.58900
	B->X (-R)	0.59666	1.67708	12.06930
	C->X (-R)	0.47784	1.54665	11.57530

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	1.04486	1.94222	8.04106
	B->X (-F)	0.93516	1.81893	7.65094
	C->X (-F)	0.53512	1.33194	6.49307
sky130_fd_sc_hs__xnor3_2	A->X (-F)	1.16315	2.06714	8.28883
	B->X (-F)	1.05766	1.95895	8.03400
	C->X (-F)	0.72552	1.55565	7.12210
sky130_fd_sc_hs__xnor3_4	A->X (-F)	1.37891	2.31904	8.76790
	B->X (-F)	1.31176	2.25544	8.64660
	C->X (-F)	1.09509	1.96436	7.90374

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01611	0.01597	0.01576
	A	0.01590	0.01581	0.01567
	B	0.01504	0.01518	0.01569
	B	0.01471	0.01476	0.01540
	C	0.00737	0.00712	0.00698
	C	0.00755	0.00791	0.00834
sky130_fd_sc_hs__xnor3_2	A	0.01772	0.01772	0.01755
	A	0.01744	0.01753	0.01757
	B	0.01665	0.01700	0.01752
	B	0.01623	0.01642	0.01714
	C	0.00913	0.00906	0.00897
	C	0.00909	0.00959	0.01018
sky130_fd_sc_hs__xnor3_4	A	0.02180	0.02205	0.02205
	A	0.02123	0.02154	0.02192
	B	0.02044	0.02102	0.02173
	B	0.01999	0.02040	0.02148
	C	0.01299	0.01316	0.01328
	C	0.01287	0.01363	0.01446

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01500	0.01493	0.01472
	A	0.01604	0.01600	0.01580
	B	0.01375	0.01395	0.01444
	B	0.01510	0.01518	0.01567
	C	0.00773	0.00803	0.00878
	C	0.00671	0.00654	0.00649
sky130_fd_sc_hs__xnor3_2	A	0.01647	0.01668	0.01654
	A	0.01742	0.01767	0.01754
	B	0.01517	0.01561	0.01617
	B	0.01651	0.01681	0.01737
	C	0.00909	0.00958	0.01051
	C	0.00833	0.00833	0.00832
sky130_fd_sc_hs__xnor3_4	A	0.02031	0.02097	0.02132
	A	0.02090	0.02154	0.02158
	B	0.01871	0.01948	0.02034
	B	0.02002	0.02071	0.02148
	C	0.01261	0.01360	0.01468
	C	0.01197	0.01242	0.01251

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	X
0	0	0
0	1	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor2_1	12.78720
sky130_fd_sc_hs__xor2_2	15.98400
sky130_fd_sc_hs__xor2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__xor2_1	0.00477	0.00499	0.15438
sky130_fd_sc_hs__xor2_2	0.00733	0.00730	0.29450
sky130_fd_sc_hs__xor2_4	0.01476	0.01479	0.55194

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	0.00019	0.00022
sky130_fd_sc_hs__xor2_2	0.00000	0.00026	0.00029
sky130_fd_sc_hs__xor2_4	0.00000	0.00052	0.00059

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	0.26016	1.55335	9.03205
	A->X (FR)	B	0.34387	1.96980	13.64970
	B->X (RR)	!A	0.32656	1.60376	9.20592
	B->X (FR)	A	0.27340	1.86712	13.38230
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.19852	1.29494	9.05041
	A->X (FR)	B	0.29970	1.70513	13.52700
	B->X (RR)	!A	0.25404	1.30608	8.98364
	B->X (FR)	A	0.22985	1.63075	13.45680
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.18844	1.09759	8.96017
	A->X (FR)	B	0.30023	1.53060	13.40360
	B->X (RR)	!A	0.22843	1.09458	8.74257
	B->X (FR)	A	0.23114	1.47031	13.45550

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	0.40944	1.16343	6.02064
	A->X (RF)	B	0.05582	0.57701	4.41761
	B->X (FF)	!A	0.38783	1.08688	5.49909
	B->X (RF)	A	0.04756	0.59053	4.56968
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.53096	1.33619	6.83046
	A->X (RF)	B	0.05201	0.53170	4.43537
	B->X (FF)	!A	0.47951	1.23890	6.31120
	B->X (RF)	A	0.04705	0.57776	4.90931
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.51059	1.28409	6.75852
	A->X (RF)	B	0.05323	0.49562	4.40754
	B->X (FF)	!A	0.45067	1.17312	6.18765
	B->X (RF)	A	0.04795	0.52420	4.77926

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	0.00007	0.00001	-0.00001
	A	B	0.00540	0.00536	0.00535
	A	!B	0.00743	0.00732	0.00723
	A	!B	0.00209	0.00196	0.00188
	B	A	-0.00016	-0.00025	-0.00027
	B	A	0.00419	0.00413	0.00412
	B	!A	0.00690	0.00628	0.00607
	B	!A	0.00253	0.00189	0.00168
sky130_fd_sc_hs__xor2_2	A	B	0.00053	0.00041	0.00039
	A	B	0.00919	0.00906	0.00903
	A	!B	0.01006	0.00988	0.00980
	A	!B	0.00260	0.00245	0.00233
	B	A	-0.00041	-0.00053	-0.00055
	B	A	0.00687	0.00674	0.00674
	B	!A	0.01004	0.00918	0.00886
	B	!A	0.00395	0.00311	0.00277
sky130_fd_sc_hs__xor2_4	A	B	0.00060	0.00024	0.00022
	A	B	0.01896	0.01866	0.01862
	A	!B	0.01991	0.01938	0.01915
	A	!B	0.00535	0.00483	0.00459
	B	A	-0.00085	-0.00108	-0.00112
	B	A	0.01455	0.01432	0.01432
	B	!A	0.01819	0.01680	0.01618
	B	!A	0.00662	0.00530	0.00463

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	0.00488	0.00481	0.00475
	A	B	-0.00037	-0.00048	-0.00054
	A	!B	0.00146	0.00144	0.00145
	A	!B	0.00674	0.00677	0.00679
	B	A	0.00433	0.00425	0.00420
	B	A	0.00001	-0.00009	-0.00016
	B	!A	0.00221	0.00208	0.00207
	B	!A	0.00672	0.00656	0.00658
sky130_fd_sc_hs__xor2_2	A	B	0.00826	0.00810	0.00799
	A	B	-0.00034	-0.00055	-0.00066
	A	!B	0.00133	0.00135	0.00138
	A	!B	0.00864	0.00874	0.00874
	B	A	0.00724	0.00703	0.00702
	B	A	0.00002	-0.00023	-0.00032
	B	!A	0.00227	0.00216	0.00219
	B	!A	0.00863	0.00857	0.00853
sky130_fd_sc_hs__xor2_4	A	B	0.01723	0.01688	0.01672
	A	B	-0.00093	-0.00148	-0.00163
	A	!B	0.00288	0.00294	0.00297
	A	!B	0.01712	0.01735	0.01731
	B	A	0.01503	0.01452	0.01447
	B	A	-0.00028	-0.00084	-0.00093
	B	!A	0.00513	0.00487	0.00485
	B	!A	0.01713	0.01700	0.01684

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_ss_1.44v_-40C.ccs
Cell Library: Process , Voltage 1.44,
Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C	X
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor3_1	30.36960
sky130_fd_sc_hs__xor3_2	31.96800
sky130_fd_sc_hs__xor3_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xor3_1	0.00247	0.00696	0.00395	0.36041
sky130_fd_sc_hs__xor3_2	0.00249	0.00704	0.00394	0.71668
sky130_fd_sc_hs__xor3_4	0.00247	0.00712	0.00390	1.40570

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	0.00086	0.00096
sky130_fd_sc_hs__xor3_2	0.00000	0.00093	0.00105
sky130_fd_sc_hs__xor3_4	0.00000	0.00107	0.00125

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)	0.65432	1.96738	12.38420
	B->X (-R)	0.44658	1.76371	11.83650
	C->X (-R)	0.38355	1.68613	11.46530
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.67764	1.84896	12.42840
	B->X (-R)	0.46733	1.64399	11.89150
	C->X (-R)	0.40404	1.56860	11.54940
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.76046	1.83649	12.58310
	B->X (-R)	0.54335	1.62514	12.02500
	C->X (-R)	0.47117	1.54183	11.68720

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	1.05339	1.94110	8.01085
	B->X (-F)	0.93101	1.81127	7.63287
	C->X (-F)	0.48657	1.26695	6.35516
sky130_fd_sc_hs__xor3_2	A->X (-F)	1.16105	2.06528	8.27949
	B->X (-F)	1.05090	1.95470	8.03150
	C->X (-F)	0.69956	1.51988	7.04092
sky130_fd_sc_hs__xor3_4	A->X (-F)	1.41141	2.34870	8.80753
	B->X (-F)	1.32760	2.27232	8.67672
	C->X (-F)	1.07514	1.94405	7.94001

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01710	0.01694	0.01673
	A	0.01583	0.01572	0.01560
	B	0.01616	0.01634	0.01678
	B	0.01458	0.01477	0.01554
	C	0.00747	0.00724	0.00710
	C	0.00744	0.00781	0.00829
sky130_fd_sc_hs__xor3_2	A	0.01886	0.01888	0.01869
	A	0.01743	0.01752	0.01754
	B	0.01794	0.01826	0.01884
	B	0.01614	0.01648	0.01742
	C	0.00926	0.00918	0.00909
	C	0.00931	0.00981	0.01038
sky130_fd_sc_hs__xor3_4	A	0.02278	0.02306	0.02304
	A	0.02147	0.02181	0.02214
	B	0.02194	0.02250	0.02324
	B	0.01993	0.02049	0.02169
	C	0.01292	0.01310	0.01319
	C	0.01296	0.01374	0.01461

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01613	0.01606	0.01584
	A	0.01607	0.01602	0.01582
	B	0.01503	0.01525	0.01573
	B	0.01502	0.01527	0.01601
	C	0.00821	0.00853	0.00935
	C	0.00665	0.00648	0.00644
sky130_fd_sc_hs__xor3_2	A	0.01756	0.01778	0.01767
	A	0.01742	0.01763	0.01747
	B	0.01645	0.01692	0.01746
	B	0.01636	0.01684	0.01765
	C	0.00978	0.01032	0.01123
	C	0.00825	0.00828	0.00827
sky130_fd_sc_hs__xor3_4	A	0.02140	0.02209	0.02211
	A	0.02138	0.02202	0.02206
	B	0.02033	0.02116	0.02212
	B	0.02013	0.02102	0.02195
	C	0.01307	0.01417	0.01540
	C	0.01207	0.01250	0.01262